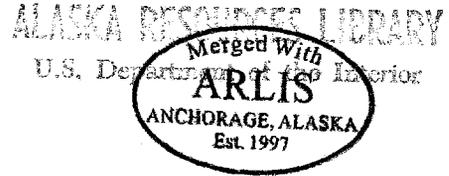


Final Report

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Forecasting Peak Electrical Demand for Alaska's Railbelt

Prepared by

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for

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Buffalo, New York 14202

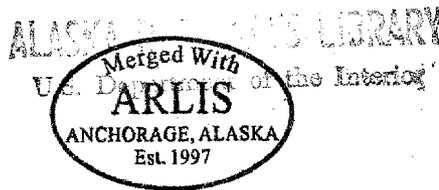
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Three Embarcadero Center, Suite 700, San Francisco, CA 94111

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This document constitutes the final report describing the work carried out by Woodward-Clyde Consultants (WCC) under Subtask 1.02 of agreement number P5700.10.41 between WCC and Acres American Incorporated (Acres) for the Susitna Hydroelectric Project. This report describes the basic approach taken by WCC, the assumptions made, the extent and accuracy of the data used, the results obtained and the strengths and limitations of the forecasting procedures used.

The primary objective of WCC's activities on Subtask 1.02 of the Susitna Hydroelectric Project, as specified in the abovementioned agreement and clarified in a letter from Acres on September 16, 1980, is to provide projections of future aggregate electric demand patterns for the Alaska Railbelt Region. These projections were to be based on the recent projections of total electric energy demand made by the Institute of Social and Economic Research of the University of Alaska (ISER). The information provided here includes projections of peak megawatt demand level and month-to-annual load ratios for each year from 1980 through 2010 as well as monthly per-unit load ratios and hourly load ratios at 10-year intervals over this period. This information is provided in tabular form so that it can be used by Acres with little or no manipulation.

2.1 ELECTRIC UTILITIES IN THE RAILBELT

Eight electric utility companies supply most of the electricity for the communities in the Railbelt:

- Chugach Electric Assn., Inc.
- Anchorage Municipal Light & Power Dept.
- Homer Electric Assn., Inc.
- Matanuska Electric Assn., Inc.
- Seward Electric System
- Golden Valley Electric Assn., Inc.
- Fairbanks Municipal Utilities System
- Cooper Valley Electric Assn., Inc.

The first five utilities serve the greater Anchorage area, with Chugach and Anchorage Municipal serving the city itself, Homer serving most of the Kenai Peninsula, Matanuska serving the Palmer-Talkeetna area and Seward serving the town of Seward on the Kenai peninsula. Homer, Matanuska and Seward purchase most of their power from Chugach, the largest utility in the area.

The Fairbanks area is served by Golden Valley and Fairbanks Municipal while Copper Valley serves both the Glenallen and Valdez areas.

Table 2.1 summarizes some characteristics of these utilities.

TABLE 2.1. SUMMARY OF RAILBELT UTILITIES

	1978 Number of Customers	1978 Sales (MWhx10 ³)	1978 Peak Load (MW)	Installed Capacity (MW)	Purchased Electricity 1978 (MWhx10 ³)	Type of System
<u>Anchorage Area</u>						
Anchorage Municipal	16,740	498	109	184	107*	Municipal
Chugach	47,904	1,257	284	420	42*	Rural Electric Coop.
Homer	9,332	225	51	2.6	239**	Rural Electric Coop.
Matanuska	12,311	212	57	0.9	244+	Rural Electric Coop.
Seward	1,272	18	7	5.5	20**	Municipal
<u>Fairbanks Area</u>						
Golden Valley	15,213	309	72	211	3	Rural Electric Coop.
Fairbanks Municipal	5,780	116	28	67	-3 ⁺⁺	Municipal
<u>Glenallen-Valdez</u>						
Copper Valley	2,173	42	na	18	0	Rural Electric Coop.

*Purchased from Alaska Power Administration (APA)

**Purchased from Chugach

+Purchased from Chugach and APA

++Sales to Golden Valley

SOURCE: Electrical World Directory of Utilities, 1979-1980 Edition, McGraw-Hill, 1979

2.2 DATA SOURCES

The main source of historical data used for this study was the information supplied by the individual utilities to the Federal Energy Regulatory Commission (FERC). Each year the utilities are required to complete a "Power System Statement" (FERC Form 12). This statement includes information on monthly sales and peak loads, types and numbers of customers and transfers between utilities. In addition the larger utilities are required to provide hourly load data for three specific weeks during the year. Four utilities in the Railbelt provide this data (Anchorage Municipal, Chugach, Fairbanks Municipal and Golden Valley).

This data was used as the primary data source for this study because it is provided by all the utilities in a consistent and comparable format and because it is the most extensive source of information available in the public record.

Information from the Power System Statements was compiled for the years 1970 through 1979, where available, providing a 10 year data base. Table 2.2 shows the data filed with FERC by each utility during each year.

The predictions of future total electric energy demands used in this study were those developed by the University of Alaska's Institute of Social and Economic Research (ISER) in their 1980 study¹ *.

2.3 LIMITATIONS OF DATA

While the data contained in the FERC Power System Statements is the most complete and usable published information source available for the Railbelt, it has several limitations. The most severe

*References are listed following Section 4.

TABLE 2.2 POWER SYSTEM FILINGS 1970 - 1979

	FERC Form 12A*	FERC Form 12	Hourly Load Data
Anchorage Municipal 1970 - 1979		X	X
Chugach 1970 - 1979		X	X
Homer 1970 - 1979		X	
Matanuska 1970 - 1979	X		
Seward 1970 - 1979	X		
Golden Valley 1970 - 1978		X	X
1979		No forms filed as of 9/10/80	
Fairbanks Municipal 1970 - 1974		X	
1975 - 1979		X	X
Copper Valley 1970 - 1977	X		
1978		X	
1979		No forms filed as of 9/10/80	

*Short form for smaller utilities

limitation is that hourly data is given for only three weeks out of the year. (The first weeks of April, August and December). This is a very limited data base from which to prepare estimates of load curves for an entire year. In particular, the week shown on the Power System Statements is not likely to contain both the minimum and maximum load from a given month. This means that a monthly load duration curve computed from just one week's data is likely to show less variation than one computed from an entire month's data. The result will be a higher predicted load factor than actual and thus a lower predicted peak than actual. The data for the railbelt resulted in differences between our computed and the actual historical peaks of approximately 5 to 10 percentage points. There does not appear to be any simple defensible solution to this problem, since there is no data based way to estimate the shape of the load for the portion of the month not shown. Thus there is no way based on the available data to adjust the monthly load duration curve to force the calculated peak load to match the actual peak. This topic is discussed further in Section 4.0.

In addition to this data limitation there appear to be a certain number of clerical problems with the data. For example, some utilities reported hourly daily loads with more or less than 24 data points. The data was adjusted to eliminate these problems by making simple assumptions about the most reasonable way to arrive at a complete unambiguous data base.

The limitations of ISERs total demand projections were discussed in detail in our review of that work². For the purposes of this study, the projections were treated as given, and no adjustments were made.

3.1 POSSIBLE METHODS FOR FORECASTING LOAD PATTERNS

This section provides a brief overview of methods for peak electric load forecasting. It is not intended to be a complete look at the field. Summaries have been compiled by Charles River Associates³ and EPRI⁴, among others. Due to the limited data base available and the requirement of matching the ISER forecasts, a simple approach was used here. The details of the selected approach are discussed in Section 3.2.

Forecasting load patterns (other than peak loads) is a question that has only recently been given detailed attention in the utility industry. Prior to the 1973-1974 "energy crisis", very little sophisticated work had been done even on predicting peak loads. Predictions of peak load were usually based on simple extrapolations of existing trends.

Recently there has been increased interest in methods for forecasting peak loads. A primary reason for this is that simple extrapolation no longer gives accurate results in the current energy environment. Other reasons for this interest include increased fuel prices, increased lead times for new facilities, pressure from regulatory agencies to better demonstrate the need for power and increased interest in conservation. Interest in load shapes has also grown due to interest in the possibilities of load management. Many suggested

load management strategies involve shifting electrical use from one time of day to another. The effectiveness of such proposals thus depends on the changes in the rate of electrical use during each day.

A survey by Charles River Associates of peak load forecasting³ identified no models which integrate the effect of load management into the basic model structure.

The most common approach to estimating peak load based on total generation forecasts is by the use of historical load factors. The load factor is the ratio of total generation to the product of peak load and the number of hours in the year (8760). All recent estimates of peak load in the Railbelt have used an assumed load factor to arrive at peak load from total generation (see Table 4.2.1). There are several drawbacks to this approach. Most obviously, this approach yields no information on the shape of the load, only the peak. In addition, if results from more than one utility are to be combined, there is no data based way to estimate the combined load factor. This is because it is likely the peaks for the utilities would occur at different times thus making the overall peak lower than the sum of the individual peaks.

There are many possible variations on the use of historical load factors. One of the most common is to adjust historical data for weather fluctuations. In this approach the influence on historical peaks of yearly weather patterns is estimated using statistical methods. Each year's peak is adjusted to normalized weather patterns before a yearly load factor is computed.

Another possibility is to compute load factors for various classes of customers. However, doing this requires disaggregation of total load duration curves into curves for each category. This type

of data is only available on a yearly basis in the Railbelt area. No hourly information has been published for different customer classes.

The approach selected for this study was to estimate the peak load indirectly by looking at available information on hourly load patterns. By normalizing these patterns to account for changing electricity use and averaging over several years, fluctuations due to weather patterns can hopefully be eliminated. The hourly data are comparable between utilities and thus can be added together to allow identification of regional peaks.

This approach has the disadvantage of not accounting for any trends over time in the load patterns. In addition, due to the incompleteness of the data base for the Railbelt, as discussed in Section 2.3, the total range of variation in hourly peaks is not captured. This will result in load factors that are higher than the historical average and thus in peaks that are underestimated. Our selected approach is described in more detail in Section 3.2.

The various approaches described above estimate peak loads indirectly by using projections of total sales. Since the ISER forecasts were to be used as the basis of this study, this type of approach was necessary. If no estimate of total sales is available there are methods to estimate peak loads directly. The simplest approach is extrapolation from historical data, either using some type of trend line or the more sophisticated methods of time series analysis. Again weather effects and disaggregation can be included in this type of approach.

The most sophisticated method for peak load estimation is economic end-use analysis. With this method the total load is broken down into many component parts. For example, Public Service Electric

& Gas (PSE&G)⁵ has developed a model which includes characteristic load patterns for weather sensitive and non-weather sensitive portions for residential, commercial, and industrial customers. The curves for each of these sectors are further disaggregated in the PSE&G model. For example, the residential sector includes five separate types of water heater load pattern (i.e., estimated hourly electrical use for a single water heater): conventional, one element time-clock controlled, full storage, heat pump and solar. The other sections of the model are similarly disaggregated. An econometric model is needed to drive the load projection model which can forecast the number of users in each category (e.g., the number of each of the five types of water heater in use, etc.). Once this information is available, the total load pattern (i.e., the total amount of electricity used each hour) can be generated by summing the individual load patterns. The peak load is then the highest hourly electrical use and the total sales are the area under the curve (i.e., the total MWh of electricity used). This type of model is the only one that can directly assess the impact of various load management and time-of-day pricing strategies. The development of this type of model is still in its infancy. Its major drawback is the enormous data requirement (a complete yearly load pattern for each end use) and the difficulty in calibrating the load curves. No utilities in the Railbelt and few in the lower 48 states are currently collecting this type of data. It may be possible to use standardized data for some end uses (e.g., develop standard water heater hourly load patterns), but these curves may need to be adjusted to suit local conditions. The other drawback is the need for a very sophisticated econometric model to forecast the number of users in each end use category. ISER's MAP model, when completed and calibrated, could potentially provide the basis for a viable end use model for the Railbelt. However, this would require more research, data collection and calibration.

3.2 DISCUSSION OF SELECTED APPROACH

The approach selected here for forecasting electrical use patterns for the Railbelt is based on analysis of historical use patterns. The emphasis was on identifying average patterns over the ten years from 1970-1979 and not in identifying trends or changes in the patterns during that period. This was reasonable since our analysis did not reveal any clear cut trends in any of the parameters examined, except, of course, that total electrical use is growing. Use of average values should reduce the impact of yearly variations in such parameters as weather, which are not explicitly addressed in the approach.

The historical data available from annual "Power System Statements" (see Section 2.2) was used to arrive at four normalized sets of electrical use patterns corresponding to the four major utilities in the Railbelt. The total electrical use from ISER's forecasts was then distributed among these standard patterns in a way that was consistent with the distribution of use among categories of customers projected by ISER. Finally, the estimated use patterns were combined to obtain an overall pattern and peak load estimate for the entire Railbelt. The remainder of this section describes the details of how these steps were accomplished.

3.2.1 Identifying Standard Load Duration Patterns

Four of the utilities in the Railbelt area supply hourly data on the FERC Power System Statement. The hourly data were used to develop four different load patterns for the Railbelt. The patterns developed were labeled as follows:

Pattern A1 = Chugach data

Pattern A2 = Anchorage Municipal data

Pattern F1 = Golden Valley data

Pattern F2 = Fairbanks Municipal data.

Since Chugach also supplies most of the power used by Homer, Matanuska and Seward, the electricity sold to these utilities by Chugach is included in the hourly data supplied by Chugach. Thus it is reasonable to consider pattern A1 as a composite of Chugach, Homer, Matanuska and Seward. The additional power generated by Homer, Matanuska and Seward was assumed to follow the same pattern A1.

The only remaining utility is Copper Valley, which serves the Glenallen-Valdez area. It was assumed that its generation pattern could be approximated by a combination of patterns A1 and A2 adjusted to represent the mix of customer categories shown in the ISER forecasts.

ISER also reported figures for power generated by the military and self supplied industries. Pattern A2 was used for the self supplied industrial generation because most of the industries are located in the greater Anchorage area and because Anchorage Municipal has the largest percentage of commercial and industrial customers of any of the utilities studied. Both Anchorage Municipal and Golden Valley sell some power to military bases in the Railbelt. Thus, it was assumed that the military load followed the patterns A2 and F2 in proportion to the percentage of military generation in the Anchorage and Fairbanks areas.

Each of the four standard patterns consisted of the following information, based on the historical data in the Power System Statements:

- average weekly per unit load patterns for the first weeks of April, August and December. These consist of seven 24-hour patterns for each week
- average monthly to yearly total generation ratios

- average percentage of total generation for each customer category.

The three weekly per unit load generation patterns were computed by entering the hourly data for each of the three weeks shown in the Power System Statement into a computerized data base for each available year between 1970 and 1979. This data base is reproduced in Appendix A. Certain adjustments to the hours shown in the Power System Statements were necessary. These are listed in Table 3.2.1.

Each week in this data base was then normalized by dividing each entry by the sum of all the entries in the week. Once this was done the corresponding weeks from different years could be averaged to obtain the three "standard weeks" for the four load patterns which were used in our analysis. These standard weeks are shown in Appendix B.

Monthly total generation is reported by each utility on its Power System Statement. This information was used to compute month to annual generation ratios. These ratios were then averaged over the available years to obtain standard monthly to yearly generation ratios for each utility. These ratios are shown in Table 3.2.2.

3.2.2. Adjusting Customer Categories and Allocating Total Sales

Table 3.2.3 shows the average percentage of customers for each utility in each of the categories used by ISER. This information is also reported to FERC on the Power System Statements.* Since Chugach sells a portion of its power to other utilities, the percentage in

*Residential was assumed to be the sum of "Farm, excluding irrigation and drainage pumping" and "non-farm residential". Commercial/Industrial/Governmental was assumed to be the sum of "Commercial", "Industrial", and "Other" if specified as Governmental. All other classifications were included as Other.

TABLE 3.2.1 ADJUSTMENTS TO POWER SYSTEM STATEMENT*

1. Anchorage Municipal 1978-1979	26 periods were reported for each day. Periods 1 and 13 were assumed to represent midnight and noon values and were eliminated from our analysis.
2. Golden Valley Dec. 1973	Assumed 20,640 reported for Thursday 7-8 am was meant to be 40,640.
3. Golden Valley Apr. 1978	21 periods reported for each day. Assumed these were periods 12-1 am to 8-9 pm and that 9-10, 10-11, and 11-12 pm all had exactly the same shape as 8-9 pm.
4. Fairbanks Municipal Dec. 1976	23 periods reported for each day. Assumed last period (11-12 pm) was not included and that it had the same value as 10-11 pm.

*The adjustments shown in this table were arrived at by informal examination of the data. Based on this examination and a comparison with data for other years, the adjustments appear to compensate for the errors in the data. Since these errors affect such a small portion of the data used in the analyses, they should have little influence on the results of the analysis.

TABLE 3.2.2 AVERAGE RATIO OF MONTHLY TO TOTAL ANNUAL GENERATION (1970-1979)*

Load Pattern	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pattern A1 (Chugach)	.103	.089	.089	.076	.071	.064	.065	.067	.072	.088	.101	.116
Pattern A2 (Anchorage Municipal)	.099	.086	.089	.078	.074	.067	.068	.074	.076	.087	.096	.105
Pattern F1 (Golden Valley)	.115	.099	.095	.077	.063	.053	.057	.061	.067	.088	.107	.119
Pattern F2 (Fairbanks Municipal)	.110	.097	.092	.083	.078	.074	.076	.078	.080	.091	.101	.115

*Source: FERC Power System Statements

TABLE 3.2.3 AVERAGE CUSTOMER CATEGORIES (BY TOTAL YEARLY SALES)* (1970-1979)

Load Pattern	Residential	Commercial/ Industrial Governmental	Other
Pattern A1 (Chugach)+	57.1	39.7	2.7
Pattern A2 (Anchorage Municipal)	25.	72.	3.
Pattern F1 (Golden Valley)	51.2	47.6	1.2
Pattern F2 (Fairbanks Municipal)	28.6	66.5	4.6

*Average percentage; 1970-1979. Percentages may not sum to 100 due to rounding error.

+Composite of Chugach, Homer, Matanuska, Seward. See Table 3.2.4.

each category was adjusted by using a weighted average of the utilities involved. This computation is shown in Table 3.2.4.

To estimate load patterns associated with total sales forecast by ISER for the three regions of the Railbelt (greater Anchorage, greater Fairbanks and Glenallen-Valdez) it was necessary to examine the mix of customer classifications predicted by ISER. In order to do this, the following assumptions were made:

- There is a single underlying pattern for residential electrical consumption for the Anchorage area; that is, the pattern of consumption of electric energy is the same for Anchorage Municipal residential customers as for Chugach residential customers.
- Similarly, there is a single underlying pattern for commercial electrical consumption for the Anchorage area.
- There is a single underlying pattern for residential electrical consumption for the Fairbanks area; that is, the pattern of consumption of electric energy is the same for Fairbanks Municipal residential customers and Golden Valley residential customers.
- Similarly, there is a single underlying pattern for commercial electrical consumption for the Fairbanks area.
- Finally, these four patterns will not change over the forecast period considered in this study; that is, the pattern of consumption of a kilowatt-hour of electric energy in each of the four categories will remain stable.

TABLE 3.2.4 COMPUTATION OF LOAD PATTERN AI CUSTOMER CLASSIFICATIONS*

Utility	% Energy Unaccounted For	% Customer Classifications			Total Sales (Mwh x 10 ³)	Non-Chugach Generation (Mwh x 10 ³)	Net ^(a) Non-Chugach Sales (Mwh x 10 ³)
		Residential	Commercial**	Other			
Chugach	13.9	61.2	35.6	3.2	781	--	--
Matanuska	11.5	64.3	31.7	1.2	223	27	24
Homer	8.9	35.6	62.5	1.9	196	2	2
Seward	13.8	34.0	62.5	4.0	20	1	1

Utility	Total Chugach Sales (Mwh x 10 ³)	% of Chugach Total	weighted % in Customer Classifications* ^(b)		
			Residential	Commercial	Other
Chugach	781	65.5	40.1	23.3	2.1
Matanuska	199	16.7	10.7	5.3	0.2
Homer	194	16.2	5.8	10.1	0.3
Seward	19	1.6	0.5	1.0	0.1
Total	1193	100.0	57.1	39.7	2.7

(a) (Non-Chugach generation)/(1 + % energy unaccounted for)

(b) (% in classification) x (% of Chugach total)

*Based on 1978 Form 12s

**Includes Industrial and Governmental

It follows from these assumptions that the load patterns for Chugach (load pattern A1) and Anchorage Municipal (load pattern A2) can be written as linear combinations of the underlying load patterns assumed to exist for Anchorage residential and commercial customers. Similarly, the load patterns for Golden Valley (load pattern F1) and Fairbanks Municipal (load pattern F2) can be written as linear combinations of the underlying load patterns assumed to exist for Fairbanks residential and commercial customers. Additionally, the load pattern associated with a different percentage of residential and commercial customers than currently exists can be found by taking the appropriate linear combination of the underlying load patterns for residential and commercial customers. Equivalently, linear combinations of patterns A1 and A2 (for Anchorage) or F1 and F2 (for Fairbanks) can be used. We have taken this latter approach since it is computationally simpler.

Total sales were allocated between patterns A1 and A2, for Anchorage and Glenallen-Valdez, and F1 and F2 for Fairbanks, in a manner that resulted in total load patterns that correspond to the mix of residential and commercial customers predicted by ISER. This was done by altering the percentage of total megawatt hours allocated to each pattern. For example, from Table 3.2.3, pattern A1 represents 57.1% residential customers and pattern A2 represents 25% residential customers. Thus the overall percentage of residential customers in the Anchorage area is:

$$\begin{aligned} &0.571 \times (\text{percent of total sales having load pattern A1}) + \\ &0.25 \times (\text{percent of total sales having load pattern A2}) = \\ &\quad \text{percent of total sales made to residential customers} \end{aligned}$$

Using this relationship and the fact that the percent of sales having load patterns A1 and A2 must sum to 100 (for the Anchorage area), the formula can be rearranged as:

percent of total sales having pattern A1 = $3.115 \times$ (percent of total sales to residential customers) - 77.88

percent of total sales having pattern A2 = $100 -$ (percent of total sales having pattern A1).

Thus, given an ISER forecast of percent residential customers for a given future year, a corresponding allocation to the A1 and A2 standard load patterns can be made using the equations in the last paragraph. Note that this is not a forecast of future sales by Chugach (for pattern A1) or Anchorage Municipal (for pattern A2), but only a forecast of changes in the overall load shape for that Anchorage Region. Using similar techniques, an analogous formula was developed for the Fairbanks area:

Percent of total sales having load pattern F1 = $4.425 \times$ (percent of total sales to residential customers) - 126.55.

Percent having load pattern F2 = $100 -$ (percent of total sales having load pattern F1).

Since the load at Glenallen-Valdez was assumed in our analysis to also be made up of a combination of patterns A1 and A2, the same allocation formula as for the Anchorage area was used. Of course, in this case the ISER forecasts of Glenallen-Valdez percentages of residential use were used. These formulas will result in accurate allocation of percentages of residential sales, however the ISER prediction of sales to the "other" category was about one percent, while historical sales to this category averaged about three percent. Thus, the percent of sales to "other" will tend to be overstated by about two percent in our projections compared to those of ISER with a corresponding reduction in the prediction for the commercial/industrial/governmental category.

Table 3.2.5 is a reproduction of the basic results of the ISER report. Tables 3.2.6, 3.2.7 and 3.2.8 show the allocation of the forecasted sales to the standard load patterns used in our study for each area as determined by the formula described above. Note that in some cases negative numbers appear. This is because the residential percentage goes outside the range of percentages spanned by the patterns being combined. However, the results of the allocation formulas are still valid in these cases.

In addition to the regional sales forecast by ISER, military and self-supplied industrial generation were included in the totals allocated to the standard load patterns. ISER reported current net military generation of 156×10^3 MWh for greater Anchorage and 178×10^3 MWh for greater Fairbanks. These hours were allocated to patterns A2 and F1 respectively, since both of the utilities whose data were used to generate these patterns have sold power to the military in the past. ISER also estimated self supplied industry generation of 414×10^3 , 571×10^3 and 847×10^3 to 981×10^3 MWh for the low, medium, and high cases respectively. This generation was allocated to pattern A2 since Anchorage Municipal, whose data were used to calculate pattern A2, has the highest percentage of commercial/industrial customers of the utilities studied.

3.2.3 Projecting Peak Loads

To project peak loads for the Railbelt area the total sales allocated to each standard load pattern (as shown in Tables 3.2.6, 3.2.7 and 3.2.8) were first adjusted to reflect losses and energy unaccounted for. Table 3.2.9 shows the average "energy unaccounted for" for the Railbelt utilities. The adjustment was made by increasing the total hours allocated to each utility by a factor equal to the average energy unaccounted for. These adjustments resulted in the estimates

TABLE 3.2.5 PROJECTED ELECTRIC UTILITY SALES AND MILITARY PLUS SELF-SUPPLIED INDUSTRIAL NET GENERATION

(10 ³ MWh)							
Year	Utility Sales				Total Utility Sales	Military Net Generation	Self-Supplied Industry Net Generation
	Anchorage	Fairbanks	Anchorage+ Fairbanks	Glenallen- Valdez			
1978	1,747	427	2,174	38	2,212	334	414
1980	1,907	446	2,353	37	2,390	334	414
1985							
L	2,249	619	2,868	53	2,921		414
M	2,438	669	3,107	64	3,171	334	571
H	2,676	769	3,445	116	3,561		847
M-E	2,438	669	3,107	64	3,171		571
1990							
L	2,510	666	3,176	60	3,236		414
M	2,782	742	3,524	75	3,599	334	571
H	3,249	914	4,163	119	4,282		981
M-E	2,782	742	3,524	75	3,599		571
1995							
L	3,097	813	3,910	66	3,976		414
M	3,564	949	4,513	88	4,601	334	571
H	4,438	1,227	5,665	124	5,789		981
M-E	3,564	949	4,513	104	4,617		571
2000							
L	3,981	1,040	5,021	80	5,101		414
M	4,451	1,177	5,628	102	5,730	334	571
H	5,519	1,537	7,056	136	7,192		981
M-E	4,973	1,416	6,389	136	6,525		571
2005							
L	4,375	1,154	5,529	88	5,617		414
M	5,226	1,397	6,623	119	6,742	334	571
H	7,013	1,988	9,001	176	9,177		981
M-E	6,220	1,834	8,054	165	8,219		571
2010							
L	4,807	1,277	6,084	95	6,179		414
M	6,141	1,671	7,812	140	7,952	334	571
H	8,927	2,586	11,513	223	11,736		981
M-E	7,624	2,318	9,942	200	10,142		571

L = Minimum economic growth
M = Likely economic growth
H = Maximum economic growth

M-E = Likely economic growth with shift to
electric space heat and appliances in
residential sector

Source: Electrical Consumption for the Railbelt (1).

TABLE 3.2.6 BREAKDOWN OF FORECASTED SALES
ANCHORAGE AREA

Year	% Sales to Residential (ISER Forecast)	Total Sales (Mwh x 10 ³) (ISER Forecast)	Sales Having Pattern A1*	Sales Having Pattern A2
1978	48.1	1747	1256	481
ISER LOW CASE				
1980	48.3	1907	1384	523
1985	49.5	2249	1716	533
1990	50.4	2510	1985	525
1995	48.7	3097	2286	811
2000	47.2	3981	2751	1230
2005	47.4	4375	3054	1321
2010	47.2	4807	3322	1485
ISER MEDIUM CASE				
1980	48.3	1907	1384	523
1985	48.2	2438	1760	678
1990	48.7	2782	2053	729
1995	47.1	3564	2452	1112
2000	46.9	4451	3036	1415
2005	46.2	5226	3749	1777
2010	45.2	6141	3863	2278
ISER HIGH CASE				
1980	48.3	1907	1384	523
1985	45.4	2676	1699	977
1990	46.0	3249	2125	1124
1995	44.2	4438	2654	1784
2000	44.8	5519	3405	2114
2005	43.3	7013	3997	3016
2010	41.9	8927	4696	4321

*Total sales having load pattern A1 =

$$\frac{(3.115 \times (\% \text{ total sales to residential}) - 77.88)}{100} \times \text{total sales}$$

TABLE 3.2.7 BREAKDOWN OF FORECASTED SALES
FAIRBANKS AREA

Year	% Sales to Residential (ISER Forecast)	Total Sales (Mwh x 10 ³) (ISER Forecast)	Sales Having Pattern F1*	Sales Having Pattern F2
1978	41.9	427	252	175
ISER LOW CASE				
1980	40.1	446	263	183
1985	36.2	619	209	410
1990	37.7	666	268	398
1995	35.7	813	256	557
2000	33.0	1040	203	837
2005	32.1	1154	179	975
2010	31.9	1277	188	1089
ISER MEDIUM CASE				
1980	41.9	446	263	183
1985	34.5	669	175	494
1990	35.6	742	230	512
1995	33.4	949	202	747
2000	31.7	1177	162	1015
2005	30.4	1397	112	1285
2010	29.5	1671	67	1604
ISER HIGH CASE				
1980	41.9	446	263	183
1985	32.2	769	123	646
1990	32.4	914	154	760
1995	30.2	1227	87	1140
2000	29.3	1537	49	1488
2005	27.7	1988	-78	2066
2010	26.5	2586	-238	2824

*Total sales having pattern F1 =

$$\frac{4.425 \times (\% \text{ total sales to residential}) - 126.55}{100} \times \text{total sales.}$$

TABLE 3.2.8 BREAKDOWN OF FORECASTED SALES
GLENALLEN-VALDEZ AREA*

Year	% Sales to Residential (ISER Forecast)	Total Sales (Mwh x 10 ³) (ISER Forecast)	Sales Having Pattern A1	Sales Having Pattern A2
1978	26.3	38	2	36
ISER LOW CASE				
1980	24.3	37	-1	38
1985	24.5	53	-1	54
1990	25.0	60	0	60
1995	27.3	66	5	61
2000	27.5	80	6	74
2005	29.5	88	12	76
2010	29.5	95	13	82
ISER MEDIUM CASE				
1980	24.3	37	-1	38
1985	21.9	64	-6	70
1990	24.0	75	-2	77
1995	26.1	88	3	85
2000	27.5	102	8	94
2005	27.7	119	10	109
2010	28.6	140	16	124
ISER HIGH CASE				
1980	24.3	37	-1	38
1985	15.5	116	-34	150
1990	19.3	119	-21	140
1995	22.6	124	-9	133
2000	24.3	136	-3	139
2005	24.4	176	-3	179
2010	23.8	223	-8	231

*Glenallen-Valdez load patterns assumed to correspond to patterns A1 and A2 using the equation in Table 3.2.6.

TABLE 3.2.9 AVERAGE PERCENT "ENERGY UNACCOUNTED FOR"* (1970-1979)

Utility	Average % Energy Unaccounted For**
Chugach	13.1
Homer	8.9
Matanuska	11.5
Seward	13.8
Average; Chugach supplied+	12.2
Anchorage Municipal	8.1
Golden Valley	10.0
Fairbanks Municipal	12.4
Copper Valley	13.8

*Source: FERC Power System Statements

+Weighted average of Chugach, Homer, Matanuska and Seward.

See Table 3.2.4

**Expressed as a percentage of net energy delivered.

of gross electrical generation in the Railbelt for each forecast year shown in Tables 3.2.10, 3.2.12 and 3.2.14.

The next step was to allocate the gross generation for each forecast year by month. This was done using the monthly percentages shown in Table 3.2.2 for each standard load pattern.

For the months April, August, and December, for which hourly curves were available for a one-week period, the monthly total generation was further allocated for each standard load pattern. It was assumed that each hourly observation on the weekly curve was repeated during each week in the month. For example in April, which has 30 days or 4.29 weeks, it was assumed that each observation represented 4.29 hours at a given generation level. The load at each observation was calculated as follows:

$$\text{Hourly Load} = \frac{\text{monthly total generation}}{\text{weeks in month}} \times \begin{matrix} \text{(standard hourly \%} \\ \text{of total week's} \\ \text{generation)} \end{matrix}$$

The standard hourly percent of the total week's generation is given by the "standard week" discussed earlier and shown in Appendix B.

Adding the total hourly load for the four standard load patterns gives the total load for the Railbelt for 24 hours for 7 days of the month. The largest load is the estimated peak load for the month. Next the load factor for the month is calculated as follows:

$$\text{Monthly Load Factor} = \frac{\text{Gross Monthly Generation}}{(\text{Monthly Peak}) \times (\text{Hours in Month})}$$

TABLE 3.2.10. YEARLY ESTIMATED PEAK LOADS (Total Railbelt Region)
ISER LOW FORECAST

YEAR	TOTAL GENERATION (MWhx1000)	PEAK LOAD (MW)	LOAD FACTOR (%)
1978*	3258	602	61.8
1980*	3467	641	61.7
1981	3587	664	61.7
1982	3706	686	61.7
1983	3826	709	61.6
1984	3945	731	61.6
1985*	4065	754	61.5
1986	4135	767	61.5
1987	4206	781	61.5
1988	4276	794	61.5
1989	4347	808	61.4
1990*	4417	821	61.4
1991	4575	851	61.4
1992	4733	882	61.3
1993	4890	912	61.2
1994	5048	943	61.1
1995*	5206	973	61.1
1996	5461	1019	61.2
1997	5717	1066	61.2
1998	5972	1112	61.3
1999	6228	1159	61.3
2000*	6483	1205	61.4
2001	6598	1227	61.4
2002	6714	1248	61.4
2003	6829	1270	61.4
2004	6945	1291	61.4
2005*	7060	1313	61.4
2006	7185	1336	61.4
2007	7310	1360	61.4
2008	7434	1383	61.4
2009	7559	1407	61.3
2010*	7684	1430	61.3

*Computed value. All others interpolated.

TABLE 3.2.11. YEARLY MONTH TO ANNUAL PEAK LOAD RATIOS (Total Railbelt Region)
ISER LOW FORECAST

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1978*	.918	.867	.788	.695	.630	.598	.595	.638	.690	.794	.927	1.0
1980*	.917	.867	.788	.695	.630	.598	.596	.638	.690	.794	.927	1.0
1981	.917	.867	.787	.695	.630	.600	.596	.636	.690	.794	.926	1.0
1982	.916	.867	.787	.695	.631	.602	.597	.636	.690	.793	.925	1.0
1983	.915	.866	.786	.695	.631	.603	.597	.637	.689	.793	.924	1.0
1984	.915	.866	.786	.695	.632	.605	.598	.638	.689	.792	.923	1.0
1985*	.915	.866	.785	.695	.632	.607	.597	.637	.689	.792	.922	1.0
1986	.915	.866	.785	.695	.632	.606	.597	.636	.688	.792	.923	1.0
1987	.915	.866	.785	.695	.631	.605	.596	.635	.687	.791	.923	1.0
1988	.915	.866	.785	.695	.631	.605	.596	.634	.687	.791	.922	1.0
1989	.915	.866	.785	.695	.630	.604	.596	.633	.686	.790	.922	1.0
1990*	.915	.866	.785	.695	.630	.603	.595	.632	.685	.790	.922	1.0
1991	.915	.866	.785	.695	.631	.604	.595	.633	.686	.790	.922	1.0
1992	.915	.866	.785	.695	.631	.605	.596	.634	.687	.790	.922	1.0
1993	.914	.865	.785	.695	.632	.607	.597	.635	.687	.791	.922	1.0
1994	.914	.865	.785	.695	.632	.608	.598	.636	.688	.791	.922	1.0
1995*	.914	.865	.785	.695	.633	.609	.599	.637	.689	.792	.922	1.0
1996	.914	.865	.785	.695	.634	.611	.600	.638	.690	.792	.922	1.0
1997	.914	.865	.785	.695	.634	.612	.601	.639	.691	.793	.922	1.0
1998	.914	.865	.784	.696	.635	.614	.602	.641	.692	.793	.922	1.0
1999	.914	.865	.784	.696	.636	.615	.603	.642	.693	.794	.922	1.0
2000*	.914	.865	.784	.696	.636	.617	.605	.644	.694	.794	.922	1.0
2001	.914	.865	.784	.696	.636	.617	.604	.643	.694	.794	.922	1.0
2002	.914	.865	.784	.696	.636	.618	.604	.643	.694	.794	.922	1.0
2003	.914	.864	.783	.696	.637	.618	.605	.643	.694	.793	.921	1.0
2004	.913	.864	.783	.696	.637	.619	.605	.643	.694	.793	.921	1.0
2005*	.913	.864	.783	.696	.637	.619	.605	.643	.694	.793	.921	1.0
2006	.913	.864	.783	.696	.637	.619	.605	.643	.694	.793	.921	1.0
2007	.913	.864	.783	.696	.637	.619	.605	.643	.694	.793	.921	1.0
2008	.913	.864	.783	.696	.637	.620	.606	.644	.695	.794	.921	1.0
2009	.913	.864	.783	.696	.637	.620	.606	.644	.695	.794	.921	1.0
2010*	.913	.864	.783	.696	.637	.620	.606	.644	.695	.794	.921	1.0

*Computed value. All others interpolated.

TABLE 3.2.12. YEARLY ESTIMATED PEAK LOADS (Total Railbelt Region)
ISER MEDIUM FORECAST

YEAR	TOTAL GENERATION (MWhx1000)	PEAK LOAD (MW)	LOAD FACTOR (%)
1978*	3258	604	61.6
1980*	3467	641	61.7
1981	3676	680	61.7
1982	3884	719	61.7
1983	4093	758	61.6
1984	4301	797	61.6
1985*	4510	836	61.6
1986	4605	854	61.6
1987	4701	872	61.5
1988	4796	889	61.6
1989	4892	907	61.6
1990*	4987	925	61.5
1991	5209	966	61.6
1992	5431	1007	61.6
1993	5653	1049	61.5
1994	5875	1090	61.5
1995*	6097	1131	61.5
1996	6348	1178	61.5
1997	6599	1225	61.5
1998	6851	1272	61.5
1999	7102	1319	61.5
2000*	7353	1366	61.4
2001	7577	1408	61.4
2002	7802	1450	61.4
2003	8026	1491	61.4
2004	8251	1533	61.4
2005*	8475	1575	61.4
2006	8743	1625	61.4
2007	9011	1675	61.4
2008	9278	1724	61.4
2009	9546	1774	61.4
2010*	9814	1824	61.4

*Computed value. All others interpolated.

TABLE 3.2.13. YEARLY MONTH TO ANNUAL PEAK LOAD RATIOS (Total Railbelt Region)
ISER MEDIUM FORECAST

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1978*	.918	.867	.788	.695	.630	.598	.595	.638	.690	.794	.927	1.0
1980*	.917	.867	.788	.695	.630	.597	.594	.637	.689	.794	.926	1.0
1981	.917	.867	.787	.695	.631	.600	.596	.639	.691	.795	.926	1.0
1982	.917	.867	.787	.695	.632	.604	.598	.641	.692	.795	.926	1.0
1983	.916	.866	.786	.696	.634	.607	.601	.643	.694	.796	.925	1.0
1984	.916	.866	.786	.696	.635	.611	.603	.645	.695	.796	.925	1.0
1985*	.916	.866	.785	.696	.636	.614	.605	.647	.697	.797	.925	1.0
1986	.916	.866	.785	.696	.636	.613	.604	.646	.696	.796	.925	1.0
1987	.916	.866	.785	.696	.635	.613	.604	.645	.695	.796	.925	1.0
1988	.915	.865	.785	.696	.635	.612	.603	.644	.695	.795	.924	1.0
1989	.915	.865	.785	.696	.634	.612	.603	.643	.694	.795	.924	1.0
1990	.915	.865	.785	.696	.634	.611	.602	.642	.693	.794	.924	1.0
1991	.915	.865	.785	.696	.634	.611	.603	.643	.694	.794	.924	1.0
1992	.915	.865	.785	.696	.634	.611	.604	.644	.695	.795	.924	1.0
1993	.915	.865	.784	.696	.634	.611	.604	.645	.695	.795	.924	1.0
1994	.915	.865	.784	.696	.634	.611	.605	.646	.696	.796	.924	1.0
1995*	.915	.865	.784	.696	.634	.611	.606	.647	.697	.796	.924	1.0
1996	.915	.865	.784	.696	.635	.613	.606	.647	.697	.796	.924	1.0
1997	.915	.865	.784	.696	.636	.615	.607	.647	.697	.796	.923	1.0
1998	.914	.864	.783	.696	.637	.617	.607	.648	.698	.796	.923	1.0
1999	.914	.864	.783	.696	.638	.629	.608	.648	.698	.796	.922	1.0
2000*	.914	.864	.783	.696	.639	.621	.608	.648	.698	.796	.922	1.0
2001	.914	.864	.783	.696	.639	.622	.609	.649	.698	.796	.922	1.0
2002	.914	.864	.783	.696	.639	.623	.609	.649	.699	.795	.922	1.0
2003	.914	.864	.782	.696	.639	.623	.610	.650	.699	.795	.922	1.0
2004	.914	.864	.782	.696	.640	.624	.610	.650	.700	.796	.922	1.0
2005*	.914	.864	.783	.696	.640	.625	.611	.651	.700	.797	.922	1.0
2006	.914	.864	.782	.696	.640	.626	.612	.652	.701	.796	.922	1.0
2007	.914	.864	.782	.696	.640	.627	.612	.653	.701	.796	.922	1.0
2008	.914	.864	.782	.697	.641	.628	.613	.653	.702	.797	.923	1.0
2009	.914	.864	.782	.697	.641	.629	.613	.654	.702	.797	.923	1.0
2010	.914	.864	.782	.697	.641	.630	.614	.655	.703	.798	.923	1.0

*Computed value. All others interpolated.

TABLE 3.2.14. YEARLY ESTIMATED PEAK LOADS (Total Railbelt Region)
ISER HIGH FORECAST

YEAR	TOTAL GENERATION (MWhx1000)	PEAK LOAD (MW)	LOAD FACTOR (%)
1978*	3258	602	61.8
1980*	3467	641	61.7
1981	3821	706	61.8
1982	4175	771	61.8
1983	4528	836	61.8
1984	4882	901	61.9
1985*	5236	966	61.9
1986	5425	1001	61.9
1987	5615	1037	61.8
1988	5804	1072	61.8
1989	5994	1108	61.8
1990*	6183	1143	61.8
1991	6516	1205	61.7
1992	6849	1267	61.7
1993	7183	1328	61.7
1994	7516	1390	61.7
1995*	7849	1452	61.7
1996	8162	1511	61.7
1997	8474	1569	61.7
1998	8787	1628	61.6
1999	9099	1686	61.6
2000*	9412	1745	61.6
2001	9851	1826	61.6
2002	10290	1907	61.6
2003	10729	1989	61.6
2004	11168	2070	61.6
2005*	11607	2151	61.6
2006	12172	2256	61.6
2007	12738	2361	61.6
2008	13303	2465	61.6
2009	13869	2570	61.6
2010*	14434	2675	61.6

*Computed value. All others interpolated.

TABLE 3.2.15. YEARLY MONTH TO ANNUAL PEAK LOAD RATIOS (Total Railbelt Region)
ISER HIGH FORECAST

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1978*	.918	.867	.788	.695	.630	.598	.595	.638	.690	.794	.927	1.0
1980*	.918	.867	.788	.695	.630	.597	.594	.637	.689	.794	.926	1.0
1981	.918	.867	.788	.696	.633	.603	.598	.642	.693	.796	.927	1.0
1982	.918	.867	.788	.697	.636	.609	.603	.647	.697	.798	.927	1.0
1983	.918	.867	.787	.698	.638	.614	.607	.653	.702	.801	.928	1.0
1984	.918	.867	.787	.699	.641	.620	.612	.658	.706	.803	.928	1.0
1985*	.918	.867	.787	.700	.644	.626	.616	.663	.710	.805	.929	1.0
1986	.918	.867	.787	.699	.643	.626	.616	.662	.710	.805	.929	1.0
1987	.917	.866	.787	.699	.643	.625	.615	.662	.709	.805	.928	1.0
1988	.917	.866	.786	.698	.642	.625	.615	.661	.709	.804	.928	1.0
1989	.916	.865	.786	.698	.642	.624	.614	.661	.708	.804	.927	1.0
1990*	.916	.865	.786	.697	.641	.624	.614	.660	.708	.803	.927	1.0
1991	.916	.865	.786	.698	.642	.625	.615	.661	.709	.803	.927	1.0
1992	.916	.865	.786	.698	.643	.627	.616	.662	.709	.803	.927	1.0
1993	.916	.866	.786	.699	.643	.628	.616	.662	.710	.803	.927	1.0
1994	.916	.866	.786	.699	.645	.630	.617	.663	.710	.804	.927	1.0
1995*	.916	.866	.786	.700	.645	.631	.618	.664	.711	.804	.927	1.0
1996	.916	.866	.785	.700	.645	.631	.618	.663	.711	.804	.927	1.0
1997	.916	.865	.785	.699	.645	.631	.618	.663	.710	.803	.926	1.0
1998	.915	.865	.784	.699	.644	.632	.617	.662	.710	.803	.926	1.0
1999	.915	.864	.784	.698	.644	.632	.617	.662	.709	.802	.925	1.0
2000*	.915	.864	.783	.698	.644	.632	.617	.661	.709	.802	.925	1.0
2001	.915	.864	.783	.699	.645	.633	.618	.662	.710	.802	.925	1.0
2002	.915	.865	.784	.699	.646	.635	.619	.663	.711	.803	.925	1.0
2003	.916	.865	.784	.700	.646	.636	.620	.664	.711	.803	.925	1.0
2004	.916	.866	.785	.700	.647	.638	.621	.665	.712	.804	.925	1.0
2005*	.916	.866	.785	.701	.648	.639	.622	.666	.713	.804	.925	1.0
2006	.916	.866	.785	.702	.649	.641	.623	.667	.714	.804	.925	1.0
2007	.916	.867	.785	.703	.650	.642	.624	.668	.715	.805	.925	1.0
2008	.917	.867	.786	.703	.651	.644	.625	.670	.716	.805	.925	1.0
2009	.917	.868	.786	.704	.652	.695	.626	.671	.717	.806	.926	1.0
2010*	.917	.868	.787	.705	.653	.647	.627	.672	.718	.806	.926	1.0

*Computed values. All others interpolated.

Load factors for the other months were then calculated by doing a linear interpolation from the three available months. For example,

$$\text{January Load Factor} = \frac{3}{4} (\text{December load factor}) + \frac{1}{4} (\text{April load factor})$$

Monthly peak loads were then estimated using the calculated monthly load factors and the monthly gross generation as follows:

$$\text{Monthly Peak} = \frac{\text{Gross Monthly Generation}}{(\text{Monthly Load Factor}) \times (\text{Hours in Month})}$$

The largest of the monthly peaks is the yearly peak and allows calculation of the monthly to annual peak load ratios. Tables 3.2.10, 3.2.12. and 3.2.14 show the estimated total generation, peak loads and load factor for the three main ISER cases. Tables 3.2.11., 3.2.13 and 3.2.15 show the corresponding monthly to annual peak load ratios. The results for intermediate years where no ISER forecasts were given were computed using linear interpolation.

3.2.4 Estimation of Average Weekend, Weekday and Monthly Load Duration Curves

Average weekend and weekday load duration curves and the 0%, 20%, 40% and 100% points on the monthly load duration curves were computed for every 10 years for ISER's three main forecasts. The starting point for these calculations was the three weeks of hourly load data computed for the total Railbelt for each forecast year. For each week the five week days and two weekend days were averaged and then sorted and normalized by dividing by the largest weekday value to give average weekday and weekend day load duration curves for April, August and

December. Similarly, the total week's observations were sorted and normalized. Since each week has $7 \times 24 = 168$ observations, observations 1, 34, 67 and 168 represent the 0%, 20%, 40% and 100% points on the monthly load duration curve.

Intermediate months were generated using the linear interpolation formula described above. The results are shown in Appendix C.

STRENGTHS AND LIMITATIONS OF FORECAST PROCEDURE

This section compares the results of our study with historical data and with other recent peak load forecasts. Recommendations for future work are also given.

4.1 COMPARISON WITH HISTORICAL RESULTS

As noted earlier the load factors estimated in this study are generally higher than those reported by the utilities in their Power System Statements. The reported load factors are shown in Table 4.1.1. The comparable estimated load factors computed from the standard load curves calculated during our study are:

	A1 <u>(Chugach)</u>	A2 <u>(Anchorage Municipal)</u>	F1 <u>(Golden Valley)</u>	F2 <u>(Fairbanks Municipal)</u>
Average Load Factor				
(1970-1979)	53.9	60.5	48.4	52.6
Estimated	59.5	63.6	61.6	59.1

The large difference between the estimated and actual load factor for Golden Valley (pattern F1) appears to be due to large variations in total electrical use which occurs in the month of December, the

TABLE 4.1.1. LOAD FACTORS FOR RAILBELT UTILITIES

	<u>Chugach</u>	<u>Anchorage Municipal</u>	<u>Golden Valley</u>	<u>Fairbanks Municipal</u>
1970	51.3	62.2	46.3	48.7
1971	54.8	57.9	48.1	41.6
1972	55.5	59.5	52.9	54.2
1973	56.4	62.1	48.3	54.7
1974	54.3	60.3	44.1	52.4
1975	49.2	55.7	45.8	49.2
1976	57.2	60.9	50.7	56.3
1977	51.5	60.2	44.8	53.1
1978	54.3	63.4	54.4	59.1
1979	<u>54.3</u>	<u>62.9</u>	-	<u>56.3</u>
Average	53.9	60.5	48.4	52.6

Source: FERC Form 12s.

month when Golden Valley's peak generally occurs. The full range of variation generally does not occur during the first week of the month, the week which is reported in the Power System Statements. This is true to a lesser extent for the other Railbelt utilities.

An overall load factor for the Railbelt can be estimated by an average of the individual utilities' load factors weighted by total generation. In 1978, generation for the four major utilities was Chugach - 1,351,606 Mwh; Anchorage Municipal - 550,157 Mwh, Golden Valley - 341,504 Mwh, and Fairbanks Municipal - 124,742 Mwh. The overall Railbelt load factor computed using these totals as weights is 54.6 percent. Applying the same approach to the load factors computed in our study results in an overall load factor of 60.7 percent.

The overall load factor computed by the method described in Section 3.2 was 62.6 percent. This computation assumes that the Railbelt utilities are completely intertied, so that hourly loads for each utility can be added directly. The resulting increase over the value shown above for the non-intertied case is $62.6 - 60.7 = 1.9$ percent. The percentage increase is $1.9/60.7 = 3.1$ percent. This indicates that the actual load factor for an intertied Railbelt would be $54.6 \times 1.031 = 56.3$ percent if a correction is made for the somewhat high load factors projected in our study. Table 4.1.2 shows the results of using this load factor with the total generation estimates (including energy unaccounted for) prepared using ISER's forecasts. This table shows an increase in peak load using the modified load factor of about 11 percent over the estimate used in our study. The highest peak shown goes from 2683 to 2987 Mw for the high forecast for 2010.

TABLE 4.1.2. LOAD FACTOR SENSITIVITY ANALYSIS

Year	Total Generation (MWh x 10 ³) (ISER Forecast)	Nominal Peak* (62.6% Load Factor) (MW)	Sensitivity Case** (56.3% Load Factor) (MW)
1978	3323	606	674
ISER LOW FORECAST			
1980	3522	643	714
1990	4503	824	913
2000	6599	1210	1338
2010	7822	1435	1586
ISER MEDIUM FORECAST			
1980	3522	643	714
1990	4922	898	998
2000	7327	1341	1486
2010	9838	1800	1995
ISER HIGH FORECAST			
1980	4135	753	838
1990	6336	1146	1285
2000	9598	1750	1946
2010	14730	2683	2987

* As projected in our study

** As modified to account for possible overestimate of load factor in our study.

4.2. COMPARISON WITH OTHER ESTIMATES

In its report ISER reviewed many of the forecasts of electrical demand that have been prepared in recent years. Two general comments can be made. First the estimates tend to be much higher than those prepared by ISER/WCC. However, estimates made more recently tend to be closer to the ISER/WCC projections. Table 4.2.1 summarizes some of the recent estimates of peak load for the Railbelt and compares them with the ISER/WCC forecasts. Most previous estimates are higher than even the sensitivity analysis cases in this study. This is largely due to the lower estimates of total sales provided by ISER. Another contributing factor is that many previous studies assumed load factors of around 50 percent, while our study indicates a range of from 54 to 62 percent.

4.3 POSSIBLE FUTURE WORK

The work presented in this report represents the first attempt that we are aware of to develop load duration curves for the Railbelt region as a whole. There are many possibilities that could be investigated to improve the quality and reliability of the forecasts.

The most significant limitation of the current work is the data base used. The use of the Power System Statement data, which was at most one week per month of hourly data, may have created errors in forecasting monthly load factors and load duration curves. To correct these problems, continuous hourly data for entire months will be needed. Note that it is much more important to get monthly data for certain months than to get weekly data for more months of the year. The most useful single month would be December, since this is when yearly peak loads occur.

Table 4.2.1. SUMMARY OF PEAK LOAD FORECASTS⁺ (MW)

Forecast**	1980	1985	1990	1995	2000	2010	2025
I.L.*	643		824		1210	1435	
S.L.*	714		913		1338	1586	
I.M.*	643		898		1341	1800	
S.M	714		998		1486	1995	
A.L.*	667				1617		
I.H.*	753		1146		1750	2683	
E.L	774		1192		1807		2198
D.L		844		1847			
S.H	838		1285		1946	2987	
C.L	790		1390		2050		
B.L	900		1530		2320		
E.M	836		1616		2908		
A.H	1617				3087		
C.M	870		1670		3170		
F.L	744		1642		3203		
B.M	1070		2000		3950		
F.M	749		1896		4054		
E.H	897		2431		4781		
F.H	754		2150		4905		
C.H	990		4950		7250		
B.M	1320		5780		8580		

Forecast Identification:

+ - Sorted by Peak for the year 2000

**Each reference is followed by L, M, or H for Low, Medium, or High case.

* - ISER/WCC Nominal Forecast

A - Supplemental Feasibility Report: Hydroelectric Power and Related Purposes. U.S. Army Corps of Engineers. Anchorage, 1979

B - 1974 Alaska Power Survey. Alaska Power Administration. U.S. Dept. of Interior, 1974

C - Southcentral Railbelt Area, Alaska: Interim Feasibility Report: Hydroelectric Power and Related Purposes. U.S. Army Corps of Engineers. Anchorage, 1975

D - "Alaska Electric Power Requirements." Alaska Review of Business and Economic Research. University of Alaska, 1976

E - Upper Susitna Power Maricet Analysis U.S. Dept of Energy. Alaska Power Administration, 1979

F - Anchorage Fairbanks Transmission Intertie - Economic Feasibility Study Report. Alaska Power Authority, 1979

I - ISER/WCC Nominal Forecast

S - ISER/WCC Sensitivity Analysis Case (see Table 4.1.2)

If possible, an ongoing data collection program should be worked out with each of the four major utilities in the Railbelt to obtain hourly data for one or more months during the year. Efforts should be made to ensure that the data are comparable between utilities.

Another improvement that could be made to the load curve forecasts would be to incorporate the influence of weather. Temperature records for the Anchorage and Fairbanks areas are available. If weather data is compiled for those periods when hourly load data is available, regression or similar techniques could be used to identify the fraction of the load that is sensitive to weather. Historical loads curves could then be adjusted to represent the patterns that would be seen under average weather conditions. In addition, probabilistic analysis could be used to identify the range of variation in the nominal curves that could be expected due to weather effects.

Another adjustment that could be made would be to account for the effects of differing growth rates from year to year. The percentage of yearly sales used in a given month will depend on the growth that is occurring. In periods of high growth more power will be used in the later months of the year than in the first months simply because growth has occurred. This is not a problem if the growth rate does not change over the years. However, some inaccuracies result in combining curves from different years if the growth rate does change. The simplest way to account for this would be to reduce each month's total use by a factor corresponding to growth which would have occurred since the beginning of the year. This adjusted information can be considered a "no-growth" yearly pattern. In generating a forecast pattern, the yearly growth rate can be used to superimpose a monthly growth rate over the nominal no-growth pattern.

The approaches described above all represent methods for load curve estimation based on use of a pre-existing forecast of total electric energy demand and historical records of load patterns. The state-of-the-art approach to this problem uses completely different techniques based on econometric end use analysis. This approach was mentioned in Section 3.1 and is described in more detail in Gorzelnik.⁵ Implementing this approach would require a substantial commitment of resources on the part of the agencies, utilities, and consultants involved and would require a large data gathering effort. Special meters may be required to identify load shapes for various categories of users and appliances in Alaska. Once this information is available, it may be possible to use the detailed forecasts from ISER's MAP model in conjunction with a set of standard load curves to simultaneously forecast peak and total energy demand shapes as well as load duration curves. Such an approach would take substantial time to implement and would require several years of data before it could be completely calibrated. However, such a model is the only existing way to analyze the effects of various non-generation strategies in a manner that is fully integrated with the rest of the modeling effort.

REFERENCES

- (1) Electrical Consumption for the Railbelt: A Projection of Requirements. Institute of Social and Economic Research. University of Alaska. 1980.
- (2) Review of The University of Alaska Institute of Social and Economic Research Report "Electrical Consumption for the Railbelt: A Projection of Requirements." Woodward-Clyde Consultants, San Francisco. 1980.
- (3) Procedure for Independent Analysis of Electric Energy and Peak Loads by State Agencies. Charles River Associates, Inc. Boston 1978 (Volume II).
- (4) How Electric Utilities Forecast: EPRI Symposium Proceedings. Electric Power Research Institute, Palo Alto. 1979. (EPRI EA-1035-SR).
- (5) Gorzelnik, E.F. "Load Shape Development Aids Planning". Electrical World. Dec. 15, 1979.

APPENDIX A. HOURLY ELECTRICAL LOAD DATA

The following pages represent the raw information supplied by the major Railbelt utilities on their FERC Power System Statements.

The first line of each block of figures identifies the year, the month (4, 8 or 12) and the utility company, where:

- 1 = Chugach
- 2 = Anchorage Municipal
- 3 = Golden Valley
- 4 = Fairbanks Municipal

The last number identifies the size of the numbers to follow for the computer program and is not relevant to understanding the data. Thus the first line, "1978 04 1 1" indicates that the numbers to follow represent the first week in April 1978 for Chugach.

The next 24 lines represent the hourly peak loads for the seven days of the week, midnight-1 to 11-midnight down and Sunday to Saturday across. The figures are in MW or KW depending on the year. FERC changed the requirements from KW to MW in 1974 although not all utilities complied.

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1978 04 1 1

131.9	129.1	122.8	125.3	117.8	122.6	123.3
127.3	127.5	123.0	120.7	117.7	115.3	117.3
127.0	126.9	122.3	119.8	115.3	116.3	114.1
130.1	129.3	123.6	121.9	113.9	116.9	113.1
127.4	132.3	125.2	125.1	118.6	118.5	111.3
122.3	147.3	134.3	133.8	126.1	127.9	112.0
131.3	159.0	160.7	161.1	162.4	157.1	120.3
140.5	172.7	162.9	164.2	167.1	169.9	136.4
154.5	177.8	171.4	167.3	171.4	169.5	155.1
158.8	176.1	168.0	166.4	171.8	169.5	164.6
160.2	174.6	161.7	163.4	167.4	166.0	163.9
158.0	168.2	156.9	158.7	163.4	161.2	162.1
155.2	163.8	153.6	155.9	159.4	158.7	156.7
146.3	160.6	150.8	150.8	157.7	155.2	151.9
144.1	156.5	151.7	149.5	155.0	156.5	149.3
143.1	159.4	151.3	151.4	159.4	159.0	152.0
148.8	169.3	159.7	154.1	164.0	163.9	156.8
153.0	179.6	165.1	163.2	170.6	168.8	162.3
171.1	189.1	179.4	174.2	180.6	175.3	167.4
181.3	190.6	167.5	182.0	186.3	178.2	168.4
178.2	185.1	178.4	177.1	180.3	168.6	162.3
169.1	170.7	166.2	164.8	166.1	157.1	153.1
151.7	153.6	146.8	144.6	145.9	144.7	141.9
134.0	134.6	130.6	127.2	129.9	130.8	129.0

1978 08 1 1

99.4	92.0	93.1	92.3	91.8	94.6	95.2
91.7	83.6	86.3	85.7	86.8	87.3	88.9
88.2	81.5	82.6	82.2	84.6	84.6	83.5
85.6	81.0	82.4	82.4	82.9	83.2	83.4
81.8	77.5	79.6	79.7	82.3	80.0	81.0
79.6	85.3	83.2	85.3	87.0	86.7	82.1
84.3	105.9	104.0	104.6	106.6	105.3	98.0
91.9	119.1	119.3	120.6	123.1	122.6	102.8
106.4	124.5	131.1	124.7	127.7	128.2	122.0
115.9	131.2	130.7	132.3	136.3	135.6	137.6
128.1	140.4	132.2	137.2	137.4	138.8	145.8
127.5	135.5	133.5	135.7	135.1	135.9	147.9
127.4	133.0	133.5	133.2	134.4	133.1	143.3
122.2	131.6	127.1	131.7	129.6	128.7	138.7
117.9	125.9	130.1	130.5	127.9	127.5	134.2
116.0	129.0	133.4	129.1	127.8	126.3	131.0
116.4	134.0	140.6	138.6	134.7	132.0	133.5
116.4	137.4	144.9	141.2	137.8	135.7	135.6
115.7	137.5	142.9	141.0	134.7	133.7	133.9
116.4	133.9	139.9	135.7	130.2	131.3	132.3
119.1	131.7	136.8	134.3	129.9	130.4	131.2
130.8	136.7	135.9	136.8	137.1	133.4	131.8
122.4	121.7	124.2	123.3	124.9	124.5	122.5
104.8	103.8	104.2	103.2	124.6	105.4	108.1

1978 12 1 1

150.7	162.0	151.4	152.0	143.4	140.0	147.6
144.0	156.5	146.0	148.1	138.5	135.3	139.5
138.9	154.4	144.4	143.5	136.6	133.4	136.9
136.3	155.5	143.6	144.3	137.7	130.9	135.8
137.5	156.9	146.7	146.2	138.6	134.7	139.7
143.3	175.7	164.6	162.1	157.0	150.4	140.8
143.9	207.6	197.6	200.6	190.0	183.9	149.4

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161.5	219.2	208.2	204.1	200.4	198.9	167.0
177.9	216.2	207.5	203.8	195.9	198.1	164.9
190.9	218.6	207.7	205.2	196.6	197.1	167.0
200.8	217.1	207.0	203.5	194.9	196.1	199.8
203.0	214.2	205.6	202.8	193.7	194.3	199.2
204.7	211.2	205.7	200.3	191.3	193.2	201.2
204.0	208.8	205.7	201.6	188.2	192.8	198.2
209.8	215.1	212.6	206.8	191.7	199.4	202.5
226.8	229.3	227.2	219.6	209.7	212.7	208.4
232.7	231.5	231.8	227.3	218.3	217.5	223.5
229.5	236.7	235.2	227.3	222.9	217.7	220.5
227.6	234.0	233.8	225.3	218.4	214.3	215.0
223.2	224.3	228.1	217.6	211.8	203.1	206.1
213.7	216.7	217.6	209.4	203.1	195.0	196.6
206.4	200.8	202.7	194.4	190.5	185.8	187.1
187.3	180.3	183.5	174.0	170.2	176.1	176.9
170.2	162.0	163.5	156.4	152.1	157.3	163.4
1977 04 1 1						
112.4	107.9	110.0	110.9	113.1	106.5	105.5
110.5	107.5	106.3	107.9	108.3	104.6	104.6
104.9	103.9	103.9	106.4	105.7	103.7	103.4
105.1	104.3	108.2	106.9	105.6	106.1	102.6
105.2	105.9	106.1	107.8	106.3	102.1	101.2
100.3	113.0	114.0	128.6	114.2	110.4	99.8
105.0	134.4	132.3	130.9	135.7	123.8	110.0
117.5	145.0	149.0	147.3	144.3	135.4	125.1
131.4	148.9	144.2	149.5	146.8	146.1	141.0
142.9	148.6	143.8	148.4	144.1	148.5	150.7
146.3	147.0	141.5	145.0	142.5	147.3	153.7
149.1	143.6	138.1	142.1	139.0	145.0	152.0
149.0	140.6	135.4	137.5	134.2	139.5	149.6
146.4	138.3	135.1	135.9	131.5	136.1	143.6
145.5	138.4	133.1	135.6	130.0	136.2	143.5
146.5	144.3	134.7	138.5	131.7	137.6	143.7
150.7	149.5	138.6	146.6	133.8	140.7	147.9
156.2	156.8	144.7	150.3	139.7	146.7	150.9
164.3	166.1	155.8	159.0	149.4	153.5	154.1
159.8	168.3	163.2	163.1	156.2	155.3	159.6
154.9	161.7	159.5	160.2	151.3	147.7	153.6
145.3	149.5	147.0	147.1	143.0	140.6	144.4
130.2	130.9	130.5	127.5	127.6	126.9	133.1
117.6	116.6	119.2	117.1	114.3	116.7	120.3
1977 08 1 1						
86.6	81.8	84.0	84.6	83.9	86.1	83.0
79.7	76.7	79.0	78.4	79.2	80.2	82.6
78.6	74.9	76.4	76.8	75.2	79.0	80.0
77.8	75.8	75.5	75.2	76.1	78.6	80.2
75.1	74.2	75.2	75.3	71.0	75.8	79.7
71.2	79.3	80.3	79.4	79.8	81.8	76.4
74.2	96.5	93.7	95.9	96.8	97.7	81.2
83.3	108.3	103.5	109.4	109.6	108.4	83.6
96.8	119.1	116.6	118.2	115.5	121.4	107.9
110.6	125.2	123.4	122.6	123.3	125.1	123.7
116.3	129.8	128.6	126.7	125.4	129.5	128.5
119.2	128.4	125.3	126.3	124.9	128.4	126.4
119.6	120.4	127.2	123.8	124.7	126.4	120.4
117.4	122.0	124.4	119.0	119.3	122.1	119.4
116.2	125.9	123.4	119.0	118.1	123.2	113.7

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115.1	124.4	122.7	118.3	117.6	121.2	112.5
119.5	125.7	124.2	120.9	119.9	122.9	113.7
119.9	127.9	123.8	122.4	121.2	125.7	114.8
120.8	127.5	126.7	122.5	120.9	127.9	115.4
119.0	124.9	124.8	117.9	119.1	123.3	111.4
119.6	123.9	122.3	113.5	118.0	122.4	112.1
118.3	126.5	124.4	122.2	122.4	117.8	115.9
106.9	111.6	112.4	111.5	113.7	110.8	108.6
92.9	93.0	94.5	91.7	95.4	97.3	96.9
1977	12	1	1			
194.9	201.9	204.7	204.3	207.7	207.6	206.6
184.7	196.5	199.6	198.5	203.4	202.6	205.0
194.7	195.5	197.4	198.8	201.9	201.3	202.6
185.2	195.3	199.3	196.2	201.5	201.5	199.8
185.5	197.5	200.0	198.9	204.2	204.8	199.9
187.3	214.5	214.1	213.3	219.2	214.5	202.7
193.0	239.1	243.0	244.3	244.5	246.0	208.8
203.5	253.9	250.7	252.0	255.5	253.9	225.7
217.8	251.1	246.4	244.8	251.5	250.0	238.7
231.9	247.7	243.6	242.6	250.3	248.5	251.3
236.5	244.5	233.0	239.2	246.9	244.6	254.3
239.2	240.7	234.1	234.7	240.7	241.6	252.0
236.7	234.1	229.7	231.5	234.6	237.5	246.6
235.7	233.5	228.5	230.8	235.2	237.1	243.8
243.1	242.7	234.4	237.1	241.8	241.6	247.7
258.1	257.8	252.0	256.3	258.6	255.7	262.1
262.7	267.4	262.7	264.8	263.3	265.3	269.0
262.0	273.9	266.8	269.4	270.5	270.2	270.8
254.3	272.5	267.5	269.5	270.4	265.9	265.3
256.0	265.5	258.3	263.4	264.5	258.8	255.7
250.1	258.3	253.4	258.9	257.3	252.4	250.0
240.0	247.4	243.2	250.2	245.4	245.5	240.7
226.9	229.0	226.1	233.7	232.8	233.9	229.7
214.4	214.9	213.0	218.3	218.2	222.8	220.7
1976	04	1	1			
102.3	97.8	101.7	104.7	99.7	97.3	100.2
98.2	95.1	100.2	101.2	96.2	94.6	96.6
92.3	93.9	100.0	100.0	95.2	93.2	95.2
96.0	93.3	100.2	101.1	94.8	93.6	93.2
93.4	95.7	100.5	99.3	96.9	92.8	92.2
90.9	105.0	109.8	107.5	102.9	101.7	91.3
94.6	123.2	125.9	124.9	117.1	117.8	100.7
103.7	129.5	129.0	129.3	131.4	124.8	113.4
108.5	130.1	129.5	132.7	132.8	129.5	124.8
119.4	130.7	129.0	131.2	133.3	129.4	133.6
120.9	141.8	125.7	129.3	130.6	128.5	135.9
123.4	128.2	122.0	126.3	128.4	124.2	133.6
121.0	124.4	119.4	124.9	125.3	120.0	130.3
117.8	122.3	117.1	125.2	127.2	119.1	128.3
117.2	121.4	117.3	125.9	125.2	122.9	127.1
116.0	120.7	118.9	129.6	127.0	124.9	127.8
122.2	127.2	125.7	136.0	130.8	131.6	131.1
123.0	134.2	129.9	142.2	137.3	135.5	134.6
135.6	141.9	137.7	146.0	143.8	139.3	136.2
140.8	148.4	146.7	148.2	146.9	141.1	141.6
137.0	145.7	142.7	145.5	143.5	136.5	135.9
130.7	136.9	134.8	133.0	132.9	126.1	127.8
113.7	121.3	119.9	118.1	118.5	116.4	118.1

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105.1	108.1	105.5	107.5	104.9	106.0	106.9
1976	08	1	1			
78.3	74.4	76.7	78.2	78.1	74.5	78.5
72.4	67.7	70.3	68.4	70.2	68.3	73.4
68.7	65.4	68.4	66.3	67.5	68.9	67.5
65.7	65.1	67.8	65.5	68.4	66.3	66.0
62.4	61.6	63.8	61.9	63.8	63.9	64.8
62.4	70.0	72.2	68.2	67.8	68.2	64.9
63.8	84.2	83.2	82.9	82.5	81.9	71.4
70.4	98.9	98.7	94.3	92.0	97.5	82.6
81.8	104.6	106.4	101.2	100.5	104.7	97.2
81.3	112.8	113.1	111.8	107.0	113.4	108.1
86.8	119.4	116.0	113.4	116.4	112.5	114.4
102.3	113.0	113.9	112.4	113.8	112.4	115.8
103.3	117.1	112.5	110.0	111.2	112.7	113.5
97.3	115.0	110.1	107.9	110.4	117.5	108.4
95.2	113.0	106.5	106.1	106.8	115.3	109.4
94.7	112.9	108.1	108.0	110.0	113.6	107.5
95.9	111.6	106.3	107.3	112.3	111.8	109.2
99.9	113.3	110.5	108.0	110.5	112.3	107.0
101.3	112.6	109.8	106.6	113.0	110.4	107.4
101.8	108.8	104.0	106.2	107.1	106.2	105.5
105.4	107.2	105.1	99.7	108.2	107.6	103.0
105.4	108.3	106.8	105.7	109.9	111.0	107.1
99.5	104.4	100.5	102.2	101.2	102.4	102.6
85.4	87.7	84.2	85.2	79.1	89.4	89.8
1976	12	1	1			
127.6	133.4	120.8	137.5	158.2	146.3	145.2
122.0	115.9	115.9	134.8	154.3	132.9	135.6
119.2	112.4	113.9	135.1	150.3	138.2	135.2
113.3	111.7	113.6	132.3	145.8	137.8	132.4
117.4	113.7	116.6	136.6	152.4	141.1	131.3
119.9	126.6	128.5	150.9	165.4	154.9	132.9
123.6	152.4	153.3	177.4	198.4	177.7	142.0
132.3	162.3	168.4	192.2	196.4	187.2	150.7
147.2	163.8	166.3	186.2	193.8	187.6	163.9
156.9	163.8	168.4	188.9	193.1	185.1	174.6
164.2	164.2	169.1	186.0	191.8	185.4	177.2
169.2	162.1	168.2	181.6	188.1	184.0	175.2
170.4	160.3	169.0	183.0	186.9	181.1	172.0
163.8	160.4	167.2	186.3	185.0	177.1	169.0
174.9	175.9	174.9	186.7	189.3	187.0	174.6
184.2	180.1	189.9	204.7	202.0	190.1	180.5
186.8	187.1	197.5	213.0	209.8	192.1	186.5
187.2	187.9	199.2	217.4	211.9	194.4	186.3
182.6	186.6	199.0	217.6	207.9	198.2	178.6
176.8	179.0	191.8	209.2	204.6	189.0	169.3
159.1	170.9	189.5	205.1	197.8	176.2	161.2
159.2	159.2	177.4	196.8	188.6	176.4	152.9
145.6	144.6	161.1	184.0	168.9	166.5	146.3
131.8	130.0	146.7	167.0	162.6	151.6	134.6
1975	04	1	1			
83.0	74.5	78.1	75.8	76.8	77.4	78.2
78.9	72.3	75.3	75.9	73.6	74.6	73.6
76.1	70.3	73.9	74.4	72.1	72.3	70.3
75.5	71.6	73.2	72.9	71.8	72.5	71.3
74.1	74.0	75.6	75.8	73.8	74.4	72.7
76.3	81.4	83.3	82.8	80.3	80.5	73.4

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75.8	98.7	78.1	97.2	97.5	97.3	77.2
32.0	105.3	108.0	105.3	106.4	104.5	88.8
93.2	107.3	109.8	109.3	108.7	106.9	102.0
98.6	107.9	110.5	109.8	110.6	102.7	110.8
101.9	105.1	111.2	109.2	111.0	104.2	113.3
101.4	102.9	109.3	102.4	106.1	102.2	112.0
100.0	95.4	108.4	102.4	105.7	98.6	108.6
97.0	96.4	105.9	103.8	104.4	95.1	105.7
95.2	96.6	107.2	103.9	103.2	90.4	102.7
94.6	96.4	108.8	106.9	105.6	95.7	102.9
95.1	99.3	113.2	108.4	106.9	99.1	102.2
97.1	101.1	116.6	110.6	109.2	99.9	104.8
101.0	102.2	119.9	113.6	109.4	100.6	104.9
105.0	105.4	116.7	112.1	111.2	100.9	104.8
109.0	112.6	118.4	113.7	113.8	106.5	106.4
104.6	107.1	109.9	107.6	108.5	100.4	103.2
93.2	94.4	95.7	93.9	93.5	93.8	95.8
81.6	82.9	85.8	85.4	83.8	83.3	88.5
1975	08	1	1			
64.1	60.8	60.4	58.4	58.3	59.2	63.2
61.0	56.0	55.1	55.4	54.2	56.6	59.3
59.3	54.6	53.3	54.5	53.4	53.8	57.2
56.9	54.1	53.6	52.9	52.2	53.2	56.1
51.9	56.0	53.2	51.0	50.3	51.8	53.9
52.8	58.4	56.4	56.7	57.9	57.1	55.5
54.2	63.0	63.5	67.4	66.7	70.2	60.7
53.5	76.5	74.7	74.7	74.8	77.0	67.4
70.9	84.6	81.2	81.5	80.8	85.3	78.5
77.1	90.6	88.4	85.4	86.2	90.9	88.2
81.7	94.6	90.8	90.4	89.0	94.4	91.6
83.1	93.2	89.6	90.4	88.3	96.2	93.5
82.9	91.0	89.4	88.1	88.7	94.8	86.8
80.4	89.2	88.0	85.9	83.7	93.0	88.4
77.9	88.2	85.9	84.5	83.2	91.6	86.5
77.4	87.9	85.2	86.4	84.0	91.1	86.6
77.9	88.9	86.3	88.5	86.5	90.7	85.2
78.7	90.1	89.5	91.8	89.9	97.4	86.8
79.1	90.6	89.5	87.6	88.4	94.3	84.0
78.9	87.9	84.6	85.2	86.8	90.3	83.0
31.2	87.9	83.7	84.9	84.2	88.0	82.0
85.2	91.0	87.7	88.0	87.2	88.1	87.9
80.9	81.6	83.8	82.5	82.7	81.4	83.3
63.0	63.8	68.7	69.2	69.4	72.6	72.9
1975	12	1	1			
171.6	169.1	170.2	170.0	159.4	155.8	148.3
164.5	165.6	166.2	165.4	154.6	151.4	143.7
161.5	163.9	165.1	164.0	153.4	149.3	139.8
160.3	165.0	165.2	164.7	153.7	150.6	138.9
161.3	168.4	170.2	167.7	156.2	156.1	142.1
162.1	190.7	179.1	179.3	167.7	167.9	141.9
165.2	198.2	196.3	196.6	186.0	179.5	148.0
176.8	201.5	202.4	200.6	190.9	185.2	157.2
182.4	198.0	197.3	201.8	186.6	183.0	168.9
191.1	199.0	195.7	196.1	186.2	182.2	177.3
196.5	196.0	193.2	194.7	184.6	181.7	180.0
197.1	192.1	189.8	191.6	182.4	178.9	181.2
197.5	187.6	186.8	189.0	179.1	175.5	179.3
196.1	189.3	185.5	186.9	178.2	175.5	177.2

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199.5	190.0	190.1	191.4	193.0	179.9	179.5
210.4	192.4	204.1	201.5	194.9	191.2	187.5
213.8	215.1	208.8	207.4	201.1	196.2	191.4
214.0	217.4	212.8	211.8	206.2	198.3	190.4
215.1	219.7	215.1	210.2	206.6	196.7	184.4
207.7	216.3	210.7	206.8	201.3	189.1	180.5
206.0	213.4	207.7	202.9	197.4	184.4	171.7
201.7	200.5	202.9	195.6	190.2	176.9	162.9
191.3	191.8	192.9	181.1	175.4	168.3	155.9
177.0	178.8	179.6	167.7	162.9	157.5	146.4
1974	04	1	1			

64.8	60.6	60.2	63.6	61.1	62.3	65.7
61.5	58.5	59.5	60.4	58.9	59.3	60.5
60.9	57.4	57.3	58.8	57.5	58.4	58.2
59.4	57.5	55.8	59.2	57.4	58.6	58.7
59.2	58.9	56.9	62.0	58.4	59.2	58.4
58.0	63.0	63.4	64.2	61.7	60.2	56.9
59.5	72.2	76.3	73.4	72.6	69.0	61.2
64.3	79.2	81.4	82.7	81.6	77.6	68.8
71.7	82.9	82.7	85.5	85.5	82.7	80.9
77.5	83.9	86.9	87.2	85.9	86.1	89.0
79.1	85.5	86.4	87.4	86.6	88.1	91.8
80.1	83.2	84.5	85.7	83.5	86.3	89.5
79.9	81.7	84.3	88.3	81.2	85.5	86.5
77.7	82.8	82.6	81.9	79.6	83.8	84.2
76.0	84.1	82.8	80.6	80.0	82.7	82.5
77.5	84.5	84.0	82.8	80.6	83.0	82.9
80.5	88.5	87.4	85.9	85.5	86.2	83.9
82.7	90.0	89.9	87.5	88.4	90.0	87.9
82.8	92.0	91.5	86.4	92.5	89.9	90.5
85.1	92.1	92.3	87.5	90.5	87.6	89.8
90.2	83.0	94.7	91.7	90.6	89.5	89.5
85.0	85.4	87.1	86.5	85.0	85.0	86.9
76.2	76.4	75.7	77.9	77.4	78.4	78.5
68.0	66.9	67.5	67.5	66.8	69.8	71.1

1974	08	1	1			
52.3	50.0	50.7	52.9	53.1	54.7	57.0
48.6	47.3	48.5	48.3	49.5	50.8	52.3
46.6	46.2	46.0	46.7	48.7	49.0	50.3
44.4	45.9	45.7	46.1	48.2	48.3	49.5
41.1	42.3	44.1	45.3	47.8	47.6	46.4
41.3	45.9	48.3	47.6	48.0	49.9	47.2
43.0	55.3	57.4	54.7	57.8	58.2	49.7
48.2	62.2	63.0	62.0	64.1	64.9	55.8
54.3	68.6	69.5	69.2	71.8	72.1	63.7
61.0	74.2	73.3	73.8	76.0	76.8	71.0
65.8	77.3	76.1	77.8	79.9	80.0	75.5
67.0	77.7	75.8	77.9	79.8	80.8	76.4
67.6	75.8	76.0	76.5	79.3	79.0	74.4
65.6	75.3	74.6	75.8	77.0	77.1	72.8
64.1	73.9	74.2	75.2	76.3	76.1	70.9
62.9	73.1	74.6	75.9	76.1	74.6	71.0
64.1	74.6	75.7	76.8	79.8	75.3	71.3
65.0	75.6	78.8	78.1	82.2	75.4	72.9
64.7	74.9	78.0	79.1	80.8	74.3	71.7
64.4	72.7	74.8	77.6	78.0	72.0	70.7
66.4	71.3	74.1	77.1	76.9	70.5	71.2
70.1	73.9	73.3	76.0	76.7	74.5	70.6

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66.6 70.2 70.1 70.3 72.3 69.1 68.1
58.1 59.4 59.4 60.5 60.9 62.0 61.4

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77.2 78.5 83.1 89.6 84.1 82.7 82.2

73.5 74.7 79.0 84.8 80.7 79.6 77.7

70.5 74.7 78.2 83.5 79.8 78.9 75.7

69.6 74.4 77.4 83.4 79.6 78.7 76.1

69.4 75.4 77.9 84.2 80.6 79.7 76.1

70.0 82.4 87.7 92.0 88.8 85.5 78.1

72.0 99.2 101.1 107.6 102.4 99.8 83.4

78.3 107.5 109.9 110.7 109.8 111.4 89.1

34.3 106.7 107.2 113.7 109.1 107.8 100.9

34.0 109.2 108.3 113.1 107.4 109.3 105.4

98.2 110.8 106.8 112.0 107.5 107.3 109.2

102.8 109.6 105.0 111.3 106.6 107.4 113.1

102.6 108.9 103.7 110.6 104.7 104.3 111.5

103.2 108.9 104.2 110.7 104.7 104.9 109.8

105.8 113.6 109.0 113.5 107.6 108.4 112.6

113.7 124.6 120.0 123.6 118.2 119.3 120.3

118.7 128.6 127.4 129.2 125.3 122.4 123.3

119.9 129.7 130.4 131.4 127.4 124.0 124.0

117.5 128.3 130.3 129.3 126.3 121.1 120.7

112.9 123.9 126.0 124.4 121.9 116.1 113.4

109.1 119.0 121.8 120.8 119.8 109.1 108.0

103.7 111.4 115.9 113.8 111.3 104.4 102.1

94.7 101.1 105.9 102.7 100.7 98.8 96.3

85.4 89.2 95.6 92.3 90.4 89.6 88.3

1973 04 1 2

64600. 58900. 60500. 59500. 58700. 59200. 60600.

59100. 56600. 58300. 57900. 55800. 55500. 56600.

57300. 56600. 59400. 57200. 55900. 55600. 56100.

58100. 55700. 57600. 57000. 55900. 54500. 55100.

57800. 56000. 58800. 56800. 55100. 53600. 53900.

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59000. 69000. 69600. 67700. 72600. 68800. 56700.

66800. 76400. 73700. 74900. 75600. 77200. 65100.

75200. 80000. 78100. 77000. 80100. 81900. 72900.

79200. 81000. 78600. 78400. 80500. 82800. 78600.

81300. 82500. 76800. 77700. 78200. 81500. 79900.

78900. 82000. 76400. 75400. 76700. 81000. 79800.

77200. 79900. 74200. 73400. 75600. 79700. 77700.

74900. 79000. 72800. 72000. 75900. 78700. 76500.

73700. 80300. 73800. 71700. 76700. 79400. 75400.

73800. 81100. 74600. 72400. 79900. 80900. 75400.

75100. 84500. 77800. 77000. 85300. 84300. 79300.

76700. 88300. 81100. 80100. 37500. 86500. 82400.

95000. 93000. 86600. 86000. 89100. 88200. 84300.

86800. 93900. 91500. 90500. 92900. 88500. 85300.

85500. 89700. 88400. 86800. 89300. 83700. 80700.

80400. 82700. 82400. 81100. 75100. 78900. 77700.

70800. 73400. 72400. 69800. 70100. 71600. 70500.

62800. 65500. 64400. 64000. 65200. 64500. 64600.

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49500. 48100. 49800. 48600. 49900. 52700. 51100.

45300. 45100. 46300. 46000. 45500. 47000. 47000.

44000. 44100. 45700. 45200. 44500. 45500. 46000.

42800. 43300. 45200. 44400. 44300. 44600. 45500.

41900. 43400. 43400. 43700. 42300. 43100. 44300.

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39700. 45500. 46200. 46200. 46000. 45000. 43600.
 42200. 53900. 54700. 53400. 52800. 52200. 46300.
 46400. 60100. 59400. 38400. 57800. 58800. 51900.
 53500. 66000. 66800. 55100. 58200. 65500. 60300.
 50100. 72200. 70600. 70800. 72300. 69700. 69300.
 64800. 76700. 71400. 72300. 70000. 71600. 71300.
 69100. 78300. 71800. 71800. 73200. 71200. 72600.
 70300. 76200. 70400. 71000. 71400. 69500. 72400.
 69800. 74400. 68600. 70600. 70900. 70900. 69500.
 68400. 74700. 66800. 68600. 69500. 68800. 69600.
 68100. 74700. 67800. 68300. 68000. 68400. 70200.
 68600. 74700. 68600. 69000. 67400. 70200. 71700.
 69700. 75200. 69400. 70400. 70400. 70100. 73200.
 68700. 72200. 67900. 70000. 71300. 69300. 71600.
 68500. 71500. 67900. 68000. 68000. 67800. 70800.
 69700. 71200. 67400. 67700. 66300. 66200. 70500.
 69800. 71200. 70800. 70400. 70400. 67700. 69200.
 63600. 67300. 63000. 64200. 63800. 63300. 62700.
 54000. 55400. 54600. 55900. 57000. 56100. 57600.

1973 12 1 3

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1972 04 1 2

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FORM NO 6413

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1972 08 1 2

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1972 12 1 3

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1971 04 1 2

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1971 08 1 2

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1971 12 1 2

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1970 04 1 2

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1970 08 1 2

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1970 12 1 2

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1978 04 2 1

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62.0	71.0	70.5	71.0	70.5	67.5	61.0

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53.0	76.0	76.0	76.0	76.0	76.0	59.0
55.0	84.0	81.5	84.5	83.0	85.0	63.0
50.0	86.0	86.0	85.5	85.0	85.5	67.0
54.0	87.0	85.5	85.5	85.5	86.0	70.5
54.0	87.0	85.5	86.0	85.5	86.0	72.0
64.5	86.0	86.0	86.0	85.0	85.0	71.5
65.0	86.0	86.0	86.0	84.5	85.0	71.5
65.5	86.5	85.5	86.0	84.5	85.5	72.0
70.5	87.0	88.0	87.0	87.0	88.0	74.0
76.0	92.5	90.5	87.0	90.0	90.0	78.0
75.0	87.0	88.5	86.0	86.0	88.0	79.0
75.0	84.0	85.0	83.0	84.0	83.0	77.0
74.0	82.0	81.5	79.5	82.0	78.0	75.0
72.5	79.0	78.0	77.0	79.0	75.0	72.0
70.0	76.0	76.0	74.0	75.0	73.0	68.0
68.0	71.0	72.0	69.5	69.5	69.0	64.5
63.0	65.0	66.0	64.0	67.5	64.0	61.0
1977 04 2 1						
50.	49.	51.	51.5	51.5	51.5	49.5
47.5	47.5	48.	49.	48.5	49.	47.5
46.	46.5	46.5	47.5	47.5	47.	46.

FORM NO 6413

46.	46.	46.	47.	47.	45.5	45.5
46.	46.	46.	46.	46.	44.5	45.5
44.	47.	47.	46.5	45.5	44.5	43.5
43.	51.5	52.	48.5	50.	48.	43.
45.	60.	60.	58.5	60.5	56.	46.5
49.	69.5	68.5	71.5	68.5	64.	52.5
52.	73.	72.	72.	70.5	67.5	58.
54.5	73.	72.	72.5	70.5	69.	61.
56.	72.5	71.5	71.5	70.	68.5	61.5
57.	72.	71.5	71.5	70.	67.5	60.5
56.	71.5	71.	70.5	69.5	66.5	59.5
55.5	70.	70.5	70.	68.5	66.	58.5
55.5	69.5	69.5	69.5	67.	65.	58.
56.5	69.	67.5	67.5	66.5	65.	58.
57.	67.	65.	66.5	64.5	63.	58.
58.5	66.	65.	67.	65.5	61.	57.5
60.5	68.	67.5	68.5	65.5	62.5	59.
60.	68.	67.5	68.	67.	62.	59.5
59.	64.5	65.	64.5	64.5	59.	57.
56.5	60.	60.5	60.	59.5	55.5	54.5
53.	55.	55.	65.5	54.5	51.5	51.5
1977 08 2 1						
42.5	43.	44.5	46.5	45.5	47.	46.
41.	40.5	41.5	43.5	42.5	43.5	43.
40.	39.	40.	41.5	41.	42.5	40.5
39.	38.5	39.	41.	41.	41.5	39.5
38.5	38.	38.	40.5	39.	39.5	40.
37.	37.	37.5	38.5	33.5	48.	38.5
36.	41.5	42.	41.5	44.5	42.5	38.
36.5	51.5	51.5	54.	52.5	53.	42.
38.5	61.	61.	62.5	60.	62.	47.
43.	65.	66.	65.5	66.	66.5	51.5
46.5	68.5	69.5	63.	68.5	69.	55.
48.5	70.5	70.	68.5	70.	70.	57.
49.5	70.	69.5	68.	69.5	69.5	57.
49.5	70.	68.5	68.	69.5	69.	55.5
50.	69.5	68.5	68.	70.	68.	54.5
50.5	68.5	63.	63.	69.5	66.5	54.
50.5	66.5	66.5	67.	67.5	64.5	53.5
50.5	63.	63.	63.5	63.5	61.	62.5
49.	60.	60.	59.5	60.	58.5	51.
48.	57.5	57.5	56.5	57.	56.	49.5
49.5	55.5	56.	55.	55.5	53.5	49.5
50.5	55.5	55.	55.5	55.5	53.	51.5
49.5	54.	54.	54.5	55.5	52.	52.
45.5	49.5	49.5	50.	52.0	49.	49.
1977 12 2 1						
66.	67.	70.	72.	71.	70.5	71.5
63.	65.	68.5	69.	68.	68.	68.5
62.	63.5	66.	66.5	65.5	67.	66.5
61.5	63.	65.	65.	65.	66.	65.
61.5	64.	65.	66.5	66.	66.	65.
61.5	67.5	67.	69.	68.	69.5	65.
62.	75.5	74.	77.	76.5	77.5	68.5
65.	90.5	87.5	89.5	90.5	89.5	73.
69.	97.5	95.	95.5	96.	96.	76.5
69.	95.	95.	95.5	96.5	96.	79.5
71.	95.	94.	95.5	96.	96.	82.

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73.	94.	53.	94.5	95.	94.5	83.
73.	94.5	91.	94.	94.	93.5	82.5
73.	94.	91.5	92.5	93.	93.	82.
74.	93.5	94.5	93.5	94.5	93.5	81.
79.5	97.	98.5	98.	98.	98.	83.5
85.	100.5	99.5	100.	101.5	100.	88.
85.	97.5	97.5	97.5	98.	97.5	88.5
85.5	94.5	94.5	95.	94.5	94.	86.6
83.5	93.	92.	92.5	92.5	91.5	83.5
81.	91.5	88.5	90.	89.5	87.	80.5
78.5	86.	84.5	86.5	86.	84.5	78.
74.5	81.	81.5	81.5	82.	80.	74.5
70.	75.	77.	76.5	75.5	75.	71.

1976 04 2 1

48.5	47.	48.5	49.	48.	48.	48.
46.5	45.5	47.	48.	46.	46.5	46.5
45.	44.5	46.5	46.	44.5	45.5	44.5
44.	44.5	46.	46.	44.	44.5	44.
43.5	44.	46.	45.	44.5	42.5	42.5
41.	44.5	45.5	44.	46.	43.	40.5
41.	48.	50.	49.	50.	49.	41.5
42.5	55.5	58.	56.5	60.	68.	45.
45.5	63.	64.5	64.	65.5	65.	52.5
47.5	57.5	57.	67.5	67.5	68.	56.5
48.	68.	67.	67.5	67.5	69.	59.5
49.5	67.	66.	66.5	67.5	68.	58.5
50.5	66.5	65.	65.5	67.	67.5	58.
50.	65.5	64.	65.5	66.	58.	57.
49.	64.5	63.5	65.	66.	68.	55.5
49.	63.5	63.5	65.	65.5	65.5	55.5
50.	62.	62.5	65.	65.	64.5	55.5
51.5	60.	61.	63.5	63.5	63.	54.5
52.5	60.	60.	62.5	63.5	60.	54.
55.	63.	61.5	63.5	63.5	60.	55.
56.5	64.	63.5	63.	63.5	61.	55.5
55.	61.5	60.5	60.	62.	58.	53.5
52.	56.5	57.5	56.5	58.5	55.5	51.5
48.5	52.	54.	52.5	53.5	52.5	49.

1976 08 2 1

42.5	41.5	42.	42.5	41.	42.	42.
40.5	39.	40.	40.	40.5	41.	41.
38.	37.5	38.5	38.5	38.5	38.	39.
36.	37.	37.5	38.	36.5	36.	38.
33.	35.	35.	34.	36.	35.	37.
31.5	35.	35.	36.	35.5	36.5	36.
32.5	39.	40.5	41.	45.5	43.	38.
35.	47.5	49.5	50.	53.	52.	42.
37.5	55.5	56.	56.5	60.	58.5	45.
40.	59.5	59.5	60.5	59.5	62.	48.
43.	61.5	62.	62.	62.	64.5	52.
45.	62.5	63.	60.	65.	64.5	53.5
45.5	62.5	63.	59.	65.	64.	53.
45.5	62.5	63.5	59.5	65.5	64.	52.5
45.5	62.	63.	59.5	66.5	63.5	51.5
45.	61.5	63.	59.5	64.5	63.	50.5
44.5	60.	61.5	59.5	60.5	60.	49.5
44.	57.5	58.5	59.5	57.	57.	49.5
44.	54.5	55.	59.5	54.5	56.	49.

FORM NO 6413

44. 52.5 52.5 57.5 52. 53. 48.5

44. 51. 50.5 55. 50.5 52. 48.5

44.5 49.5 50.5 53. 50.5 50.5 47.5

45. 49.5 50. 52. 50. 49. 46.

44. 46.5 48. 48. 47. 46. 44.

1975 12 2 1

55.5 55.5 57. 61. 67.5 64. 63.

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55. 71.5 73.5 80. 81.5 79. 61.

57.5 77. 81. 86. 89. 86. 66.5

60. 77. 81. 85. 90.5 87.5 68.5

62. 78. 81. 85.5 89.5 88. 70.

63. 78. 81. 86. 89. 88. 71.5

64. 78. 81. 84.5 88.5 87. 72.

65. 78. 81. 84. 88.5 87. 71.

69. 79. 82. 86. 89.5 87. 69.5

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72.5 85. 88.5 92.5 92.5 80.5 75.

74. 81.5 85. 91. 89.5 87. 74.

71.5 78.5 82. 87. 86. 84. 72.

69.5 76.5 81. 85. 84. 80.5 68.5

68. 74. 78. 82. 81.5 77. 66.5

65. 70.5 74.5 79.5 77.5 74. 63.5

62. 67. 70.5 75.5 73. 71. 61.

60. 62.5 65. 71. 69.5 68. 57.5

1975 04 2 1

41.5 38. 40. 40.5 41. 40.5 40.

39. 36. 38. 38.5 39. 38. 38.5

38. 35.5 37. 37.5 37. 37. 37.

37.5 35.5 37. 37. 37. 37. 36.

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42. 53.5 59.5 57. 56.5 55.5 43.

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45. 57. 59.5 59. 59.5 57.5 51.5

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43.5 56.5 59. 57.5 58. 56. 49.5

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43.5 50. 54.5 53.5 53. 48. 45.

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46.5 53. 53. 54. 51. 49. 46.5

44.5 48.5 48.5 49. 47.5 46. 45.

42. 43. 44. 44. 43. 43. 42.5

1975 08 2 1

36. 33.5 35. 39.5 36.5 36.5 38.

34. 32.5 34. 34. 35. 34. 36.

FORM NO 6413

32.5	32.5	32.	32.5	34.	33.	34.
31.5	32.	32.5	32.5	33.	32.5	32.5
29.5	30.	32.5	31.5	32.	31.5	32.5
28.	30.	32.5	30.5	31.	30.5	31.5
28.	34.	34.	33.5	34.5	34.5	31.5
29.5	43.5	43.	42.5	42.5	41.	34.5
32.5	51.5	51.5	50.	50.	48.5	38.5
35.5	53.5	54.	53.5	54.5	54.5	43.
38.	55.5	56.	56.	55.5	56.5	46.
39.5	56.5	56.5	56.5	56.5	57.5	47.5
40.	55.5	56.	56.	56.5	57.5	48.
39.5	55.	55.5	56.	56.	57.5	47.
39.	55.	55.	55.5	55.5	57.	46.
38.5	54.5	55.	55.	55.	56.5	45.
38.	52.5	54.5	54.	52.5	54.5	43.5
38.5	49.5	50.5	51.	50.	50.5	42.5
38.	48.5	48.	48.	48.	48.	42.
37.5	47.	46.	46.5	46.	47.	41.
37.5	44.5	44.	45.	44.	45.	39.5
38.	44.	42.5	44.5	43.5	45.	41.5
39.	43.	43.5	44.	44.	44.	40.
37.	38.5	44.	40.	42.	40.5	38.

1975 12 2 1

66.	67.	68.5	70.	65.5	64.	62.5
64.	63.	66.5	66.5	63.	61.5	60.
62.5	62.	65.	63.5	61.5	60.	59.
61.5	62.	63.5	63.	61.	59.	58.
61.	62.	62.5	63.5	60.5	59.5	57.5
61.	65.	65.	65.5	62.5	61.5	58.5
62.	72.	72.5	73.5	69.5	67.	59.5
63.	79.	82.	84.	79.	75.	62.
64.5	85.	86.5	86.	83.	81.5	66.
67.5	87.	87.	87.5	84.5	81.	69.
69.	86.5	87.	87.	83.5	81.	69.5
67.	85.5	86.5	86.5	82.5	80.5	73.
70.5	84.5	84.5	85.	81.5	80.5	75.5
71.	84.	83.	85.	81.5	80.5	75.
71.5	85.	84.5	85.	84.5	81.	75.
75.	89.	88.	87.5	88.5	84.5	77.5
79.	90.5	90.5	88.5	88.5	85.5	72.
79.5	88.5	88.5	86.	86.5	80.5	74.
77.	86.	86.5	85.	83.5	78.5	78.
75.	85.5	85.5	83.5	81.	79.	70.
76.	83.5	83.5	81.5	78.5	76.	68.
72.5	80.	80.	78.5	75.5	72.	66.
69.	76.	76.	74.5	72.	68.5	63.
68.5	73.	73.5	69.5	68.	65.5	60.5

1974 04 2 2

40500.	39500.	42500.	43500.	44000.	46000.	38000.
37000.	35000.	39000.	28000.	37000.	38000.	37500.
36500.	34000.	36000.	36000.	36000.	38000.	37500.
35000.	34000.	35000.	36000.	36000.	38000.	36000.
35000.	34000.	35000.	36000.	36000.	38000.	35000.
35000.	36000.	36000.	36500.	37000.	38000.	35000.
34500.	40500.	35500.	39500.	40000.	40000.	35000.
33000.	46500.	42500.	46000.	54500.	48500.	37000.
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FORM NO 6413

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1974 03 2 2

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1974 12 2 2

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FORM NO 6413

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1973 04 2 2

35000. 33500. 34000. 36500. 36000. 34500. 35000.
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1973 08 2 2

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FORM NO 6413

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 33050. 31650. 30800. 31200. 27550. 28650. 28550.
 35050. 31650. 31300. 29450. 28950. 29450. 27650.
 32050. 23500. 31700. 31850. 30150. 28400. 29450.
 32550. 35650. 32200. 32775. 30300. 29250. 30050.
 35970. 32500. 33750. 31250. 32550. 30850. 30050.
 36650. 32350. 32650. 32125. 31450. 30650. 30950.
 33670. 33950. 32050. 31250. 19900. 29850. 30550.
 32810. 32750. 30750. 32270. 30650. 27050. 30950.
 33070. 33350. 31450. 31530. 28850. 27450. 29350.
 32930. 30550. 31150. 30325. 27950. 27550. 26950.
 27530. 27750. 29350. 29350. 25350. 26550. 26350.
 28550. 28150. 25950. 24850. 26050. 26450. 25950.

1971 04 3 2

19872. 17727. 19050. 18850. 19950. 21150. 21850.
 19987. 17978. 18250. 18050. 19050. 21850. 21350.
 20129. 17927. 17950. 18150. 19250. 20950. 21050.
 19938. 17878. 17950. 17850. 19050. 20050. 20150.
 18827. 17863. 18250. 18150. 18850. 21050. 21150.
 18047. 18963. 18850. 18150. 18850. 20900. 19950.
 18938. 22050. 21650. 18950. 20850. 21925. 20050.
 18329. 20850. 21150. 21750. 23550. 21450. 20850.
 20675. 22850. 24250. 23450. 23550. 20500. 22750.
 21781. 22850. 23350. 23250. 20750. 24110. 23650.
 21824. 22450. 24150. 23550. 22450. 23550. 22650.
 21663. 22350. 23050. 24250. 21450. 22750. 22550.
 20890. 21750. 23350. 22550. 21850. 22550. 21750.
 20875. 29950. 21950. 21850. 21850. 21850. 22950.
 20038. 20950. 21950. 22850. 21150. 21750. 20850.
 20863. 20950. 22550. 22450. 22050. 21750. 21750.
 20787. 20850. 22750. 24650. 23250. 24250. 22950.
 21872. 21750. 22150. 23650. 22550. 21050. 22850.
 22775. 22750. 24350. 25450. 25850. 22750. 24450.
 22787. 23750. 25250. 24750. 23750. 23550. 25350.
 23181. 24450. 22450. 25750. 27450. 24650. 25500.
 23528. 22850. 21750. 21950. 23550. 22450. 25250.
 20827. 20050. 20850. 21950. 22550. 21850. 22650.
 20076. 17850. 20050. 20950. 21750. 21950. 22250.

1971 08 3 2

10250. 10600. 12400. 10800. 12200. 12400. 12900.

10300. 10200. 11600. 10500. 9640. 11900. 12300.

10650. 10500. 10800. 11300. 12100. 9500. 12200.

10350. 9700. 11100. 10700. 10700. 10500. 10500.

8300. 10000. 9300. 10200. 10300. 10500. 8900.

8350. 10600. 12000. 9200. 10200. 10800. 10500.

10200. 12700. 14000. 12700. 11900. 11700. 11200.

11650. 12500. 15200. 13800. 14700. 14000. 12200.

10450. 14300. 14800. 16600. 16100. 17500. 14100.

13250. 17200. 16200. 18100. 18200. 15100. 13500.

14850. 18700. 18000. 17800. 17500. 18800. 16600.

14850. 19500. 18000. 16500. 18300. 13800. 15200.

14350. 13700. 18800. 16700. 16800. 17900. 18100.

14450. 17900. 17600. 17500. 19700. 16800. 15600.

14850. 17500. 16700. 17200. 16400. 18400. 17200.

16950. 17400. 16700. 16700. 17200. 16600. 13800.

15650. 15300. 15100. 15600. 15700. 16400. 14200.

13950. 18800. 14100. 17100. 18100. 15300. 16400.

14950. 15400. 17200. 18400. 15200. 15500. 16300.

16050. 17000. 18200. 16600. 17800. 17500. 16200.

12650. 14100. 17000. 16500. 13500. 16300. 14800.

15450. 15600. 16300. 14200. 15900. 15400. 13800.

14550. 16500. 15600. 14500. 16500. 14900. 14000.

12750. 13500. 14000. 14200. 14700. 14900. 14200.

1971 12 3 2

32900. 32500. 28600. 25500. 26000. 32400. 34700.

29600. 30300. 25900. 24800. 27800. 31100. 32100.

31200. 33400. 28700. 24800. 26400. 32500. 30800.

31100. 30500. 26800. 23800. 27100. 31100. 31600.

31100. 30500. 28700. 26200. 28400. 34300. 31700.

30500. 33300. 26900. 24200. 29100. 32100. 32500.

31300. 35000. 30400. 29300. 32800. 36800. 32700.

31300. 36700. 31900. 25800. 35300. 29700. 36100.

34600. 36100. 32500. 30400. 35700. 38200. 34400.

35600. 36200. 31900. 31900. 35700. 37600. 35200.

36600. 35200. 30900. 31800. 35000. 34200. 38400.

38100. 37000. 30400. 31100. 34500. 35700. 38900.

38900. 37500. 30800. 30100. 35300. 36000. 38100.

38900. 35300. 29000. 31800. 35300. 35100. 37100.

39500. 33700. 29000. 31800. 36600. 36200. 40300.

40000. 36900. 33400. 32900. 38800. 39300. 39400.

41200. 38100. 32800. 32000. 38000. 39100. 40000.

40600. 38600. 33400. 32700. 40400. 37700. 42600.

40200. 36700. 32200. 34300. 39100. 37900. 41000.

38400. 36900. 33300. 33000. 40100. 37700. 40100.

38200. 37400. 31400. 31800. 37500. 36700. 39800.

37200. 35800. 30500. 31600. 37600. 37200. 37100.

37500. 31500. 28600. 31200. 37200. 36900. 37300.

33300. 30500. 27900. 28600. 35300. 35100. 35500.

1972 04 3 2

24750. 22700. 20350. 22150. 24300. 24000. 23200.

25100. 24375. 20252. 21400. 25300. 24150. 23600.

23700. 24200. 20400. 20500. 22750. 23450. 22150.

25475. 24280. 20500. 21500. 25450. 23450. 23300.

24175. 24250. 21450. 20350. 24925. 23700. 22650.

22875. 24800. 21300. 21300. 25600. 23550. 22100.

23900. 26200. 23575. 25100. 26900. 26925. 23400.

FORM NO 6413

FORM NO 6413

24750.	24200.	25450.	26550.	28200.	27400.	23525.
25900.	28100.	27050.	25500.	27850.	25930.	25375.
25700.	26400.	25350.	27175.	27450.	26330.	26330.
25700.	25650.	24400.	24700.	25350.	25780.	24900.
24000.	24850.	25300.	26000.	25000.	25430.	24725.
24800.	24400.	24000.	23900.	25500.	26560.	24650.
23800.	25150.	23400.	24500.	25150.	23600.	23800.
23050.	24450.	22500.	23100.	26050.	24300.	23875.
21775.	25775.	22900.	24000.	25300.	24300.	24100.
21750.	26050.	24000.	24400.	26800.	24500.	23900.
22600.	25100.	25400.	25350.	27450.	26200.	25700.
24450.	25500.	27900.	29200.	28900.	28550.	26100.
26050.	27650.	26500.	29500.	28500.	27550.	29500.
27850.	28000.	25850.	29400.	28900.	26000.	27300.
25700.	24300.	27500.	27300.	28400.	27000.	28250.
26200.	24600.	26950.	28100.	26100.	27950.	26650.
23800.	20000.	19050.	26000.	25150.	23650.	24400.

1972 08 3 2

12850.	14200.	13500.	14500.	14500.	14300.	12225.
11250.	11300.	12300.	11400.	11500.	12500.	12350.
12400.	10400.	10600.	11500.	12500.	10500.	11650.
10550.	11550.	11600.	12600.	11600.	10500.	10525.
10350.	11450.	12500.	11780.	10800.	11400.	10625.
11550.	10450.	10400.	11600.	11900.	10600.	11500.
10500.	12300.	14300.	14300.	13800.	14300.	10300.
9850.	12550.	11775.	14300.	13600.	17400.	12300.
10750.	17150.	16050.	15600.	17500.	17700.	14300.
15600.	20500.	19800.	18250.	17250.	18300.	15500.
16000.	20000.	18300.	21150.	19250.	19250.	17800.
17450.	19200.	18450.	18350.	20750.	19350.	19550.
15500.	20700.	18550.	20150.	19800.	18950.	18450.
17725.	20875.	18775.	19150.	18800.	18250.	18500.
17850.	19100.	20650.	20075.	17900.	18300.	18300.
15750.	18925.	18950.	19300.	19200.	17275.	17375.
16750.	19000.	16875.	19975.	17950.	18100.	17050.
16500.	18800.	18400.	20100.	17800.	17200.	18375.
16600.	18900.	18200.	18200.	16700.	17125.	19075.
16700.	17800.	18100.	18100.	16800.	17350.	18075.
16575.	17300.	18300.	18300.	16600.	15500.	18750.
18000.	18100.	19100.	17400.	16900.	15275.	18650.
17100.	17100.	18300.	17700.	15700.	17675.	16950.
15650.	13800.	14800.	15900.	16600.	15800.	13300.

1972 12 3 2

27500.	24100.	24000.	24000.	23800.	23000.	23700.
26000.	25400.	25300.	21400.	21000.	21800.	23000.
25500.	24100.	27100.	22900.	20900.	20900.	20900.
24700.	23600.	24000.	22200.	22100.	21000.	21900.
25400.	22400.	25400.	22300.	20900.	20000.	21000.
25400.	24700.	25400.	22900.	21800.	22000.	20900.
24600.	27100.	27400.	25600.	27400.	25600.	21900.
25100.	29400.	29600.	27800.	27300.	26500.	21900.
28500.	31800.	32540.	30700.	30300.	30100.	24400.
29600.	30500.	33300.	30000.	29300.	29400.	27800.
31900.	31300.	32800.	28700.	28700.	29000.	28800.
32300.	30000.	31000.	29900.	28900.	29900.	30500.
33000.	30000.	31220.	28900.	28000.	29800.	28900.
33000.	30000.	32120.	27900.	29600.	29600.	28900.
34100.	31200.	32800.	29500.	29300.	29600.	28900.

FORM NO 64 1E

35500. 33200. 32300. 29600. 31000. 31100. 28800.
 34700. 35200. 32720. 32600. 30300. 31000. 31400.
 34900. 35200. 35260. 33000. 31200. 31300. 30100.
 33900. 34200. 35080. 72790. 31700. 30500. 30300.
 32000. 33400. 32660. 31400. 30400. 30000. 28500.
 31400. 34000. 31400. 29600. 30100. 27600. 27700.
 30100. 31500. 30500. 29300. 29600. 27200. 26600.
 29400. 30700. 27500. 26000. 27300. 27600. 27600.
 26100. 27700. 29000. 26500. 23500. 24300. 23800.

1973 04 3 2

20800. 20100. 20450. 19900. 21050. 19800. 19800.
 20750. 20200. 19300. 19100. 20700. 20100. 18650.
 18300. 20500. 18300. 20100. 20600. 19725. 17750.
 20100. 18800. 18000. 20500. 19700. 18850. 17700.
 19450. 18800. 19100. 19925. 19900. 19000. 16500.
 19300. 21100. 19100. 20700. 19700. 20575. 17800.
 19300. 23500. 23200. 23600. 22600. 21300. 17550.
 18600. 23200. 24475. 24400. 25050. 23825. 23525.
 21500. 24725. 25325. 25650. 25400. 23550. 20950.
 21850. 25200. 24225. 24750. 25275. 27400. 22625.
 22400. 25425. 24800. 25600. 24250. 24980. 23550.
 24050. 24500. 24150. 24200. 24800. 23850. 24750.
 22750. 25000. 25050. 23500. 23225. 23800. 23600.
 21955. 23325. 23900. 23300. 24600. 22625. 24000.
 24900. 24400. 23300. 22600. 23700. 22900. 20800.
 23300. 22850. 24000. 22900. 22900. 23800. 22000.
 19750. 24460. 24700. 24500. 24550. 23600. 23900.
 26375. 24050. 25050. 23200. 26100. 25450. 25150.
 25575. 25575. 27250. 27200. 24750. 25600. 24300.
 28200. 26000. 29200. 26700. 27450. 26550. 26200.
 26800. 29600. 28400. 26300. 29100. 25250. 24300.
 27600. 23700. 25400. 27550. 25800. 25050. 23800.
 32100. 24100. 24200. 24150. 24150. 21800. 21200.
 19500. 19200. 22900. 20650. 21100. 22700. 21350.

1973 08 3 2

14275. 14150. 15050. 14450. 16400. 16400. 17500.
 14300. 12300. 14025. 14050. 13225. 11000. 13400.
 11300. 11400. 13300. 13200. 12150. 12200. 13250.
 11450. 10300. 13450. 12200. 12050. 12350. 13300.
 11300. 11400. 11625. 12350. 12000. 12225. 13300.
 10200. 11300. 13200. 11425. 12100. 13100. 14150.
 10075. 11150. 15000. 14200. 13000. 13100. 13250.
 13625. 18600. 19000. 17100. 15750. 17500. 11400.
 15400. 15950. 18175. 18925. 18900. 18250. 15750.
 15200. 20750. 20000. 20350. 16775. 21150. 20900.
 16950. 19025. 19800. 21100. 21600. 21725. 21850.
 17200. 19950. 19700. 21775. 23300. 22825. 21400.
 16600. 19900. 21000. 18975. 22500. 22000. 20400.
 17800. 18900. 19275. 18925. 19850. 22875. 21525.
 17900. 18850. 20075. 19100. 17775. 21800. 21775.
 17000. 20100. 17900. 17290. 20500. 20750. 20725.
 18250. 20600. 20175. 19050. 18000. 22025. 21600.
 19250. 19600. 18100. 20400. 21775. 21950. 20675.
 17525. 19775. 20625. 18350. 23000. 23000. 23450.
 17375. 18600. 19275. 19200. 20050. 20800. 20225.
 17575. 18975. 18725. 17900. 19950. 19700. 20500.
 18100. 19100. 19100. 19500. 20400. 20625. 21600.
 17400. 18000. 20500. 19400. 19100. 20000. 20300.

16350. 16000. 16350. 17500. 16750. 17600. 17750.

1973 12 3 2

FORM NO 6413

32250. 35600. 36400. 35650. 33975. 31380. 32100.

34150. 33600. 36350. 35100. 33540. 32820. 32160.

32400. 31400. 34350. 34300. 30410. 29620. 30820.

33300. 34700. 34650. 33800. 32410. 29080. 29620.

32300. 34300. 36500. 33775. 30780. 28880. 28140.

33400. 35400. 36700. 36675. 32690. 32120. 30320.

32275. 39500. 39175. 36500. 36400. 34800. 30400.

33550. 39925. 40200. 39400. 40640. 36700. 33150.

34625. 41625. 41850. 40175. 43180. 37500. 35750.

38050. 42500. 40750. 39600. 40180. 36600. 36200.

39375. 42800. 41300. 39400. 35650. 35600. 37100.

38625. 42100. 39000. 40400. 36600. 35500. 37200.

39550. 39475. 38550. 37300. 36200. 35100. 36700.

39425. 39975. 37200. 38900. 36600. 34850. 36800.

40400. 42225. 39000. 38200. 36600. 36300. 37500.

42075. 42000. 40300. 41100. 35100. 35800. 38300.

44450. 45000. 42250. 40050. 38700. 40700. 39200.

43500. 43800. 43100. 40500. 38500. 39500. 37350.

42700. 44100. 41100. 41300. 39875. 37675. 38475.

41000. 42000. 41200. 28875. 28375. 38600. 37700.

41200. 41050. 40300. 37000. 36750. 34300. 36400.

42000. 40400. 40600. 38450. 35400. 35500. 35375.

39600. 38400. 36775. 36600. 36125. 36100. 34175.

40800. 36600. 35850. 33100. 30500. 32000. 31700.

1974 04 3 2

22275. 21350. 22125. 21295. 22700. 23890. 21750.

17325. 20600. 21400. 20600. 21320. 22590. 22775.

18450. 19575. 19525. 21520. 22320. 21240. 20900.

20070. 19500. 20425. 21180. 21340. 22195. 19520.

19600. 19250. 21180. 20050. 22740. 24040. 22075.

19500. 21375. 21375. 19420. 23615. 24020. 19900.

20020. 24200. 22550. 24420. 25220. 24890. 20950.

25900. 22380. 25400. 26105. 27350. 29765. 22725.

23050. 24900. 27700. 28190. 29320. 28385. 26355.

24300. 24675. 24650. 26420. 29775. 28360. 28180.

24900. 30050. 26975. 27240. 24900. 28205. 26980.

25070. 26200. 28400. 25800. 24570. 26185. 26380.

25650. 23900. 24375. 25320. 27260. 24820. 26080.

24000. 27250. 24800. 25420. 26810. 24860. 25800.

22750. 22800. 24200. 22940. 24665. 24300. 24830.

23400. 25900. 23850. 23890. 24640. 23880. 22250.

23700. 24400. 24700. 24340. 25840. 24980. 25650.

22700. 26700. 28840. 25860. 27240. 25600. 27500.

24075. 25300. 26400. 26700. 27040. 25440. 26300.

25275. 27100. 27300. 25980. 27960. 25980. 25420.

26900. 28000. 28670. 30260. 29700. 25160. 26740.

25600. 27900. 27900. 27380. 28720. 25980. 25420.

26650. 25100. 27700. 27480. 28940. 25980. 24760.

23300. 23320. 23505. 25980. 24600. 24700. 19170.

1974 03 3 2

13475. 15700. 14750. 16780. 15200. 15975. 15375.

15200. 13600. 14190. 12950. 13400. 13850. 14470.

12250. 11150. 12000. 13150. 12150. 13175. 12750.

12730. 12150. 11900. 12200. 13150. 13200. 13900.

11020. 11200. 13250. 12300. 12300. 12150. 13200.

11400. 13320. 14000. 12075. 12150. 13125. 12325.

FORM NO 6413

13100. 15520. 13450. 15750. 15775. 14900. 11975.
 12900. 17750. 18550. 17100. 16900. 17850. 16050.
 14750. 16300. 17450. 18900. 18050. 18850. 19400.
 16650. 21400. 17725. 19200. 20450. 20275. 19150.
 19150. 20370. 22765. 21540. 21670. 24175. 20400.
 20600. 23070. 22120. 23220. 22290. 21970. 20400.
 18655. 21090. 19210. 21720. 21770. 21000. 19700.
 18450. 20715. 20520. 20940. 20640. 20900. 21650.
 17250. 20070. 20595. 20700. 21090. 20975. 20600.
 18350. 20200. 22320. 20200. 20075. 21545. 17780.
 18200. 20020. 19140. 21040. 21065. 21275. 19175.
 19150. 20170. 19240. 20245. 20740. 20975. 19200.
 19300. 20270. 21110. 21420. 20570. 19420. 19200.
 18200. 20120. 20590. 19800. 20920. 20500. 18600.
 19400. 21220. 18900. 19425. 21070. 21125. 19450.
 20400. 20300. 21600. 19800. 20200. 20450. 19850.
 18580. 19600. 20520. 21150. 21400. 19875. 18750.
 17700. 21350. 17300. 16580. 19095. 17975. 18495.
 1974 12 3 2

37480. 40480. 41190. 41880. 41115. 39850. 43490.
 36835. 39320. 40475. 43120. 42120. 38810. 41050.
 35090. 38850. 39500. 43700. 40460. 38360. 39340.
 34550. 39400. 38830. 43620. 41860. 39640. 41975.
 35270. 39600. 40500. 42400. 42770. 39590. 39980.
 35120. 42460. 40360. 45520. 44630. 41380. 41420.
 35090. 44340. 45400. 49805. 44680. 47480. 42810.
 38070. 43710. 47600. 51775. 46920. 45080. 45630.
 40955. 45240. 48000. 51000. 48980. 45420. 44810.
 42220. 47000. 47070. 51060. 46640. 47240. 50630.
 43690. 47530. 46900. 51130. 47220. 48770. 48400.
 44910. 45360. 46800. 50800. 47280. 45790. 50240.
 44560. 48100. 46100. 49030. 45490. 46010. 49010.
 46160. 46075. 46570. 50645. 44980. 43520. 49240.
 46570. 46390. 47540. 51820. 45480. 47820. 48880.
 46330. 48980. 47455. 53505. 44995. 48860. 50105.
 46790. 49250. 48450. 51450. 48780. 47450. 51150.
 50540. 50420. 50865. 52905. 47845. 49680. 53330.
 47330. 50900. 54675. 53830. 46300. 49310. 53000.
 49270. 48860. 51430. 54130. 47740. 47580. 49500.
 46410. 51020. 51470. 53740. 47240. 47670. 48250.
 45220. 45560. 48850. 54355. 44600. 46320. 46800.
 44260. 47960. 45900. 49900. 43760. 45850. 46720.
 43265. 46015. 45340. 46470. 43040. 42770. 43640.
 1975 04 3 2

30700. 31650. 31500. 30600. 31040. 31000. 32100.
 27080. 31500. 29700. 30000. 28800. 28600. 30725.
 27500. 30500. 30400. 30200. 28900. 28550. 29900.
 27700. 32500. 31600. 31100. 29220. 29030. 29675.
 29000. 31400. 31100. 31500. 30700. 29080. 30000.
 29000. 32400. 34000. 33100. 32150. 29715. 32200.
 30250. 36780. 36350. 35750. 34750. 33300. 32680.
 31140. 38320. 39900. 38800. 38850. 36200. 34710.
 33750. 39780. 39700. 40300. 37450. 37750. 36350.
 37350. 40200. 38900. 38300. 37600. 38350. 37400.
 40020. 39450. 37800. 39200. 36800. 39550. 37400.
 38800. 37800. 37250. 37850. 35400. 37250. 36900.
 36850. 36500. 35900. 35200. 34550. 36800. 35000.
 37350. 35500. 38950. 34410. 34800. 36200. 34800.

FORM NO 6413

33300.	34150.	34000.	33950.	31500.	33600.	33950.
36200.	34400.	35925.	33750.	32600.	34800.	31900.
37450.	35250.	37325.	34600.	32800.	35750.	34750.
37950.	36050.	37750.	36300.	35000.	37600.	34750.
39850.	37000.	39000.	36950.	36100.	36600.	35550.
39450.	37800.	39850.	37450.	35500.	36200.	36400.
39750.	39300.	40600.	39500.	37550.	39200.	37075.
38650.	38450.	39200.	40000.	37800.	36900.	38100.
35900.	36650.	36950.	34250.	36200.	36700.	37200.
31900.	34000.	33000.	33200.	33360.	34275.	33550.

1975 08 3 2

19800.	20200.	20460.	22100.	20400.	20300.	23200.
19700.	18500.	18300.	19600.	20400.	19400.	20800.
17100.	17100.	16600.	18600.	19600.	19400.	19400.
16790.	17200.	18100.	17400.	19700.	19500.	19600.
15900.	16100.	17300.	17600.	16500.	13700.	18500.
17100.	17700.	19500.	18400.	18400.	20400.	19500.
16700.	20100.	21700.	22000.	23000.	22100.	20300.
18800.	24060.	25500.	24100.	23800.	24100.	23100.
20400.	28600.	24300.	24500.	25800.	26180.	25100.
24020.	26280.	27100.	27300.	26740.	26920.	27100.
26100.	29580.	26600.	28380.	27160.	28320.	30000.
27700.	29460.	27320.	28780.	28620.	28800.	29500.
27500.	28300.	27040.	29180.	28440.	28380.	28700.
28000.	26300.	26220.	29180.	26800.	24600.	28200.
28000.	26300.	26500.	28780.	27280.	23940.	26200.
27500.	25900.	22800.	26440.	27200.	25400.	26600.
28100.	26500.	27200.	27640.	27300.	26400.	25700.
28500.	27300.	25200.	27560.	26600.	23600.	28300.
28700.	25980.	28900.	28560.	29400.	26500.	27300.
29180.	27780.	26400.	26560.	28500.	25700.	28300.
27100.	25980.	29740.	27460.	27700.	26400.	26300.
25900.	26300.	25500.	26260.	26200.	26700.	27100.
26800.	26320.	24400.	28220.	27200.	24300.	25700.
22720.	21720.	24500.	24480.	23700.	23400.	21900.

1975 12 3 2

67300.	70100.	71000.	71200.	69900.	63500.	63500.
68000.	70000.	59700.	69500.	68100.	62800.	61000.
65900.	68300.	66400.	69200.	65100.	62500.	61000.
66900.	70000.	69000.	68900.	68800.	61900.	59500.
66300.	67400.	67900.	68400.	65700.	58600.	59600.
66400.	70840.	68200.	69800.	70300.	62200.	60800.
68500.	72800.	73000.	72900.	70500.	67200.	61500.
69500.	76840.	74600.	74700.	72000.	68900.	60900.
72000.	77100.	74400.	75500.	71500.	71300.	62900.
73300.	78200.	77800.	77400.	62250.	70200.	64600.
78600.	81000.	79000.	77800.	70375.	74600.	67500.
80400.	78260.	77600.	77100.	65400.	60480.	65900.
78600.	77860.	75900.	77300.	66400.	36700.	63800.
80100.	77600.	77800.	75400.	47100.	70500.	65400.
76400.	79700.	77400.	77100.	56480.	72800.	67100.
73200.	77700.	79225.	77800.	65300.	71800.	64800.
78500.	78700.	77500.	75900.	67300.	71600.	66600.
80000.	80400.	76800.	76400.	63800.	71600.	63900.
79400.	78800.	79100.	76300.	65300.	73000.	67400.
77240.	80300.	76000.	76200.	67000.	70300.	63100.
74820.	76800.	77300.	76700.	66100.	70200.	62100.
77200.	53760.	78300.	75800.	67600.	69300.	59100.

74000. 49100. 77900. 74800. 65600. 67300. 59800.
71000. 66300. 71500. 70900. 65000. 65600. 57500.

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1976 04 3 1

32.	31.	32.	31.	31.	32.	29.
30.	30.	33.	30.	32.	30.	29.
30.	30.	29.	31.	31.	30.	29.
30.	31.	32.	31.	30.	29.	28.
31.	31.	31.	30.	30.	29.	28.
30.	31.	33.	33.	32.	31.	28.
29.	32.	35.	37.	37.	34.	28.
30.	39.	43.	41.	40.	39.	31.
36.	38.	41.	40.	40.	41.	32.
36.	39.	40.	40.	39.	40.	38.
37.	38.	39.	38.	41.	40.	38.
36.	37.	38.	38.	40.	37.	38.
35.	35.	37.	36.	37.	35.	37.
35.	35.	35.	35.	36.	34.	37.
35.	35.	36.	34.	37.	35.	32.
34.	34.	35.	35.	36.	36.	34.
32.	37.	37.	35.	37.	35.	35.
37.	37.	39.	37.	40.	35.	37.
35.	40.	42.	40.	40.	38.	39.
41.	40.	42.	42.	42.	38.	38.
42.	40.	41.	42.	42.	38.	38.
39.	38.	42.	39.	41.	37.	36.
36.	35.	37.	37.	36.	34.	34.
31.	34.	33.	34.	34.	31.	34.

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23.	23.	21.	20.	22.	20.	20.
20.	19.	20.	28.	19.	19.	19.
16.	13.	19.	17.	16.	16.	16.
17.	16.	15.	17.	18.	15.	16.
17.	16.	17.	18.	15.	16.	16.
17.	16.	13.	17.	19.	17.	17.
17.	19.	18.	21.	20.	18.	18.
14.	25.	24.	24.	21.	20.	20.
20.	27.	28.	28.	20.	22.	22.
24.	29.	29.	28.	28.	25.	25.
27.	30.	29.	29.	29.	28.	28.
28.	30.	30.	31.	32.	28.	28.
26.	31.	30.	31.	30.	29.	29.
28.	30.	31.	30.	29.	30.	30.
25.	29.	30.	33.	29.	30.	30.
24.	29.	31.	28.	30.	30.	30.
26.	29.	29.	25.	29.	29.	29.
26.	29.	31.	27.	29.	30.	30.
26.	30.	30.	33.	29.	30.	30.
26.	29.	31.	28.	27.	29.	29.
27.	30.	29.	27.	29.	28.	28.
26.	28.	28.	29.	27.	28.	28.
27.	29.	28.	28.	28.	25.	25.
27.	26.	25.	26.	26.	24.	24.

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53.	56.	53.	55.	56.	57.	53.
54.	52.	50.	54.	57.	54.	51.
52.	55.	50.	52.	56.	56.	49.
51.	53.	49.	53.	58.	56.	52.
53.	54.	51.	54.	57.	52.	50.

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53.	55.	52.	56.	50.	54.	50.
53.	62.	58.	61.	64.	59.	50.
56.	63.	53.	69.	70.	65.	52.
57.	64.	64.	66.	69.	63.	55.
62.	64.	60.	67.	69.	64.	57.
55.	64.	62.	65.	67.	65.	60.
56.	63.	61.	67.	70.	61.	60.
55.	63.	61.	65.	68.	67.	61.
66.	63.	62.	64.	68.	63.	58.
66.	65.	63.	67.	67.	62.	60.
65.	64.	64.	69.	71.	66.	60.
66.	69.	64.	70.	70.	63.	60.
67.	66.	67.	64.	71.	66.	60.
57.	67.	67.	69.	73.	63.	59.
67.	68.	67.	72.	67.	67.	57.
61.	67.	63.	68.	68.	67.	53.
64.	63.	64.	65.	55.	60.	53.
59.	59.	59.	64.	55.	58.	51.
53.	54.	54.	63.	62.	59.	47.

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33.9	33.4	34.3	33.4	35.7	37.7	36.4
32.4	32.	32.4	33.1	34.2	37.9	35.7
32.5	33.2	32.1	31.6	33.6	37.2	35.1
32.5	31.9	33.0	31.0	34.8	36.2	35.5
32.4	33.1	31.8	32.2	35.1	38.4	33.9
32.1	32.7	33.3	32.7	34.2	37.5	36.7
33.4	38.	38.6	37.3	36.7	36.7	34.6
35.6	44.8	43.1	43.	46.3	45.6	37.
38.4	42.4	43.1	45.9	47.6	46.3	40.8
42.2	42.5	43.5	40.2	43.5	47.	41.3
41.4	50.3	42.5	42.5	44.4	43.5	43.4
40.3	40.4	40.4	40.6	44.5	44.5	44.2
41.8	39.	39.4	40.4	41.9	39.5	42.
41.4	39.2	38.8	38.9	42.5	40.5	42.
42.5	27.9	39.5	39.9	38.2	40.1	37.1
40.7	28.9	38.7	38.3	38.1	39.6	39.4
42.5	40.1	41.6	39.9	40.6	39.9	40.1
45.4	41.5	43.4	41.8	43.4	43.5	41.0
45.1	43.3	45.7	44.2	46.4	42.5	43.2
43.7	45.4	46.2	46.7	47.3	45.7	44.3
44.	44.8	45.3	47.7	48.9	44.6	44.
44.9	43.9	43.3	45.5	46.4	44.5	41.
41.5	38.7	39.5	42.5	42.9	43.1	37.5
36.	36.8	34.4	35.9	39.7	38.5	35.4

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22.8	22.8	22.	22.	21.6	21.1	23.7
20.1	19.5	20.7	20.4	20.6	19.4	20.2
20.4	17.3	18.4	18.5	18.5	18.4	19.3
17.3	17.6	18.5	17.4	18.5	18.4	19.3
17.5	16.4	17.2	18.	17.5	17.3	17.5
17.3	18.4	18.3	19.2	18.6	19.3	17.9
17.2	22.7	21.	20.7	21.9	22.3	17.4
18.3	22.8	25.1	25.7	27.5	26.3	21.1
21.8	28.7	28.9	28.9	28.5	35.7	27.5
25.5	32.6	30.5	31.4	30.8	30.6	28.5
27.3	34.	32.8	34.4	30.	31.4	31.9
29.9	35.	32.9	32.2	33.8	32.4	32.8
29.6	34.9	34.5	33.4	31.7	29.5	31.7

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29.6	32.8	34.1	33.2	32.9	34.3	32.6
28.9	34.4	33.	32.5	33.4	29.6	30.8
23.5	34.	31.4	32.6	32.5	30.2	29.7
27.9	32.1	29.7	33.1	31.6	31.9	29.7
28.7	33.5	31.7	33.7	33.2	30.1	30.1
29.7	34.5	32.7	33.8	33.2	32.9	30.9
29.7	31.4	32.5	32.	32.7	29.8	30.5
23.6	31.3	32.1	32.1	31.4	30.1	29.8
29.2	30.8	30.3	32.1	32.2	30.1	29.1
27.2	29.5	29.6	30.	29.4	31.5	27.5
25.7	26.8	25.9	26.8	26.9	26.5	26.1

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67.4	62.6	59.5	64.8	66.2	67.	64.9
64.9	60.	57.8	63.4	64.2	62.7	65.5
63.7	60.3	60.1	63.1	64.1	63.4	61.4
62.3	60.4	60.3	62.	64.5	64.1	62.5
64.3	62.4	60.3	63.3	65.2	64.1	62.4
53.2	63.6	61.7	65.1	67.9	66.8	63.6
64.8	67.8	69.9	70.6	72.3	71.3	64.5
63.8	73.7	76.	78.8	76.9	76.7	65.1
67.9	75.1	72.5	78.4	77.6	78.8	70.3
71.2	73.8	73.5	73.7	73.7	77.1	73.4
75.2	74.5	74.1	76.6	79.	77.2	74.2
74.6	72.4	76.9	77.4	78.4	75.5	77.2
77.1	72.9	72.9	76.1	77.1	76.1	77.5
75.8	73.2	72.9	75.1	77.7	75.6	76.5
75.6	72.2	72.5	77.	79.	75.5	74.4
79.4	74.	75.3	79.8	80.5	78.7	75.
75.1	77.3	73.7	79.	78.6	79.1	76.
76.1	73.3	75.2	81.9	80.1	78.3	76.8
75.5	73.3	76.1	82.2	80.6	77.6	77.
74.3	73.7	78.3	79.2	78.7	78.3	73.6
71.9	73.6	74.	79.	76.4	74.6	73.6
73.8	69.6	74.6	73.2	77.6	71.8	65.4
67.4	66.	71.3	73.4	73.	72.1	65.4
65.9	63.1	64.6	70.6	69.2	66.	65.1

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40.3	42.1	41.7	40.9	37.7	36.0	33.8
40.3	39.9	40.5	40.1	36.3	35.1	33.0
39.6	39.8	41.1	39.2	36.0	35.2	32.8
39.5	39.1	41.0	39.4	36.1	35.4	32.5
40.7	40.3	43.6	39.8	38.5	38.0	33.4
42.9	40.7	50.6	48.7	47.6	46.2	41.9
46.7	43.6	51.3	49.1	47.6	46.6	43.4
46.7	46.5	50.3	47.2	47.0	46.6	42.4
48.7	46.5	49.7	46.7	45.9	45.1	41.9
49.0	46.5	48.4	46.4	45.3	43.2	40.9
46.6	45.6	46.4	45.5	43.3	41.9	39.3
45.6	45.6	45.2	43.3	43.4	40.8	40.0
44.3	43.1	45.1	43.5	41.3	40.7	38.3
45.1	43.3	45.7	42.6	42.6	40.7	37.4
46.3	44.0	45.3	42.3	43.4	41.2	39.4
48.2	46.8	47.8	46.0	45.0	43.4	39.1
51.7	50.7	52.0	49.7	49.1	46.4	43.0
49.4	50.7	50.3	50.1	49.2	46.0	43.2
48.3	49.9	49.1	46.6	45.8	44.9	41.6
46.0	46.6	45.5	43.6	43.1	40.5	39.6
42.7	43.5	42.5	39.9	37.4	36.2	35.9

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42.7	43.5	42.5	39.5	37.4	36.2	35.9
42.7	43.5	42.5	39.5	37.4	36.2	35.9
42.7	43.5	42.5	39.5	37.4	36.2	35.9
1978	08	3	1			
25.1	21.7	22.7	22.3	23.3	23.0	22.7
22.7	20.8	19.7	18.7	20.7	21.5	21.6
19.8	21.7	18.7	18.7	20.6	21.5	20.8
17.9	20.6	13.1	18.8	18.8	20.6	18.7
17.9	17.7	17.8	17.9	18.8	18.6	17.7
17.9	18.7	16.7	18.5	19.9	19.7	19.7
19.7	18.7	21.4	20.4	22.3	22.3	23.3
20.2	20.6	24.0	26.7	23.5	26.5	25.8
25.0	22.5	30.0	28.4	27.9	30.8	29.2
28.2	25.5	30.6	31.5	32.1	32.1	31.7
32.5	29.4	33.0	34.0	34.0	33.5	33.1
31.9	31.5	34.8	33.8	34.2	33.9	34.4
32.0	31.6	33.3	33.9	34.5	34.0	31.9
32.1	31.3	34.0	32.5	33.1	32.0	33.0
31.1	29.7	31.6	32.9	32.2	32.9	32.7
30.4	30.5	34.0	32.4	33.3	31.5	34.0
31.8	29.4	31.3	31.5	33.5	32.5	32.2
32.4	30.1	31.5	33.0	32.7	33.2	32.3
32.2	29.1	32.4	31.4	33.7	33.7	31.6
29.0	28.0	34.0	31.0	32.9	33.5	30.8
29.7	27.9	32.8	30.3	31.0	31.8	28.0
28.5	29.4	32.0	32.1	31.4	29.9	28.3
27.9	29.1	31.0	30.4	31.8	30.8	29.2
26.4	27.3	26.7	28.9	29.0	28.8	27.2
1978	12	3	1			
37.3	38.3	36.7	37.5	39.4	37.2	38.2
36.6	35.4	35.5	36.4	36.1	34.7	36.8
34.1	35.9	34.0	36.7	38.2	35.1	34.3
34.1	34.7	33.8	35.7	38.6	33.5	34.0
35.0	37.5	34.0	36.3	38.4	33.3	34.0
35.0	39.0	36.5	37.3	39.4	36.7	35.1
35.4	45.0	42.8	43.2	44.7	41.7	35.1
37.1	51.4	47.9	47.7	49.6	46.6	38.9
40.3	53.0	48.3	50.0	51.6	49.1	40.1
44.6	51.2	46.9	48.6	50.3	47.1	44.3
47.1	52.9	48.7	49.5	48.8	46.8	49.2
48.3	52.0	48.6	47.9	47.7	48.4	48.1
48.5	49.6	47.1	48.6	48.8	46.4	49.1
47.7	50.8	47.7	47.7	48.1	47.2	48.6
49.6	51.6	48.8	47.9	50.0	49.0	49.7
51.3	54.9	50.5	53.1	51.4	50.1	50.3
52.4	53.1	53.2	53.3	51.8	52.1	51.6
52.1	52.2	52.3	52.3	51.4	51.2	52.2
53.1	54.3	50.2	54.0	53.0	51.0	51.5
48.4	51.2	53.4	53.1	49.9	49.4	50.9
49.4	51.5	50.2	51.2	48.3	46.2	47.4
46.4	48.4	47.3	49.1	48.0	44.5	46.3
43.1	44.1	45.2	47.0	42.4	44.1	44.9
42.0	40.7	39.2	43.8	40.6	39.3	41.5
1978	04	4	1			
14.0	13.5	13.5	13.8	13.2	13.2	13.5
13.0	13.0	13.0	13.0	13.0	12.5	13.0
12.9	13.0	12.9	12.9	12.4	12.5	12.5
12.5	12.7	12.9	12.5	12.2	12.3	12.0

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12.7	12.7	13.0	12.5	12.1	12.0	12.0
12.0	12.0	12.1	11.8	11.7	11.1	11.0
11.8	12.5	13.0	12.4	12.2	11.1	11.3
12.0	14.0	14.0	14.0	14.0	13.0	11.7
13.0	16.5	16.5	16.0	16.4	16.0	13.0
13.5	18.5	18.0	18.0	18.0	18.0	15.5
15.0	19.0	18.5	19.0	18.5	18.0	17.0
15.2	19.0	18.5	19.0	19.0	18.0	17.0
15.3	19.0	18.5	18.5	18.5	18.0	17.0
15.5	19.0	18.5	18.5	18.0	18.0	16.8
15.4	19.0	18.5	18.5	18.0	18.0	16.5
15.3	18.7	18.5	18.4	18.0	18.0	16.4
15.2	18.1	18.1	18.0	18.0	17.8	16.0
15.3	17.7	17.5	18.0	18.0	17.3	16.0
15.5	18.0	17.0	17.7	17.9	16.5	15.7
16.0	18.3	17.1	17.6	17.2	16.1	15.2
16.2	17.2	17.7	17.5	17.6	17.4	16.0
15.8	16.0	16.8	16.7	16.6	16.5	14.7
15.4	15.5	15.5	15.8	15.0	15.5	14.0
14.2	14.0	14.6	14.7	14.0	14.4	13.6

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14.4	11.3	12.3	12.7	12.9	13.0	12.8
12.7	11.3	11.5	12.0	11.7	11.7	12.0
11.0	11.0	11.0	11.6	11.0	11.0	11.6
10.7	10.6	11.0	11.0	10.5	11.0	11.0
10.4	9.7	10.0	10.3	9.9	10.0	10.8
10.0	9.4	10.0	10.3	9.8	10.0	10.6
10.2	10.5	10.5	10.3	10.7	10.5	10.5
10.2	11.5	11.5	12.0	11.5	11.4	11.0
11.0	13.5	13.5	15.8	13.5	14.5	12.0
11.6	16.5	16.4	16.6	16.5	16.0	13.3
12.8	17.0	18.0	17.8	17.7	17.5	15.0
13.5	18.5	18.5	18.7	18.0	18.2	15.5
14.0	18.6	18.3	19.2	18.7	18.1	16.0
14.0	18.3	13.1	18.3	18.4	18.0	16.1
14.0	18.0	18.0	18.7	18.2	18.1	15.7
13.8	18.0	18.0	18.2	18.5	18.0	15.3
13.9	18.0	17.8	18.6	18.2	18.0	15.2
13.2	17.2	17.5	17.4	17.7	17.2	15.0
13.4	16.7	16.5	16.2	17.0	16.0	14.8
13.0	16.4	15.8	15.2	16.0	15.2	13.8
13.0	15.5	15.2	14.8	15.2	14.5	13.4
12.1	15.0	14.9	14.6	14.1	14.2	13.5
12.9	14.0	14.0	14.0	14.1	13.8	13.8
12.7	13.8	13.9	13.8	13.9	13.5	13.0

1978 12 4 1

14.4	13.9	14.0	14.1	14.3	14.0	14.0
13.0	13.2	13.0	13.8	14.0	13.5	13.0
13.0	12.9	12.7	13.0	13.2	13.0	13.0
12.7	12.9	12.7	12.0	13.0	12.6	12.5
12.3	12.8	12.8	13.0	12.9	12.5	12.5
12.4	13.0	13.0	13.0	13.5	12.7	12.5
13.0	14.2	13.8	13.9	14.0	13.5	13.0
13.0	15.0	15.0	15.7	15.8	15.0	13.7
13.5	19.0	19.0	18.7	18.0	18.6	15.2
14.5	19.8	19.0	19.5	19.6	19.2	16.8
15.0	20.0	19.6	19.5	19.8	19.7	17.0
15.4	20.6	20.0	19.7	19.9	19.6	17.7

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16.0	20.7	19.5	19.9	20.0	19.5	18.0
16.5	20.7	19.7	19.8	20.2	19.8	17.8
17.0	20.6	19.7	19.8	20.6	19.5	18.0
18.0	21.7	20.2	21.1	21.5	21.0	19.2
18.2	22.1	21.2	21.3	21.6	21.1	19.1
18.5	21.8	21.0	21.3	21.0	21.2	19.1
18.0	20.8	20.0	20.5	20.2	20.1	19.0
17.4	19.7	19.2	19.4	19.0	19.0	18.1
17.0	18.7	18.3	18.5	18.2	17.9	17.3
16.2	17.8	17.5	18.0	17.2	17.0	16.9
15.8	16.5	17.0	16.7	16.3	15.9	15.4
14.9	15.2	15.5	15.5	15.0	15.2	15.2
1977	04	4	1			

13.5	13.0	13.3	13.1	13.2	13.8	13.8
13.0	12.6	13.0	12.8	12.9	13.3	13.2
12.8	12.4	12.7	12.7	12.6	13.1	13.0
12.7	12.3	12.6	12.4	12.5	13.0	12.8
12.0	12.5	12.4	12.4	12.2	12.5	12.2
11.5	12.7	12.2	12.5	12.2	12.5	11.9
11.7	13.5	13.2	13.1	13.5	13.5	12.2
12.3	15.0	15.2	15.0	15.2	15.4	13.2
13.0	16.3	17.3	17.2	17.8	17.5	15.0
14.0	18.0	18.3	18.2	19.0	18.7	16.7
14.8	18.8	18.9	19.5	19.1	18.9	17.5
15.2	18.7	18.3	20.8	19.1	19.0	17.5
15.5	18.2	18.4	20.8	18.9	19.0	17.3
15.4	18.2	18.5	20.8	18.8	18.7	17.1
15.2	18.3	18.6	20.7	19.7	18.5	16.9
15.2	18.2	18.7	20.6	18.4	18.5	16.5
15.5	18.1	18.6	20.3	18.2	18.2	16.3
15.5	17.9	18.2	19.6	18.0	17.4	16.2
15.5	17.6	17.9	19.2	17.3	16.8	16.1
15.5	17.7	17.9	19.5	17.6	17.0	16.4
15.4	17.5	17.5	19.8	17.7	17.3	16.4
15.1	16.3	16.5	19.8	16.6	16.4	15.9
14.5	15.0	15.0	19.8	15.5	15.2	14.7
13.7	14.0	14.0	19.5	14.7	14.5	13.7

1977	08	4	1			
12.5	12.0	13.2	13.3	12.9	12.9	12.5
11.3	11.3	12.0	11.9	11.5	11.6	11.6
10.9	10.9	11.2	11.4	11.1	11.1	11.2
10.4	10.9	11.0	10.5	10.9	10.9	10.9
9.8	10.7	10.6	10.0	10.4	10.3	10.3
9.9	10.6	10.7	10.2	10.6	10.2	9.5
10.3	12.0	12.0	11.4	11.8	11.4	10.0
10.8	14.0	14.2	13.6	13.6	13.5	11.4
11.5	17.7	15.8	16.5	16.0	16.2	13.5
13.5	18.0	16.7	17.8	17.5	17.6	15.5
15.2	18.3	17.8	18.2	18.0	17.8	16.2
15.8	18.5	18.1	18.5	19.0	18.0	16.5
16.0	18.5	18.4	18.5	18.2	18.1	16.5
16.0	18.5	18.4	18.5	18.2	18.4	16.5
16.0	18.5	18.5	18.4	18.0	18.7	16.5
15.8	18.8	18.8	18.4	18.0	18.3	16.3
15.2	18.5	18.5	18.2	17.8	17.9	16.3
15.1	17.5	17.5	17.4	17.1	17.3	15.9
15.4	16.8	16.8	16.8	16.2	16.5	15.1
15.7	16.5	16.5	16.2	15.6	15.8	14.7

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15.7 16.2 16.3 15.6 15.6 15.4 14.6

15.0 16.1 15.2 15.1 16.1 15.2 14.6

15.0 16.0 16.2 14.9 16.6 15.0 14.5

13.5 15.0 15.6 14.1 16.5 14.0 13.7

1977 12 4 1

18.5 17.4 18.2 18.5 18.5 18.3 18.6

18.0 17.0 17.8 17.8 17.9 17.7 17.5

17.8 16.7 17.7 17.3 17.7 17.7 17.2

17.5 16.7 17.7 17.2 17.5 17.7 17.2

17.2 17.0 17.7 17.4 17.5 18.0 17.4

17.2 17.7 18.3 18.0 18.0 18.6 17.7

17.7 18.8 19.8 19.5 19.4 19.4 18.0

18.5 20.6 21.5 21.5 21.1 21.6 19.0

19.2 23.0 23.8 23.8 23.5 24.0 20.3

19.6 24.2 25.0 25.0 25.0 25.3 21.8

20.3 24.7 25.0 25.6 25.8 25.7 23.1

20.9 24.7 25.0 25.8 26.0 25.6 23.4

21.5 24.4 25.1 25.7 25.6 25.1 23.4

21.7 24.4 25.1 25.7 25.4 25.2 23.2

21.9 24.3 25.2 25.3 25.6 25.6 23.3

22.3 25.0 25.3 26.0 25.9 25.8 23.4

22.7 25.6 25.3 25.9 25.7 25.6 23.4

22.0 24.6 24.9 24.7 24.8 24.9 22.9

21.2 23.6 24.0 23.9 24.0 24.0 22.3

20.7 23.0 23.3 23.2 23.0 23.0 21.6

20.2 22.3 22.3 22.5 22.2 22.0 20.7

19.8 21.4 21.3 21.5 21.7 20.7 19.8

19.0 20.2 20.5 20.5 20.6 19.9 19.0

13.2 19.2 19.7 19.5 19.4 19.2 18.6

1976 04 4 1

11.8 11.6 12.0 12.0 12.3 12.2 12.2

11.4 11.2 11.3 11.4 11.5 11.7 11.8

11.0 11.0 11.0 11.3 11.0 11.4 11.3

10.7 11.0 11.0 11.2 11.0 11.3 11.2

10.5 10.7 10.5 10.5 10.5 10.5 10.6

10.5 10.7 11.0 11.3 11.0 11.2 10.6

10.5 11.7 13.0 12.7 13.0 12.5 11.0

11.0 13.8 15.0 15.5 15.0 15.7 12.7

12.0 16.0 17.0 16.9 17.0 17.0 14.3

13.0 16.7 18.0 17.3 18.0 17.7 15.7

13.7 17.3 18.0 17.4 18.0 17.8 16.0

13.9 17.4 17.9 17.5 18.0 17.5 16.0

14.0 17.2 17.4 17.5 17.3 17.3 16.1

14.0 17.0 17.8 17.5 17.9 17.0 15.4

14.0 17.1 17.5 17.3 17.4 16.9 15.3

14.0 17.1 17.0 17.1 17.4 17.0 15.3

13.9 16.8 16.9 16.7 17.0 16.5 15.0

13.8 16.0 16.9 16.5 16.5 16.0 15.0

13.8 15.9 16.2 16.5 16.0 15.5 14.3

13.8 16.1 16.9 17.2 16.2 16.0 14.9

13.7 16.3 16.0 15.5 16.0 15.7 14.4

13.6 15.0 15.0 14.2 16.2 14.3 14.0

13.0 13.6 13.2 13.0 13.5 13.5 13.0

12.0 12.5 12.0 12.3 12.2 12.4 12.0

1976 08 4 1

10.5 10.8 10.5 10.8 10.4 10.8 10.8

10.0 9.7 9.5 10.4 9.5 10.0 10.2

9.4 9.3 9.2 10.0 9.0 9.0 9.7

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9.2	8.9	2.6	9.9	8.6	9.0	9.3
8.2	8.5	8.1	9.2	7.8	8.4	8.7
8.2	8.5	9.1	9.6	9.0	9.0	8.4
8.7	9.9	8.6	9.6	10.2	9.8	9.7
9.1	12.5	10.0	10.4	12.6	10.9	9.2
10.0	14.5	12.0	12.7	13.5	14.0	9.5
11.0	15.4	14.4	14.3	15.0	15.2	12.0
11.8	15.9	15.2	15.2	15.8	15.9	13.8
12.3	15.9	16.0	15.5	15.8	15.9	13.8
12.3	15.9	15.9	16.0	15.7	15.6	13.7
12.3	15.9	16.0	16.2	15.7	15.7	13.7
12.0	15.7	15.8	16.2	15.7	15.7	13.3
11.9	15.4	16.0	16.0	15.7	15.2	13.2
11.5	15.0	16.0	15.0	15.7	15.2	12.9
11.7	15.0	15.2	14.4	14.5	14.2	12.3
11.5	14.0	14.5	14.0	13.6	13.6	12.0
11.1	13.0	13.6	13.0	13.0	13.2	11.7
10.9	12.5	13.3	12.0	12.5	12.7	11.8
10.9	11.6	12.6	11.6	12.0	12.4	11.8
11.3	11.7	11.7	12.0	12.0	12.4	10.5
10.9	11.0	11.0	10.5	10.9	11.0	10.0

1976 12 4 1

16.6	18.0	16.4	16.8	17.7	17.8	17.4
16.2	16.7	16.0	16.2	17.2	16.8	16.8
15.8	16.0	16.0	15.8	16.8	16.7	16.2
15.5	15.8	15.8	15.7	16.6	16.7	15.8
15.4	16.5	16.2	15.8	16.6	17.0	15.7
15.7	17.2	15.7	15.0	17.5	17.2	16.0
15.9	21.0	18.2	16.8	18.3	19.0	16.4
16.2	22.8	20.6	18.2	21.3	20.0	17.6
17.8	22.7	22.0	21.0	23.0	22.7	19.8
18.0	22.8	22.0	23.0	23.0	23.2	20.2
19.0	22.9	22.0	23.3	23.0	23.2	20.5
19.8	22.9	21.8	23.5	23.2	23.6	20.6
19.9	22.9	21.8	23.0	23.3	23.7	20.6
21.2	23.5	23.0	24.5	24.3	24.3	21.6
21.2	24.0	23.5	25.0	24.3	23.8	21.5
21.0	23.3	23.5	24.4	24.3	23.4	20.5
20.8	22.6	22.5	23.4	22.7	21.8	19.6
20.2	21.7	21.5	22.0	21.7	21.0	19.0
19.8	21.0	21.0	21.4	21.0	21.3	18.0
20.2	20.2	20.2	20.5	20.7	19.6	17.2
19.2	19.0	19.2	19.5	19.7	18.9	16.7
18.6	18.3	18.5	18.7	19.2	18.3	16.0
18.0	16.7	17.0	18.0	18.0	18.0	15.8
18.0	16.7	17.0	18.0	18.0	18.0	15.8

1975 04 4 1

9.8	11.1	11.3	11.1	11.2	11.2	11.6
9.2	11.0	11.1	10.9	10.9	10.8	11.0
9.0	10.9	10.8	10.5	10.7	10.5	10.8
9.1	10.9	10.6	10.5	10.6	10.5	10.6
9.3	11.6	10.6	10.8	10.5	10.5	10.6
9.3	11.3	11.0	11.1	10.9	10.6	10.4
8.1	11.9	12.3	12.0	12.0	11.4	10.5
9.4	13.2	13.3	13.5	13.5	13.4	11.5
10.5	15.0	15.5	15.5	15.0	15.0	13.0
11.5	16.0	16.5	17.0	16.0	16.0	14.5
12.3	16.6	17.0	17.5	16.5	16.5	15.1

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12.5	16.7	17.0	17.0	15.9	16.5	15.3
12.3	16.4	16.6	16.5	15.5	16.5	15.2
12.9	16.2	16.5	16.8	15.5	16.3	14.8
13.0	16.1	16.6	17.0	15.5	16.3	14.3
12.9	16.0	16.5	16.8	15.5	16.3	14.2
12.7	15.7	16.5	16.2	15.5	16.1	14.2
12.6	15.2	16.0	15.8	15.2	15.9	14.0
12.3	15.0	15.5	15.2	14.8	15.5	13.9
12.5	14.9	15.7	15.0	14.6	15.0	13.6
12.8	14.4	15.5	15.0	15.0	14.7	13.5
12.4	13.8	14.4	14.5	14.5	14.3	13.6
12.0	13.5	13.4	13.5	13.0	13.5	13.1
11.2	11.8	11.2	12.5	12.0	12.4	12.4

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10.8	10.9	10.0	10.5	10.7	10.9	11.2
10.0	10.2	9.3	10.0	10.2	10.2	10.5
9.7	9.3	9.3	9.9	9.9	9.8	10.0
9.5	9.1	9.1	9.8	9.6	9.6	10.0
8.9	9.0	9.1	9.7	9.6	9.2	10.0
9.0	9.2	9.1	9.8	9.2	9.2	9.9
9.2	10.0	9.8	10.5	10.5	10.2	10.0
9.3	11.5	11.5	12.5	12.0	12.0	11.0
10.1	13.5	13.8	14.0	13.6	13.5	12.4
11.0	15.0	14.7	15.0	14.9	14.9	13.2
12.0	15.9	15.6	15.7	15.4	15.2	14.0
12.8	16.0	15.6	15.9	15.5	15.8	14.2
13.2	16.9	15.6	16.0	15.5	15.8	14.2
13.2	15.9	15.7	15.9	15.6	15.7	14.3
13.2	15.7	15.6	15.6	15.6	15.5	14.3
13.2	16.7	15.6	15.5	15.6	15.5	14.1
13.2	16.5	15.5	15.2	15.5	15.2	14.0
13.0	16.0	16.0	14.7	15.0	14.8	13.8
12.9	14.6	14.5	14.3	14.2	14.0	13.3
12.4	14.1	14.0	13.7	13.9	13.4	13.0
12.0	13.9	15.5	13.4	13.1	13.0	13.0
11.7	13.3	15.0	13.2	13.1	13.0	13.0
11.5	12.3	12.8	12.9	12.5	12.8	12.5
11.2	11.8	11.8	11.8	11.3	12.0	11.8

1975 12 4 1

13.0	13.8	17.0	19.0	19.0	14.0	17.9
13.2	13.2	18.3	18.2	19.2	14.0	17.5
18.0	18.0	18.2	18.1	18.0	14.0	17.0
13.0	18.0	16.2	19.0	18.0	14.1	16.9
18.0	18.2	18.3	18.2	18.2	14.2	16.9
18.0	19.0	19.0	19.0	18.0	15.2	17.1
13.2	20.0	19.4	20.0	18.0	16.5	17.5
19.8	21.5	20.8	22.0	19.0	18.5	19.0
19.5	24.0	22.5	24.2	20.2	20.5	20.2
20.5	25.2	24.0	25.2	20.2	22.2	20.8
21.4	25.7	25.2	25.8	19.5	23.0	21.2
22.2	25.3	25.2	25.5	19.4	23.2	21.2
22.3	25.3	24.9	25.5	19.0	23.3	21.1
22.5	25.4	25.0	25.4	19.0	23.5	21.0
23.0	25.0	25.1	25.7	18.0	24.0	21.5
24.0	26.2	25.2	25.9	17.8	24.0	22.0
23.8	26.0	25.2	25.8	18.0	23.8	22.0
23.4	25.1	25.0	25.0	17.8	23.0	21.5
23.0	24.2	24.5	24.2	17.3	22.2	20.5

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22.0	24.0	24.8	23.8	17.8	21.8	19.8
21.1	23.6	27.0	23.2	17.6	20.7	19.0
21.0	22.3	22.0	22.2	16.0	20.0	19.0
20.5	21.0	21.0	21.0	18.0	19.1	17.5
17.5	20.2	20.0	20.0	14.0	18.8	17.1

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132.4	133.1	133.7	131.3	132.0	131.4	134.5
135.5	124.6	129.0	127.5	129.0	128.7	131.4
133.6	128.4	126.4	125.7	127.3	126.3	129.9
132.0	128.0	125.9	124.8	127.0	126.5	128.8
132.5	130.8	130.7	130.2	127.4	129.0	126.5
128.8	144.9	140.0	140.3	139.1	139.2	125.7
135.4	173.4	167.1	170.0	166.1	170.2	132.5
149.7	132.8	130.3	133.5	173.8	181.2	151.3
162.6	183.3	182.7	186.3	179.1	188.2	169.1
168.2	189.6	182.8	188.9	178.0	189.6	178.0
164.8	187.8	178.8	185.0	170.3	186.0	179.1
163.1	181.4	177.5	173.4	169.6	180.1	175.2
168.2	174.9	175.5	176.7	164.7	177.5	170.3
159.3	174.9	175.4	174.1	162.3	174.2	162.6
160.0	174.5	173.7	174.0	159.2	175.2	156.0
163.4	180.1	180.0	179.2	162.2	178.2	159.8
172.7	186.2	185.9	185.1	159.7	178.2	163.9
173.8	197.7	193.1	190.6	169.6	184.4	170.3
191.4	207.6	207.2	199.7	184.3	190.5	175.0
194.9	204.6	205.8	200.0	195.0	192.8	184.7
189.3	196.0	196.2	192.6	186.4	183.7	173.7
174.1	173.0	177.8	175.7	170.1	169.4	162.7
153.4	169.4	166.0	168.9	164.0	158.6	150.2
141.4	142.0	140.3	141.5	139.8	144.5	137.1

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99.0	94.8	96.6	101.2	98.6	98.2	102.2
93.7	90.9	93.0	95.1	92.3	93.0	96.2
89.6	87.1	89.2	91.8	89.9	89.7	93.3
83.6	87.0	88.7	88.7	89.0	88.2	90.6
86.0	84.4	88.3	87.1	87.3	90.3	87.9
83.3	94.4	92.1	95.6	96.9	94.8	85.4
87.4	110.9	112.7	114.6	115.3	115.6	94.3
97.2	130.4	131.8	130.6	130.9	132.6	108.4
114.3	136.7	140.4	139.4	139.4	142.5	131.9
126.3	147.9	148.4	145.9	146.0	148.6	140.6
133.0	152.9	154.2	149.1	147.7	152.1	145.3
136.7	152.3	154.7	147.2	148.8	151.5	146.4
136.2	151.3	152.1	144.1	148.0	148.0	147.4
135.0	148.6	149.1	142.6	144.5	146.9	140.2
133.1	146.5	145.2	141.4	143.2	145.2	137.8
132.9	146.1	148.4	141.9	143.4	144.6	138.0
134.8	143.3	149.2	143.7	146.9	143.2	139.2
140.1	147.4	152.4	150.5	148.9	145.7	140.9
142.1	145.7	152.5	146.6	149.5	145.6	137.3
138.4	143.3	147.1	142.3	145.8	138.3	134.1
139.1	140.6	143.0	137.2	143.2	135.6	134.3
133.0	145.3	144.2	141.9	142.4	138.0	136.0
124.4	130.3	131.1	129.0	128.5	127.2	126.3
104.4	106.9	112.2	111.6	110.8	116.1	111.0

1979 12 1 1

157.3	147.8	146.4	149.0	173.9	183.3	183.6
151.3	144.4	140.8	146.8	168.7	176.1	173.9

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147.7	141.4	139.1	145.7	166.6	174.2	169.5
149.9	142.5	143.0	145.7	166.9	175.4	168.9
146.3	143.8	145.4	150.4	171.4	174.6	166.2
149.2	165.5	161.4	173.0	191.3	192.9	174.8
154.3	201.9	198.6	204.7	225.6	229.7	183.9
159.6	219.5	214.7	221.2	242.7	244.9	210.0
183.7	215.1	207.5	217.7	238.1	239.3	221.3
198.5	216.4	209.8	218.1	237.7	240.3	234.2
207.6	217.1	205.0	218.8	233.7	238.1	245.0
213.2	214.5	201.4	215.7	229.4	235.3	241.4
215.4	214.3	204.4	214.2	225.0	229.4	236.9
213.3	213.6	206.0	215.9	226.0	233.3	235.0
214.3	218.8	213.8	220.5	233.6	237.6	241.6
226.8	237.0	230.3	239.4	253.4	256.0	255.5
234.7	241.7	235.6	252.7	263.7	258.1	263.5
229.1	242.6	239.7	251.0	256.9	257.4	266.9
223.4	242.8	235.3	251.0	266.5	254.9	261.8
214.2	231.4	226.3	238.8	259.9	246.6	249.2
202.9	223.8	218.9	237.6	249.1	237.0	240.5
190.4	203.3	202.4	212.7	239.8	226.0	230.3
173.0	183.7	181.3	204.1	215.5	211.5	218.4
159.0	161.1	160.0	182.5	193.2	199.9	205.8
1979	04	2	1			

54.5	53.0	55.0	53.0	54.0	54.0	52.0
53.0	51.0	54.5	51.5	52.0	52.0	48.5
51.5	50.0	51.5	50.5	50.5	51.0	48.0
51.0	50.0	51.0	50.0	50.0	51.0	47.5
51.0	50.5	51.0	49.5	50.0	50.5	48.0
49.5	51.0	51.0	49.8	50.0	50.5	47.0
47.5	56.0	56.0	55.0	56.0	57.0	48.0
49.5	68.0	67.0	63.0	67.0	68.0	52.0
52.5	76.5	74.0	75.0	74.0	75.5	57.0
56.2	79.0	77.0	77.5	76.0	77.5	60.0
58.0	80.0	78.0	78.0	77.5	79.0	62.5
59.5	80.0	79.0	78.0	77.0	79.0	63.0
58.5	79.0	77.5	78.0	75.5	77.5	62.5
58.0	78.0	77.5	77.5	75.0	77.0	61.5
58.0	76.5	77.5	79.0	75.0	76.5	60.5
59.0	75.0	76.0	80.0	74.5	76.0	60.0
59.5	75.0	75.0	78.5	72.5	74.0	60.0
60.2	74.0	73.5	76.0	70.0	71.0	59.5
62.5	75.0	74.0	73.0	67.5	69.0	59.0
65.0	75.3	74.5	73.5	70.0	70.0	59.0
65.0	73.5	73.0	73.0	72.0	69.0	60.0
62.0	68.5	69.0	69.0	68.0	66.5	59.0
59.0	65.0	65.0	63.0	63.0	60.5	56.4
55.0	59.5	58.0	57.0	58.0	55.0	54.0
1979	08	2	1			

46.5	45.0	46.5	48.0	48.0	47.5	49.5
43.0	42.5	43.5	45.0	44.0	45.0	45.5
41.5	41.0	42.5	44.0	42.5	44.0	45.0
41.0	40.5	42.0	43.5	42.5	43.0	44.5
40.0	39.5	40.5	42.0	42.0	42.5	43.0
38.0	39.5	39.5	40.5	41.5	42.0	41.0
38.0	45.0	44.5	45.0	45.0	45.0	40.5
38.5	55.0	55.5	56.0	55.0	51.0	42.0
42.0	65.0	65.0	64.0	62.5	65.0	48.0
45.0	69.0	70.0	69.0	68.0	70.0	53.5

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48.0	71.0	72.5	72.0	71.0	71.0	59.0
50.0	73.0	73.5	73.5	72.0	72.5	61.0
51.5	74.5	73.5	73.5	72.0	74.0	59.0
51.5	74.5	72.5	73.5	72.5	73.0	58.5
52.0	73.5	73.0	73.0	72.5	72.0	59.0
52.0	72.0	72.5	73.5	72.0	71.5	57.5
52.0	71.0	71.5	72.0	71.0	68.0	56.5
51.0	68.0	69.0	67.0	68.0	64.0	55.5
51.0	63.0	65.0	63.0	63.0	61.0	54.5
51.0	59.5	62.0	61.0	61.0	58.5	53.0
50.0	57.0	60.0	58.0	58.0	56.5	52.5
50.0	56.0	58.5	58.0	56.0	57.0	53.0
50.0	55.5	56.0	56.0	54.0	56.0	53.5
48.0	51.5	52.0	52.0	51.0	52.0	51.0

1979 12 2 1

57.0	54.5	56.5	56.0	59.0	52.5	63.0
54.0	52.0	55.5	54.0	57.0	61.0	59.0
52.0	52.0	53.5	53.0	56.0	59.0	57.5
51.5	52.0	52.0	52.5	56.0	58.0	56.0
51.0	52.5	53.0	53.0	57.0	59.0	56.0
52.0	56.5	56.0	55.0	59.0	60.0	57.0
53.0	62.5	62.5	63.0	67.0	68.5	69.0
54.5	72.5	73.0	76.0	81.0	79.0	62.0
56.5	80.0	81.0	83.0	87.0	88.0	66.0
58.0	83.5	82.5	84.5	88.0	89.5	69.5
60.5	84.0	82.5	85.5	89.0	89.5	73.0
62.5	84.5	82.5	85.0	88.5	88.0	74.5
63.0	84.0	82.0	84.0	88.5	87.5	74.0
63.5	82.5	83.0	85.0	88.5	87.5	72.5
65.5	86.0	82.0	85.0	88.0	88.0	72.5
70.0	89.0	82.5	88.0	91.0	92.0	78.0
72.0	86.5	83.0	89.5	93.0	92.5	81.0
71.5	84.0	82.5	85.0	91.0	88.5	81.0
71.5	81.0	80.0	82.5	87.0	84.0	79.0
70.0	78.0	77.0	80.0	84.0	79.5	77.0
67.0	75.0	73.0	76.5	81.0	77.0	74.0
64.0	72.5	70.0	75.0	78.0	74.5	72.0
61.5	66.0	65.0	69.5	71.5	74.0	69.0
58.0	60.0	59.0	64.0	66.0	70.0	66.0

1979 04 4 1

12.8	12.5	12.4	12.5	12.0	12.2	12.5
12.2	12.0	12.2	12.5	12.3	12.0	12.0
12.0	12.0	12.2	11.9	12.0	11.9	12.0
12.0	12.0	12.1	12.0	11.4	11.4	11.6
11.0	11.3	11.2	11.0	10.8	10.8	10.7
11.4	12.3	11.8	11.6	11.2	11.6	11.0
11.6	13.5	13.3	13.6	13.5	12.7	11.9
12.0	16.0	16.5	16.5	16.0	16.0	12.7
13.0	17.5	17.6	17.6	17.8	17.0	14.7
14.0	18.0	18.7	18.0	18.0	18.0	15.6
14.5	18.5	18.7	18.8	18.5	18.0	16.0
14.5	18.5	18.7	18.6	18.3	18.0	16.4
15.0	18.5	18.6	18.3	18.0	18.0	16.0
15.0	18.5	18.6	18.1	18.0	18.0	15.5
14.6	18.2	18.6	18.0	18.1	18.0	15.5
14.5	17.7	18.6	18.3	18.2	17.6	15.0
14.5	17.3	18.0	18.0	17.7	17.3	15.3
14.5	17.0	17.0	17.4	17.0	16.6	14.8

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15.0	16.7	17.2	17.6	15.6	16.0	14.5
15.5	17.2	17.5	17.4	17.1	16.4	15.6
15.0	16.5	16.7	16.5	16.6	15.5	15.2
14.5	15.8	15.0	15.2	15.0	14.8	14.3
13.5	14.0	14.0	14.6	14.2	14.0	13.6
13.0	12.8	13.2	13.0	13.0	13.0	12.8
1979	08	4	1			
11.8	11.2	11.5	11.5	12.0	11.6	11.6
11.0	11.0	11.0	11.0	11.4	11.0	11.0
10.5	10.5	10.5	10.5	10.7	10.8	10.8
10.5	9.7	10.0	10.0	10.0	10.0	10.0
9.5	9.7	9.7	9.9	9.8	10.0	9.5
9.5	10.0	10.0	10.1	10.0	10.5	10.2
10.4	11.5	11.3	11.7	11.6	11.6	11.0
11.0	13.4	13.8	14.0	15.0	13.5	12.0
12.0	16.0	15.0	16.2	17.2	15.0	13.8
12.8	17.0	17.2	17.5	18.2	17.1	15.0
13.5	17.6	17.8	18.2	18.0	18.0	15.5
13.8	18.3	18.0	18.2	18.0	18.0	15.6
14.0	18.0	18.2	17.9	18.2	18.2	15.8
14.0	18.2	18.0	17.9	18.0	18.5	15.3
13.7	18.4	18.1	17.8	18.0	18.4	15.2
13.6	17.6	17.0	17.4	18.0	17.7	14.9
13.5	17.0	16.2	17.0	17.4	17.0	14.9
13.4	15.4	15.4	16.0	16.0	16.0	14.5
13.0	15.0	14.4	15.2	15.4	15.2	14.1
12.6	14.3	13.5	14.6	15.0	14.5	13.9
12.4	14.0	13.0	13.6	14.0	14.0	13.6
12.4	13.2	12.5	13.4	13.8	14.1	13.6
12.4	13.5	12.5	13.5	13.6	13.5	13.0
12.0	12.6	11.5	12.8	12.7	12.6	12.0
1979	12	4	1			
13.4	13.0	13.0	13.6	13.8	14.0	14.0
12.6	12.5	12.7	13.0	13.6	13.5	13.6
12.4	12.6	12.5	13.0	13.0	13.6	13.6
12.0	12.6	12.2	13.0	13.0	13.6	13.5
12.4	12.6	12.5	13.0	13.4	13.8	13.5
12.5	13.5	13.6	14.0	14.0	14.2	14.0
13.2	15.0	15.0	15.5	15.6	16.5	14.0
13.7	17.9	18.0	18.0	18.6	18.5	16.0
14.0	18.7	19.5	20.0	20.0	20.8	17.7
15.5	19.7	19.5	20.5	20.0	20.5	18.1
16.0	20.0	20.0	20.5	20.5	20.8	19.0
16.5	19.5	19.6	20.5	20.8	20.5	19.0
16.5	20.0	20.0	20.5	20.8	20.5	19.0
16.5	20.0	20.2	20.5	21.0	21.0	19.0
18.0	21.5	21.4	22.1	22.0	22.2	20.4
18.0	21.5	21.3	22.0	22.4	22.1	20.5
18.2	21.5	21.1	21.0	22.0	21.7	20.5
17.9	20.0	20.0	20.5	21.0	20.7	20.0
17.2	19.0	19.4	19.4	20.0	19.5	19.5
16.3	18.4	18.4	19.0	19.0	19.0	18.4
16.0	17.7	17.7	18.0	18.0	17.9	17.5
15.8	16.0	16.4	16.4	16.9	16.9	17.0
14.3	15.0	15.5	15.4	16.0	15.7	16.5
13.5	13.8	14.0	14.6	14.5	14.9	16.0

APPENDIX B. AVERAGE WEEKLY PER UNIT LOAD DATA

The following pages show the standard hourly load patterns (A1, A2, F1, F2). There are four patterns for the first weeks in April, August, and December. The first line is an identifier showing first the pattern, then the month. The pattern codes are 1 = A1, 2 = A2, 3 = F1, 4 = F2. The next 24 lines show the average percent of the total week's use that occurs in each hour, going from midnight-1AM to 11PM-midnight down and Sunday to Saturday across.

1 4

0.00512	0.00483	0.00484	0.00489	0.00482	0.00481	0.00496
0.00488	0.00468	0.00472	0.00472	0.00467	0.00463	0.00471
0.00474	0.00462	0.00466	0.00466	0.00458	0.00457	0.00462
0.00475	0.00463	0.00464	0.00466	0.00458	0.00460	0.00459
0.00469	0.00467	0.00468	0.00471	0.00461	0.00459	0.00453
0.00461	0.00502	0.00507	0.00510	0.00496	0.00493	0.00455
0.00481	0.00588	0.00584	0.00596	0.00593	0.00582	0.00488
0.00530	0.00633	0.00640	0.00638	0.00638	0.00630	0.00555
0.00587	0.00655	0.00653	0.00661	0.00655	0.00657	0.00623
0.00621	0.00668	0.00657	0.00666	0.00655	0.00657	0.00664
0.00633	0.00676	0.00649	0.00658	0.00647	0.00657	0.00673
0.00634	0.00654	0.00634	0.00640	0.00632	0.00643	0.00665
0.00623	0.00639	0.00622	0.00625	0.00619	0.00627	0.00646
0.00603	0.00631	0.00614	0.00614	0.00611	0.00617	0.00627
0.00594	0.00629	0.00612	0.00611	0.00606	0.00617	0.00617
0.00596	0.00636	0.00624	0.00623	0.00617	0.00626	0.00621
0.00615	0.00666	0.00655	0.00651	0.00642	0.00648	0.00638
0.00636	0.00695	0.00681	0.00676	0.00667	0.00671	0.00661
0.00680	0.00725	0.00718	0.00710	0.00701	0.00693	0.00680
0.00698	0.00737	0.00741	0.00728	0.00727	0.00702	0.00693
0.00693	0.00716	0.00721	0.00712	0.00710	0.00684	0.00674
0.00652	0.00669	0.00669	0.00664	0.00651	0.00641	0.00640
0.00583	0.00590	0.00587	0.00585	0.00582	0.00590	0.00589
0.00522	0.00524	0.00522	0.00521	0.00520	0.00532	0.00536

1 8

0.00485	0.00460	0.00473	0.00482	0.00468	0.00480	0.00493
0.00448	0.00429	0.00438	0.00462	0.00436	0.00444	0.00451
0.00429	0.00417	0.00424	0.00447	0.00425	0.00431	0.00435
0.00420	0.00414	0.00422	0.00445	0.00420	0.00422	0.00428
0.00397	0.00401	0.00408	0.00433	0.00407	0.00413	0.00418
0.00392	0.00441	0.00448	0.00460	0.00438	0.00441	0.00418
0.00407	0.00522	0.00529	0.00536	0.00522	0.00527	0.00451
0.00451	0.00595	0.00587	0.00573	0.00587	0.00597	0.00508
0.00523	0.00646	0.00646	0.00637	0.00641	0.00652	0.00598
0.00584	0.00693	0.00679	0.00678	0.00684	0.00695	0.00671
0.00627	0.00728	0.00702	0.00702	0.00703	0.00721	0.00706
0.00651	0.00725	0.00700	0.00703	0.00706	0.00722	0.00713
0.00656	0.00709	0.00693	0.00688	0.00697	0.00708	0.00694
0.00640	0.00699	0.00677	0.00675	0.00682	0.00696	0.00677
0.00626	0.00690	0.00667	0.00665	0.00674	0.00689	0.00664
0.00621	0.00688	0.00672	0.00666	0.00678	0.00682	0.00664
0.00629	0.00693	0.00684	0.00682	0.00694	0.00688	0.00670
0.00637	0.00704	0.00703	0.00697	0.00709	0.00699	0.00678
0.00640	0.00691	0.00695	0.00685	0.00701	0.00687	0.00669
0.00635	0.00673	0.00671	0.00662	0.00682	0.00665	0.00660
0.00646	0.00668	0.00666	0.00654	0.00672	0.00657	0.00655
0.00664	0.00688	0.00682	0.00679	0.00688	0.00668	0.00661
0.00615	0.00639	0.00631	0.00627	0.00633	0.00623	0.00619
0.00526	0.00530	0.00533	0.00535	0.00545	0.00549	0.00551

1 12

0.00503	0.00506	0.00495	0.00492	0.00490	0.00489	0.00494
0.00479	0.00483	0.00479	0.00476	0.00473	0.00471	0.00470
0.00468	0.00474	0.00473	0.00471	0.00468	0.00466	0.00461
0.00466	0.00474	0.00473	0.00470	0.00467	0.00467	0.00456
0.00465	0.00483	0.00479	0.00478	0.00473	0.00475	0.00458
0.00472	0.00528	0.00518	0.00523	0.00518	0.00515	0.00478
0.00487	0.00603	0.00609	0.00611	0.00603	0.00596	0.00496

0.00560	0.00771	0.00762	0.00761	0.00772	0.00763	0.00621
0.00553	0.00751	0.00750	0.00745	0.00744	0.00737	0.00613
0.00547	0.00719	0.00716	0.00716	0.00708	0.00697	0.00616
0.00540	0.00683	0.00679	0.00681	0.00679	0.00665	0.00590
0.00538	0.00654	0.00642	0.00652	0.00654	0.00634	0.00578
0.00535	0.00628	0.00615	0.00627	0.00627	0.00608	0.00569
0.00547	0.00614	0.00611	0.00620	0.00617	0.00609	0.00578
0.00553	0.00604	0.00598	0.00602	0.00604	0.00597	0.00567
0.00520	0.00560	0.00561	0.00548	0.00590	0.00555	0.00534

2 12

0.00485	0.00484	0.00503	0.00495	0.00495	0.00504	0.00499
0.00465	0.00463	0.00477	0.00475	0.00474	0.00482	0.00474
0.00450	0.00454	0.00464	0.00463	0.00461	0.00466	0.00458
0.00445	0.00449	0.00457	0.00458	0.00457	0.00463	0.00446
0.00442	0.00454	0.00456	0.00458	0.00458	0.00466	0.00447
0.00446	0.00474	0.00474	0.00479	0.00476	0.00483	0.00452
0.00454	0.00530	0.00529	0.00533	0.00536	0.00538	0.00470
0.00474	0.00522	0.00620	0.00630	0.00630	0.00627	0.00504
0.00494	0.00678	0.00676	0.00684	0.00683	0.00686	0.00542
0.00510	0.00690	0.00687	0.00692	0.00693	0.00696	0.00574
0.00527	0.00693	0.00686	0.00691	0.00692	0.00695	0.00589
0.00538	0.00691	0.00682	0.00687	0.00691	0.00691	0.00605
0.00550	0.00692	0.00679	0.00687	0.00685	0.00692	0.00607
0.00556	0.00687	0.00680	0.00687	0.00683	0.00691	0.00602
0.00567	0.00696	0.00687	0.00695	0.00691	0.00695	0.00605
0.00595	0.00728	0.00717	0.00728	0.00717	0.00721	0.00628
0.00640	0.00756	0.00748	0.00744	0.00753	0.00744	0.00656
0.00642	0.00734	0.00731	0.00731	0.00736	0.00718	0.00657
0.00631	0.00711	0.00709	0.00708	0.00714	0.00699	0.00647
0.00613	0.00691	0.00684	0.00683	0.00694	0.00667	0.00619
0.00598	0.00662	0.00660	0.00662	0.00670	0.00637	0.00587
0.00570	0.00627	0.00621	0.00630	0.00637	0.00608	0.00563
0.00543	0.00583	0.00582	0.00583	0.00590	0.00572	0.00537
0.00509	0.00537	0.00534	0.00536	0.00540	0.00538	0.00505

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0.00544	0.00529	0.00532	0.00528	0.00537	0.00545	0.00535
0.00510	0.00521	0.00516	0.00509	0.00517	0.00534	0.00521
0.00504	0.00517	0.00506	0.00511	0.00525	0.00520	0.00506
0.00512	0.00515	0.00512	0.00515	0.00524	0.00518	0.00501
0.00519	0.00520	0.00519	0.00514	0.00519	0.00533	0.00506
0.00518	0.00534	0.00544	0.00534	0.00548	0.00556	0.00519
0.00525	0.00594	0.00600	0.00606	0.00581	0.00590	0.00532
0.00560	0.00622	0.00640	0.00635	0.00661	0.00640	0.00563
0.00594	0.00641	0.00667	0.00656	0.00666	0.00647	0.00595
0.00616	0.00644	0.00650	0.00639	0.00646	0.00663	0.00628
0.00625	0.00657	0.00640	0.00637	0.00633	0.00653	0.00620
0.00618	0.00623	0.00632	0.00625	0.00613	0.00629	0.00615
0.00603	0.00605	0.00603	0.00602	0.00609	0.00589	0.00598
0.00593	0.00628	0.00612	0.00583	0.00611	0.00588	0.00602
0.00606	0.00570	0.00597	0.00577	0.00591	0.00597	0.00556
0.00598	0.00591	0.00600	0.00597	0.00583	0.00601	0.00567
0.00597	0.00617	0.00625	0.00626	0.00619	0.00615	0.00601
0.00620	0.00636	0.00654	0.00635	0.00651	0.00633	0.00619
0.00646	0.00659	0.00679	0.00676	0.00663	0.00646	0.00628
0.00663	0.00668	0.00686	0.00675	0.00660	0.00645	0.00641
0.00668	0.00679	0.00662	0.00687	0.00684	0.00634	0.00631
0.00645	0.00634	0.00656	0.00645	0.00657	0.00622	0.00626
0.00629	0.00596	0.00614	0.00615	0.00625	0.00602	0.00584

0.00546 0.00550 0.00550 0.00569 0.00571 0.00567 0.00549

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0.00487 0.00497 0.00495 0.00503 0.00520 0.00518 0.00517
0.00476 0.00437 0.00463 0.00467 0.00452 0.00447 0.00477
0.00429 0.00410 0.00426 0.00440 0.00437 0.00422 0.00447
0.00409 0.00403 0.00418 0.00424 0.00432 0.00424 0.00430
0.00389 0.00390 0.00409 0.00414 0.00405 0.00413 0.00405
0.00391 0.00410 0.00428 0.00422 0.00435 0.00429 0.00432
0.00402 0.00467 0.00486 0.00495 0.00494 0.00484 0.00447
0.00425 0.00554 0.00586 0.00565 0.00560 0.00577 0.00490
0.00474 0.00597 0.00622 0.00635 0.00607 0.00661 0.00579
0.00561 0.00685 0.00650 0.00687 0.00672 0.00672 0.00627
0.00624 0.00701 0.00700 0.00731 0.00710 0.00723 0.00695
0.00647 0.00730 0.00704 0.00729 0.00747 0.00723 0.00698
0.00622 0.00725 0.00704 0.00715 0.00722 0.00705 0.00686
0.00642 0.00699 0.00698 0.00705 0.00703 0.00695 0.00694
0.00628 0.00687 0.00690 0.00720 0.00680 0.00689 0.00681
0.00617 0.00691 0.00683 0.00686 0.00698 0.00682 0.00644
0.00632 0.00675 0.00667 0.00689 0.00673 0.00695 0.00653
0.00635 0.00697 0.00662 0.00708 0.00698 0.00676 0.00677
0.00638 0.00685 0.00705 0.00715 0.00696 0.00689 0.00683
0.00625 0.00663 0.00701 0.00674 0.00689 0.00680 0.00661
0.00619 0.00655 0.00685 0.00667 0.00662 0.00661 0.00645
0.00641 0.00654 0.00669 0.00668 0.00661 0.00649 0.00645
0.00619 0.00650 0.00657 0.00660 0.00654 0.00641 0.00618
0.00574 0.00576 0.00572 0.00596 0.00602 0.00592 0.00572

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0.00543 0.00543 0.00532 0.00535 0.00539 0.00526 0.00529
0.00531 0.00524 0.00523 0.00520 0.00526 0.00507 0.00513
0.00520 0.00525 0.00523 0.00521 0.00509 0.00503 0.00491
0.00516 0.00525 0.00513 0.00514 0.00523 0.00498 0.00496
0.00527 0.00529 0.00526 0.00519 0.00522 0.00499 0.00488
0.00525 0.00550 0.00530 0.00536 0.00548 0.00520 0.00504
0.00528 0.00602 0.00589 0.00585 0.00590 0.00581 0.00513
0.00540 0.00631 0.00625 0.00629 0.00631 0.00589 0.00531
0.00578 0.00643 0.00634 0.00637 0.00646 0.00622 0.00556
0.00607 0.00642 0.00625 0.00635 0.00634 0.00612 0.00594
0.00641 0.00653 0.00631 0.00629 0.00620 0.00612 0.00614
0.00649 0.00641 0.00621 0.00642 0.00611 0.00597 0.00620
0.00650 0.00637 0.00613 0.00621 0.00605 0.00579 0.00613
0.00657 0.00633 0.00615 0.00618 0.00594 0.00604 0.00607
0.00655 0.00624 0.00624 0.00634 0.00612 0.00616 0.00621
0.00672 0.00668 0.00643 0.00659 0.00633 0.00636 0.00622
0.00681 0.00680 0.00652 0.00655 0.00647 0.00646 0.00637
0.00689 0.00674 0.00664 0.00657 0.00648 0.00646 0.00640
0.00674 0.00675 0.00662 0.00669 0.00628 0.00636 0.00640
0.00654 0.00663 0.00655 0.00643 0.00620 0.00627 0.00618
0.00639 0.00664 0.00636 0.00642 0.00621 0.00605 0.00597
0.00637 0.00606 0.00627 0.00629 0.00611 0.00592 0.00568
0.00599 0.00570 0.00590 0.00604 0.00573 0.00586 0.00563
0.00579 0.00559 0.00555 0.00567 0.00552 0.00549 0.00530

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0.00495 0.00495 0.00501 0.00501 0.00496 0.00502 0.00510
0.00470 0.00480 0.00486 0.00486 0.00486 0.00483 0.00489
0.00461 0.00475 0.00478 0.00476 0.00471 0.00476 0.00478
0.00456 0.00472 0.00474 0.00470 0.00463 0.00469 0.00466
0.00444 0.00472 0.00462 0.00458 0.00450 0.00451 0.00450
0.00438 0.00473 0.00466 0.00468 0.00457 0.00457 0.00440

0.00429 0.00506 0.00521 0.00512 0.00515 0.00491 0.00456
0.00454 0.00578 0.00598 0.00599 0.00592 0.00590 0.00496
0.00493 0.00557 0.00674 0.00668 0.00674 0.00662 0.00562
0.00529 0.00700 0.00719 0.00711 0.00714 0.00709 0.00526
0.00564 0.00724 0.00731 0.00740 0.00727 0.00716 0.00654
0.00571 0.00725 0.00730 0.00744 0.00724 0.00714 0.00659
0.00582 0.00717 0.00718 0.00733 0.00707 0.00712 0.00655
0.00584 0.00713 0.00722 0.00734 0.00707 0.00706 0.00638
0.00579 0.00712 0.00721 0.00733 0.00703 0.00704 0.00629
0.00577 0.00704 0.00716 0.00730 0.00702 0.00701 0.00621
0.00575 0.00694 0.00707 0.00714 0.00693 0.00689 0.00616
0.00574 0.00672 0.00687 0.00699 0.00679 0.00668 0.00610
0.00577 0.00667 0.00672 0.00690 0.00662 0.00645 0.00597
0.00587 0.00675 0.00683 0.00694 0.00663 0.00646 0.00607
0.00586 0.00657 0.00669 0.00674 0.00665 0.00646 0.00605
0.00572 0.00617 0.00623 0.00642 0.00633 0.00612 0.00581
0.00548 0.00574 0.00570 0.00611 0.00571 0.00575 0.00549
0.00513 0.00522 0.00520 0.00573 0.00528 0.00535 0.00517

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0.00525 0.00495 0.00503 0.00515 0.00516 0.00519 0.00517
0.00482 0.00470 0.00466 0.00485 0.00476 0.00478 0.00486
0.00452 0.00447 0.00449 0.00469 0.00453 0.00453 0.00468
0.00442 0.00431 0.00435 0.00450 0.00435 0.00443 0.00450
0.00410 0.00418 0.00416 0.00432 0.00417 0.00420 0.00433
0.00409 0.00419 0.00420 0.00440 0.00427 0.00429 0.00427
0.00428 0.00473 0.00457 0.00470 0.00482 0.00470 0.00441
0.00442 0.00553 0.00534 0.00549 0.00569 0.00539 0.00479
0.00479 0.00661 0.00624 0.00659 0.00648 0.00643 0.00537
0.00525 0.00719 0.00697 0.00712 0.00720 0.00710 0.00605
0.00573 0.00744 0.00740 0.00746 0.00745 0.00741 0.00655
0.00598 0.00765 0.00756 0.00761 0.00748 0.00754 0.00664
0.00610 0.00762 0.00758 0.00768 0.00756 0.00753 0.00668
0.00610 0.00760 0.00756 0.00762 0.00753 0.00757 0.00666
0.00604 0.00757 0.00754 0.00759 0.00750 0.00757 0.00658
0.00599 0.00750 0.00749 0.00750 0.00752 0.00742 0.00648
0.00590 0.00736 0.00738 0.00736 0.00742 0.00730 0.00643
0.00583 0.00705 0.00708 0.00700 0.00704 0.00697 0.00627
0.00581 0.00677 0.00674 0.00671 0.00670 0.00660 0.00608
0.00568 0.00651 0.00645 0.00640 0.00645 0.00633 0.00589
0.00561 0.00632 0.00626 0.00609 0.00617 0.00611 0.00583
0.00553 0.00606 0.00607 0.00595 0.00606 0.00605 0.00584
0.00553 0.00597 0.00589 0.00591 0.00602 0.00593 0.00563
0.00529 0.00562 0.00559 0.00551 0.00572 0.00553 0.00530

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0.00507 0.00502 0.00499 0.00508 0.00516 0.00486 0.00508
0.00482 0.00480 0.00481 0.00489 0.00501 0.00470 0.00486
0.00476 0.00472 0.00477 0.00478 0.00487 0.00466 0.00477
0.00468 0.00470 0.00473 0.00469 0.00483 0.00464 0.00470
0.00465 0.00477 0.00479 0.00479 0.00487 0.00469 0.00471
0.00469 0.00497 0.00498 0.00495 0.00502 0.00483 0.00479
0.00483 0.00551 0.00533 0.00531 0.00532 0.00527 0.00489
0.00496 0.00513 0.00595 0.00592 0.00599 0.00586 0.00529
0.00519 0.00567 0.00664 0.00669 0.00651 0.00664 0.00579
0.00546 0.00693 0.00679 0.00703 0.00671 0.00686 0.00607
0.00568 0.00703 0.00694 0.00711 0.00676 0.00702 0.00626
0.00587 0.00702 0.00693 0.00715 0.00681 0.00699 0.00633
0.00597 0.00702 0.00691 0.00711 0.00672 0.00696 0.00635
0.00610 0.00708 0.00701 0.00719 0.00679 0.00708 0.00638

APPENDIX C. MONTHLY AND DAILY LOAD CURVE TABULATIONS

The following pages give values from the monthly load duration curves and monthly average hourly weekday and weekend load duration curves projected by our study for the total railbelt. These figures are given for 1978 as well as ISER's forecasts for 1980, 1990, 2000 and 2010 for the high, medium, and low cases. For each forecast, the following information is given:

1. Monthly Load Curve Points

These twelve lines represent the 0%, 20%, 40% and 100% points on the monthly hourly load duration curve, normalized so the 0% point = 1.0. The first line represents January, the next February, etc.

2. Monthly Average Days

This data appears in two blocks. The first block represents average weekdays, the second represents average weekend days.

Each block contains an hourly load duration curve for the average day (either weekday or weekend) in a month, going from January to December across the page and from the 0% hour (1.0) to the 100% hour down the page. Weekend days are normalized using the weekday minimum.

ISER LOW CASE 1980

MONTHLY LOAD CURVE POINTS

1.0000	0.9157	0.8892	0.6322
1.0000	0.9246	0.8977	0.6333
1.0000	0.9335	0.9063	0.6345
1.0000	0.9424	0.9149	0.6356
1.0000	0.9429	0.9025	0.6059
1.0000	0.9433	0.8901	0.5762
1.0000	0.9437	0.8777	0.5465
1.0000	0.9442	0.8653	0.5168
1.0000	0.9348	0.8691	0.5454
1.0000	0.9255	0.8729	0.5739
1.0000	0.9161	0.8768	0.6025
1.0000	0.9068	0.8806	0.6310

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99504	0.99341	0.99178	0.99014	0.99011	0.99008	0.99005	0.99002	0.99168	0.99335	0.99501	0.99667	0.99667
0.97999	0.98124	0.98249	0.98375	0.98484	0.98593	0.98703	0.98812	0.98578	0.98343	0.98108	0.97874	0.97874
0.97161	0.97471	0.97781	0.98091	0.97990	0.97890	0.97790	0.97690	0.97480	0.97270	0.97061	0.96851	0.96851
0.95529	0.96305	0.97081	0.97857	0.97641	0.97425	0.97210	0.96994	0.96434	0.95874	0.95314	0.94753	0.94753
0.92997	0.94219	0.95441	0.96662	0.96620	0.96577	0.96535	0.96493	0.95313	0.94134	0.92955	0.91775	0.91775
0.92707	0.93901	0.95095	0.96290	0.96180	0.96071	0.95961	0.95852	0.94767	0.93682	0.92597	0.91513	0.91513
0.92473	0.93543	0.94614	0.95684	0.95532	0.95379	0.95227	0.95075	0.94157	0.93238	0.92320	0.91402	0.91402
0.92276	0.93287	0.94297	0.95308	0.95176	0.95044	0.94911	0.94779	0.93901	0.93022	0.92144	0.91266	0.91266
0.91898	0.92844	0.93790	0.94736	0.94613	0.94481	0.94349	0.94217	0.93339	0.92460	0.91582	0.90704	0.90704
0.91382	0.92232	0.93082	0.93933	0.92705	0.91478	0.90251	0.89023	0.89401	0.89778	0.90155	0.90532	0.90532
0.90677	0.91675	0.92674	0.93672	0.92310	0.90948	0.89587	0.88225	0.88588	0.88952	0.89315	0.89678	0.89678
0.90646	0.91634	0.92622	0.93610	0.92020	0.90430	0.88841	0.87251	0.87853	0.88455	0.89057	0.89658	0.89658
0.89243	0.90553	0.91863	0.93173	0.91581	0.89988	0.88396	0.86804	0.87086	0.87368	0.87651	0.87933	0.87933
0.87697	0.88075	0.88452	0.88829	0.87479	0.86129	0.84780	0.83430	0.84403	0.85375	0.86348	0.87320	0.87320
0.82233	0.83256	0.84278	0.85301	0.83368	0.81435	0.79502	0.77569	0.78479	0.79390	0.80300	0.81211	0.81211
0.80038	0.79691	0.79344	0.78997	0.77930	0.76863	0.75796	0.74729	0.76143	0.77557	0.78971	0.80385	0.80385
0.75283	0.75821	0.76359	0.76897	0.74310	0.71723	0.69136	0.66549	0.68598	0.70647	0.72696	0.74745	0.74745
0.71003	0.71058	0.71113	0.71167	0.69801	0.68434	0.67067	0.65701	0.67013	0.68325	0.69637	0.70949	0.70949
0.70089	0.70009	0.69928	0.69847	0.67677	0.65507	0.63336	0.61166	0.63417	0.65668	0.67919	0.70170	0.70170
0.67720	0.67912	0.68103	0.68294	0.65964	0.63634	0.61304	0.58974	0.61113	0.63252	0.65390	0.67529	0.67529
0.66899	0.66992	0.67085	0.67178	0.64912	0.62645	0.60379	0.58112	0.60286	0.62459	0.64632	0.66806	0.66806
0.66558	0.66704	0.66850	0.66996	0.64764	0.62531	0.60299	0.58067	0.60153	0.62239	0.64326	0.66412	0.66412
0.66326	0.66543	0.66760	0.66977	0.64243	0.61509	0.58775	0.56041	0.58558	0.61075	0.63592	0.66109	0.66109

0.93913	0.93323	0.92734	0.92145	0.90881	0.89616	0.88352	0.87087	0.88941	0.90794	0.92648	0.94502
0.93718	0.93057	0.92396	0.91735	0.90482	0.89229	0.87977	0.86724	0.88638	0.90552	0.92466	0.94380
0.91919	0.91167	0.90414	0.89662	0.88679	0.87697	0.86714	0.85732	0.87467	0.89202	0.90937	0.92672
0.90345	0.89643	0.88942	0.88240	0.87310	0.86380	0.85450	0.84521	0.86152	0.87784	0.89416	0.91047
0.89029	0.88745	0.88461	0.88177	0.87240	0.86303	0.85367	0.84430	0.85651	0.86872	0.88093	0.89314
0.87114	0.87411	0.87707	0.88004	0.87043	0.86083	0.85122	0.84162	0.84826	0.85490	0.86154	0.86818
0.86363	0.86575	0.86786	0.86998	0.86161	0.85325	0.84488	0.83652	0.84277	0.84902	0.85527	0.86152
0.85881	0.86169	0.86457	0.86744	0.85930	0.85116	0.84303	0.83489	0.84015	0.84541	0.85067	0.85593
0.85496	0.85615	0.85733	0.85851	0.85171	0.84490	0.83810	0.83129	0.83692	0.84254	0.84816	0.85378
0.85258	0.85209	0.85161	0.85112	0.84570	0.84028	0.83486	0.82944	0.83535	0.84126	0.84716	0.85307
0.84477	0.84680	0.84883	0.85086	0.84297	0.83509	0.82720	0.81932	0.82517	0.83103	0.83688	0.84274
0.82866	0.83183	0.83500	0.83817	0.83253	0.82689	0.82125	0.81561	0.81808	0.82055	0.82302	0.82549
0.82224	0.82710	0.83197	0.83684	0.82679	0.81675	0.80670	0.79666	0.80184	0.80701	0.81219	0.81737
0.79311	0.80431	0.81550	0.82670	0.81651	0.80631	0.79612	0.78593	0.78492	0.78392	0.78292	0.78191
0.78195	0.78949	0.79703	0.80456	0.78444	0.76431	0.74418	0.72405	0.73664	0.74923	0.76182	0.77442
0.73686	0.74222	0.74758	0.75293	0.74035	0.72776	0.71518	0.70259	0.70982	0.71705	0.72428	0.73150
0.72529	0.72661	0.72793	0.72926	0.71374	0.69822	0.68270	0.66718	0.68138	0.69557	0.70977	0.72396
0.70844	0.71382	0.71919	0.72457	0.69915	0.67373	0.64832	0.62290	0.64294	0.66298	0.68303	0.70307
0.68215	0.68462	0.68710	0.68958	0.67101	0.65244	0.63387	0.61530	0.63140	0.64749	0.66358	0.67967
0.67253	0.67277	0.67301	0.67324	0.65369	0.63413	0.61457	0.59502	0.61434	0.63365	0.65297	0.67229
0.66258	0.66441	0.66624	0.66807	0.64597	0.62387	0.60178	0.57968	0.59995	0.62022	0.64049	0.66075
0.65772	0.66081	0.66391	0.66700	0.64115	0.61530	0.58945	0.56360	0.58635	0.60911	0.63187	0.65463
0.65129	0.65458	0.65787	0.66116	0.63462	0.60808	0.58153	0.55499	0.57824	0.60149	0.62475	0.64800
0.64852	0.64912	0.64972	0.65033	0.62405	0.59777	0.57149	0.54521	0.57089	0.59656	0.62224	0.64791

ISER LOW CASE 1990

MONTHLY LOAD CURVE POINTS

1.0000	0.9148	0.8859	0.6318
1.0000	0.9224	0.8939	0.6321
1.0000	0.9300	0.9020	0.6324
1.0000	0.9375	0.9101	0.6328
1.0000	0.9395	0.8998	0.6049
1.0000	0.9414	0.8895	0.5769
1.0000	0.9434	0.8792	0.5490
1.0000	0.9454	0.8690	0.5211
1.0000	0.9358	0.8712	0.5487
1.0000	0.9263	0.8734	0.5763
1.0000	0.9168	0.8756	0.6039
1.0000	0.9073	0.8778	0.6314

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99524	0.99269	0.99013	0.98757	0.98840	0.98923	0.99005	0.99088	0.99261	0.99434	0.99607	0.99780	0.99780
0.98021	0.98041	0.98061	0.98082	0.98270	0.98459	0.98648	0.98836	0.98627	0.98418	0.98209	0.98000	0.98000
0.97153	0.97351	0.97550	0.97748	0.97729	0.97709	0.97690	0.97671	0.97491	0.97312	0.97133	0.96954	0.96954
0.95441	0.96047	0.96653	0.97260	0.97176	0.97093	0.97010	0.96927	0.96404	0.95881	0.95357	0.94834	0.94834
0.92876	0.93957	0.95038	0.96119	0.96208	0.96296	0.96384	0.96473	0.95303	0.94134	0.92964	0.91795	0.91795
0.92671	0.93794	0.94918	0.96042	0.96048	0.96054	0.96061	0.96067	0.94937	0.93807	0.92677	0.91547	0.91547
0.92202	0.93160	0.94118	0.95077	0.95107	0.95137	0.95167	0.95198	0.94209	0.93221	0.92232	0.91244	0.91244
0.92105	0.93061	0.94016	0.94971	0.95027	0.95083	0.95139	0.95195	0.94184	0.93173	0.92162	0.91150	0.91150
0.91581	0.92433	0.93285	0.94138	0.93790	0.93443	0.93096	0.92749	0.92244	0.91739	0.91234	0.90728	0.90728
0.91143	0.91863	0.92584	0.93304	0.92347	0.91390	0.90433	0.89476	0.89712	0.89949	0.90185	0.90422	0.90422
0.90499	0.91403	0.92306	0.93209	0.92001	0.90794	0.89587	0.88379	0.88684	0.88988	0.89292	0.89596	0.89596
0.90426	0.91329	0.92231	0.93134	0.91834	0.90533	0.89232	0.87932	0.88330	0.88728	0.89126	0.89524	0.89524
0.89125	0.90295	0.91466	0.92637	0.91318	0.89999	0.88681	0.87362	0.87510	0.87658	0.87806	0.87954	0.87954
0.87612	0.87932	0.88252	0.88572	0.87385	0.86199	0.85013	0.83827	0.84694	0.85560	0.86426	0.87292	0.87292
0.82002	0.82892	0.83783	0.84673	0.82990	0.81307	0.79624	0.77941	0.78733	0.79526	0.80319	0.81111	0.81111
0.80359	0.79938	0.79516	0.79095	0.78022	0.76949	0.75876	0.74803	0.76298	0.77792	0.79286	0.80781	0.80781
0.75026	0.75460	0.75893	0.76327	0.74070	0.71813	0.69556	0.67299	0.69122	0.70946	0.72769	0.74593	0.74593
0.71060	0.70922	0.70783	0.70645	0.69458	0.68272	0.67085	0.65899	0.67224	0.68549	0.69874	0.71198	0.71198
0.69984	0.69878	0.69771	0.69665	0.67597	0.65529	0.63460	0.61392	0.63566	0.65741	0.67915	0.70090	0.70090
0.67583	0.67695	0.67807	0.67919	0.65744	0.63568	0.61392	0.59216	0.61280	0.63343	0.65407	0.67471	0.67471
0.66860	0.66847	0.66835	0.66823	0.64763	0.62703	0.60643	0.58583	0.60655	0.62728	0.64800	0.66872	0.66872
0.66449	0.66507	0.66565	0.66622	0.64546	0.62471	0.60395	0.58319	0.60337	0.62355	0.64373	0.66391	0.66391
0.66237	0.66360	0.66484	0.66608	0.64024	0.61441	0.58858	0.56274	0.58734	0.61194	0.63653	0.66113	0.66113

0.94263	0.93667	0.93071	0.92474	0.91366	0.90257	0.89148	0.88039	0.89744	0.91449	0.93154	0.94860
0.94100	0.93364	0.92628	0.91892	0.90839	0.89787	0.88734	0.87682	0.89471	0.91259	0.93048	0.94837
0.92218	0.91511	0.90804	0.90097	0.89213	0.88329	0.87445	0.86561	0.88152	0.89743	0.91334	0.92924
0.90935	0.90132	0.89329	0.88526	0.87781	0.87035	0.86289	0.85544	0.87092	0.88641	0.90189	0.91738
0.89257	0.88974	0.88691	0.88409	0.87607	0.86806	0.86004	0.85203	0.86287	0.87371	0.88456	0.89540
0.87586	0.87786	0.87986	0.88187	0.87393	0.86599	0.85805	0.85012	0.85605	0.86199	0.86792	0.87385
0.86614	0.86868	0.87121	0.87375	0.86668	0.85960	0.85253	0.84545	0.84999	0.85453	0.85906	0.86360
0.86319	0.86582	0.86846	0.87109	0.86417	0.85725	0.85032	0.84340	0.84769	0.85198	0.85627	0.86055
0.85956	0.86044	0.86131	0.86219	0.85673	0.85128	0.84583	0.84038	0.84495	0.84953	0.85411	0.85869
0.85686	0.85609	0.85532	0.85455	0.85049	0.84643	0.84237	0.83831	0.84314	0.84797	0.85280	0.85763
0.84944	0.85072	0.85200	0.85328	0.84699	0.84071	0.83442	0.82814	0.83314	0.83815	0.84315	0.84816
0.83065	0.83399	0.83733	0.84067	0.83681	0.83294	0.82907	0.82521	0.82573	0.82626	0.82678	0.82731
0.82715	0.83137	0.83559	0.83981	0.83048	0.82115	0.81182	0.80249	0.80760	0.81271	0.81782	0.82293
0.79275	0.80283	0.81290	0.82297	0.81635	0.80973	0.80311	0.79649	0.79304	0.78958	0.78613	0.78268
0.78633	0.79337	0.80041	0.80745	0.78732	0.76719	0.74707	0.72694	0.74003	0.75312	0.76621	0.77929
0.73658	0.74100	0.74543	0.74986	0.74043	0.73101	0.72158	0.71215	0.71715	0.72215	0.72715	0.73215
0.72815	0.72890	0.72964	0.73039	0.71559	0.70080	0.68601	0.67122	0.68526	0.69931	0.71336	0.72741
0.70772	0.71219	0.71665	0.72112	0.69712	0.67312	0.64912	0.62512	0.64465	0.66419	0.68372	0.70325
0.68271	0.68393	0.68515	0.68637	0.67048	0.65459	0.63870	0.62281	0.63748	0.65215	0.66682	0.68149
0.67147	0.67104	0.67061	0.67019	0.65201	0.63383	0.61565	0.59747	0.61608	0.63468	0.65329	0.67190
0.66310	0.66416	0.66523	0.66629	0.64535	0.62440	0.60345	0.58250	0.60238	0.62227	0.64215	0.66203
0.65766	0.66016	0.66265	0.66515	0.64125	0.61736	0.59346	0.56956	0.59096	0.61236	0.63376	0.65516
0.65076	0.65293	0.65510	0.65726	0.63233	0.60740	0.58247	0.55754	0.58030	0.60307	0.62583	0.64859
0.64820	0.64792	0.64763	0.64734	0.62273	0.59812	0.57351	0.54890	0.57380	0.59869	0.62359	0.64849

ISER LOW CASE 2000

MONTHLY LOAD CURVE POINTS

1.0000	0.9165	0.8908	0.6266
1.0000	0.9268	0.9000	0.6270
1.0000	0.9371	0.9091	0.6274
1.0000	0.9474	0.9182	0.6278
1.0000	0.9473	0.9043	0.6007
1.0000	0.9472	0.8904	0.5737
1.0000	0.9471	0.8765	0.5466
1.0000	0.9470	0.8626	0.5195
1.0000	0.9358	0.8574	0.5462
1.0000	0.9266	0.8722	0.5729
1.0000	0.9164	0.8769	0.5995
1.0000	0.9062	0.8817	0.6262

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99318	0.99134	0.98950	0.98766	0.98833	0.98901	0.98968	0.99036	0.99152	0.99269	0.99386	0.99502	0.99502
0.97850	0.98154	0.98457	0.98761	0.98811	0.98860	0.98910	0.98960	0.98606	0.98253	0.97900	0.97546	0.97546
0.97312	0.97566	0.97820	0.98075	0.98036	0.97996	0.97957	0.97918	0.97703	0.97488	0.97273	0.97057	0.97057
0.95256	0.96193	0.97129	0.98065	0.97858	0.97651	0.97444	0.97237	0.96507	0.95778	0.95049	0.94320	0.94320
0.93215	0.94552	0.95890	0.97228	0.97107	0.96985	0.96864	0.96743	0.95527	0.94310	0.93094	0.91877	0.91877
0.92628	0.93925	0.95223	0.96520	0.96436	0.96353	0.96269	0.96186	0.94972	0.93758	0.92544	0.91331	0.91331
0.92443	0.93564	0.94686	0.95808	0.95653	0.95497	0.95342	0.95186	0.94220	0.93254	0.92287	0.91321	0.91321
0.92221	0.93291	0.94362	0.95432	0.95292	0.95153	0.95014	0.94874	0.93943	0.93013	0.92082	0.91151	0.91151
0.91851	0.93042	0.94233	0.95425	0.94594	0.93763	0.92932	0.92101	0.91740	0.91380	0.91020	0.90660	0.90660
0.91580	0.92579	0.93579	0.94579	0.93120	0.91661	0.90202	0.88743	0.89202	0.89662	0.90121	0.90580	0.90580
0.91076	0.92197	0.93318	0.94439	0.92887	0.91334	0.89782	0.88229	0.88661	0.89092	0.89524	0.89955	0.89955
0.90886	0.91927	0.92968	0.94009	0.92235	0.90461	0.88687	0.86912	0.87646	0.88379	0.89112	0.89845	0.89845
0.88736	0.90209	0.91682	0.93156	0.91494	0.89833	0.88172	0.86510	0.86698	0.86886	0.87074	0.87262	0.87262
0.87018	0.87425	0.87833	0.88240	0.86926	0.85612	0.84298	0.82983	0.83890	0.84797	0.85704	0.86611	0.86611
0.81515	0.82568	0.83621	0.84674	0.82851	0.81027	0.79204	0.77380	0.78151	0.78922	0.79692	0.80463	0.80463
0.79342	0.78989	0.78635	0.78282	0.77313	0.76344	0.75375	0.74406	0.75728	0.77051	0.78373	0.79695	0.79695
0.74604	0.75188	0.75773	0.76357	0.73926	0.71496	0.69065	0.66635	0.68481	0.70327	0.72173	0.74019	0.74019
0.70405	0.70464	0.70522	0.70581	0.69367	0.68153	0.66938	0.65724	0.66880	0.68036	0.69191	0.70347	0.70347
0.69367	0.69262	0.69158	0.69054	0.67126	0.65198	0.63270	0.61342	0.63374	0.65406	0.67439	0.69471	0.69471
0.67072	0.67313	0.67555	0.67796	0.65645	0.63493	0.61342	0.59190	0.61100	0.63010	0.64920	0.66830	0.66830
0.66264	0.66392	0.66519	0.66647	0.64542	0.62438	0.60334	0.58229	0.60206	0.62183	0.64160	0.66137	0.66137
0.65872	0.66043	0.66214	0.66384	0.64341	0.62298	0.60255	0.58211	0.60084	0.61957	0.63829	0.65702	0.65702
0.65604	0.65818	0.66031	0.66245	0.63719	0.61193	0.58667	0.56142	0.58454	0.60766	0.63079	0.65391	0.65391

0.93466	0.92912	0.92357	0.91802	0.90619	0.89436	0.88253	0.87070	0.88808	0.90546	0.92284	0.94021
0.93283	0.92624	0.91965	0.91306	0.90209	0.89113	0.88016	0.86920	0.88675	0.90431	0.92186	0.93942
0.91332	0.90697	0.90063	0.89428	0.88514	0.87601	0.86687	0.85773	0.87321	0.88870	0.90418	0.91967
0.90313	0.89658	0.89002	0.88346	0.87391	0.86436	0.85481	0.84526	0.86137	0.87748	0.89358	0.90969
0.88481	0.88353	0.88226	0.88098	0.87197	0.86297	0.85396	0.84495	0.85523	0.86552	0.87580	0.88608
0.86930	0.87174	0.87417	0.87661	0.86751	0.85841	0.84931	0.84021	0.84687	0.85354	0.86020	0.86686
0.85839	0.86260	0.86681	0.87101	0.86262	0.85423	0.84584	0.83745	0.84164	0.84582	0.85000	0.85419
0.85684	0.86106	0.86527	0.86948	0.86139	0.85329	0.84520	0.83710	0.84099	0.84487	0.84875	0.85263
0.85194	0.85345	0.85496	0.85647	0.84964	0.84280	0.83596	0.82913	0.83445	0.83978	0.84510	0.85043
0.85075	0.85164	0.85254	0.85343	0.84656	0.83969	0.83283	0.82596	0.83194	0.83791	0.84388	0.84986
0.84213	0.84563	0.84913	0.85264	0.84372	0.83480	0.82588	0.81696	0.82238	0.82779	0.83321	0.83863
0.82397	0.82985	0.83572	0.84160	0.83467	0.82775	0.82082	0.81390	0.81495	0.81600	0.81705	0.81810
0.82050	0.82698	0.83346	0.83994	0.82818	0.81642	0.80467	0.79291	0.79819	0.80347	0.80875	0.81403
0.78532	0.79667	0.80802	0.81937	0.81137	0.80337	0.79536	0.78736	0.78401	0.78067	0.77732	0.77397
0.77860	0.78576	0.79292	0.80008	0.78023	0.76038	0.74053	0.72068	0.73337	0.74607	0.75876	0.77145
0.73069	0.73657	0.74244	0.74831	0.73735	0.72640	0.71544	0.70448	0.70956	0.71465	0.71974	0.72482
0.72057	0.72111	0.72165	0.72219	0.70907	0.69595	0.68283	0.66970	0.68229	0.69487	0.70745	0.72004
0.70262	0.70823	0.71385	0.71947	0.69551	0.67156	0.64760	0.62365	0.64199	0.66032	0.67866	0.69700
0.67675	0.67940	0.68206	0.68471	0.66808	0.65145	0.63482	0.61819	0.63217	0.64614	0.66012	0.67410
0.66606	0.66688	0.66770	0.66852	0.65061	0.63270	0.61479	0.59687	0.61396	0.63106	0.64815	0.66524
0.65649	0.65850	0.66052	0.66254	0.64241	0.62228	0.60215	0.58202	0.60013	0.61824	0.63636	0.65447
0.65151	0.65404	0.65657	0.65911	0.63597	0.61283	0.58970	0.56656	0.58717	0.60777	0.62837	0.64897
0.64455	0.64747	0.65039	0.65332	0.62922	0.60513	0.58104	0.55695	0.57812	0.59929	0.62045	0.64162
0.64158	0.64166	0.64174	0.64182	0.61803	0.59424	0.57046	0.54667	0.57038	0.59408	0.61779	0.64149

ISER LOW CASE 2010

MONTHLY LOAD CURVE POINTS

1.0000	0.9164	0.8907	0.6259
1.0000	0.9268	0.9001	0.6261
1.0000	0.9371	0.9094	0.6263
1.0000	0.9475	0.9187	0.6266
1.0000	0.9474	0.9047	0.6000
1.0000	0.9473	0.8908	0.5734
1.0000	0.9472	0.8769	0.5468
1.0000	0.9471	0.8630	0.5202
1.0000	0.9368	0.8676	0.5466
1.0000	0.9266	0.8722	0.5729
1.0000	0.9163	0.8768	0.5993
1.0000	0.9060	0.8814	0.6257

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99306	0.99116	0.98926	0.98736	0.98814	0.98893	0.98971	0.99049	0.99161	0.99273	0.99384	0.99496	0.99496
0.97819	0.98116	0.98413	0.98709	0.98777	0.98844	0.98911	0.98979	0.98615	0.98251	0.97887	0.97523	0.97523
0.97335	0.97580	0.97826	0.98071	0.98039	0.98006	0.97974	0.97942	0.97729	0.97516	0.97303	0.97090	0.97090
0.95215	0.96151	0.97087	0.98023	0.97832	0.97640	0.97449	0.97257	0.96512	0.95768	0.95024	0.94279	0.94279
0.93245	0.94571	0.95898	0.97224	0.97111	0.96997	0.96883	0.96770	0.95557	0.94344	0.93131	0.91918	0.91918
0.92615	0.93919	0.95223	0.96527	0.96457	0.96387	0.96317	0.96247	0.95013	0.93779	0.92545	0.91311	0.91311
0.92433	0.93565	0.94696	0.95828	0.95674	0.95520	0.95367	0.95213	0.94235	0.93258	0.92280	0.91302	0.91302
0.92170	0.93259	0.94349	0.95438	0.95311	0.95184	0.95057	0.94930	0.93968	0.93005	0.92043	0.91081	0.91081
0.91827	0.92997	0.94166	0.95336	0.94532	0.93728	0.92925	0.92121	0.91755	0.91390	0.91024	0.90658	0.90658
0.91528	0.92547	0.93565	0.94584	0.93127	0.91671	0.90214	0.88758	0.89196	0.89634	0.90072	0.90510	0.90510
0.91099	0.92225	0.93351	0.94476	0.92919	0.91362	0.89805	0.88248	0.88679	0.89111	0.89542	0.89974	0.89974
0.90898	0.91947	0.92997	0.94046	0.92271	0.90496	0.88721	0.86946	0.87672	0.88397	0.89122	0.89848	0.89848
0.88652	0.90119	0.91585	0.93052	0.91423	0.89793	0.88164	0.86535	0.86698	0.86860	0.87023	0.87186	0.87186
0.86929	0.87333	0.87738	0.88142	0.86850	0.85557	0.84265	0.82973	0.83861	0.84749	0.85637	0.86525	0.86525
0.81405	0.82448	0.83490	0.84532	0.82749	0.80966	0.79183	0.77399	0.78140	0.78881	0.79622	0.80363	0.80363
0.79293	0.78931	0.78569	0.78206	0.77248	0.76291	0.75333	0.74375	0.75695	0.77015	0.78335	0.79655	0.79655
0.74494	0.75073	0.75651	0.76230	0.73854	0.71477	0.69101	0.66725	0.68522	0.70320	0.72118	0.73915	0.73915
0.70338	0.70376	0.70414	0.70453	0.69276	0.68099	0.66922	0.65745	0.66884	0.68022	0.69161	0.70299	0.70299
0.69267	0.69157	0.69048	0.68938	0.67050	0.65161	0.63273	0.61385	0.63383	0.65381	0.67378	0.69376	0.69376
0.66977	0.67216	0.67454	0.67693	0.65580	0.63467	0.61353	0.59240	0.61114	0.62989	0.64863	0.66738	0.66738
0.66181	0.66301	0.66421	0.66542	0.64477	0.62412	0.60347	0.58283	0.60227	0.62172	0.64116	0.66061	0.66061
0.65777	0.65942	0.66107	0.66272	0.64270	0.62268	0.60267	0.58265	0.60101	0.61938	0.63775	0.65612	0.65612
0.65505	0.65707	0.65909	0.66111	0.63628	0.61145	0.58661	0.56178	0.58459	0.60741	0.63022	0.65303	0.65303

0.93469	0.92912	0.92354	0.91796	0.90639	0.89481	0.88324	0.87167	0.88882	0.90597	0.92312	0.94027
0.93254	0.92593	0.91932	0.91272	0.90214	0.89157	0.88099	0.87042	0.88760	0.90478	0.92196	0.93914
0.91295	0.90678	0.90062	0.89446	0.88550	0.87654	0.86758	0.85863	0.87375	0.88887	0.90399	0.91911
0.90372	0.89715	0.89057	0.88400	0.87458	0.86516	0.85575	0.84633	0.86232	0.87831	0.89431	0.91030
0.88449	0.88349	0.88249	0.88149	0.87257	0.86365	0.85473	0.84581	0.85573	0.86565	0.87558	0.88550
0.86941	0.87156	0.87371	0.87586	0.86713	0.85839	0.84966	0.84092	0.84751	0.85409	0.86068	0.86726
0.85811	0.86266	0.86722	0.87178	0.86345	0.85513	0.84681	0.83848	0.84225	0.84602	0.84978	0.85355
0.85697	0.86124	0.86552	0.86980	0.86191	0.85402	0.84613	0.83824	0.84185	0.84547	0.84908	0.85269
0.85206	0.85357	0.85508	0.85660	0.84990	0.84320	0.83651	0.82981	0.83500	0.84018	0.84536	0.85055
0.85089	0.85191	0.85292	0.85394	0.84708	0.84022	0.83336	0.82650	0.83234	0.83819	0.84403	0.84988
0.84229	0.84591	0.84953	0.85314	0.84426	0.83537	0.82649	0.81761	0.82287	0.82814	0.83341	0.83868
0.82361	0.82982	0.83602	0.84222	0.83534	0.82846	0.82159	0.81471	0.81538	0.81606	0.81674	0.81741
0.82079	0.82738	0.83398	0.84057	0.82870	0.81683	0.80496	0.79309	0.79837	0.80364	0.80892	0.81419
0.78435	0.79560	0.80685	0.81810	0.81073	0.80337	0.79600	0.78864	0.78475	0.78087	0.77699	0.77310
0.77865	0.78571	0.79277	0.79983	0.78002	0.76021	0.74039	0.72058	0.73333	0.74608	0.75883	0.77159
0.72990	0.73574	0.74158	0.74742	0.73699	0.72656	0.71613	0.70570	0.71029	0.71488	0.71948	0.72407
0.72030	0.72068	0.72107	0.72145	0.70869	0.69593	0.68316	0.67040	0.68277	0.69515	0.70753	0.71991
0.70181	0.70736	0.71291	0.71847	0.69484	0.67121	0.64758	0.62395	0.64203	0.66011	0.67818	0.69626
0.67614	0.67868	0.68122	0.68376	0.66765	0.65153	0.63542	0.61930	0.63288	0.64645	0.66002	0.67359
0.66514	0.66597	0.66679	0.66761	0.65004	0.63247	0.61490	0.59733	0.61408	0.63083	0.64758	0.66432
0.65575	0.65768	0.65961	0.66154	0.64180	0.62206	0.60232	0.58258	0.60039	0.61820	0.63601	0.65382
0.65076	0.65319	0.65563	0.65807	0.63543	0.61279	0.59015	0.56752	0.58772	0.60792	0.62812	0.64832
0.64366	0.64642	0.64918	0.65195	0.62832	0.60469	0.58107	0.55744	0.57831	0.59917	0.62003	0.64090
0.64067	0.64060	0.64053	0.64046	0.61715	0.59383	0.57052	0.54721	0.57059	0.59398	0.61736	0.64075

ISER MIDDLE CASE 1980

MONTHLY LOAD CURVE POINTS

1.0000	0.9157	0.8892	0.6322
1.0000	0.9246	0.8977	0.6333
1.0000	0.9335	0.9063	0.6345
1.0000	0.9424	0.9149	0.6356
1.0000	0.9429	0.9025	0.6059
1.0000	0.9433	0.8901	0.5762
1.0000	0.9437	0.8777	0.5465
1.0000	0.9442	0.8653	0.5168
1.0000	0.9348	0.8691	0.5454
1.0000	0.9255	0.8729	0.5739
1.0000	0.9161	0.8768	0.6025
1.0000	0.9068	0.8806	0.6310

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99504	0.99341	0.99178	0.99014	0.99011	0.99008	0.99005	0.99002	0.99168	0.99335	0.99501	0.99667	
0.97999	0.98124	0.98249	0.98375	0.98484	0.98593	0.98703	0.98812	0.98578	0.98343	0.98108	0.97874	
0.97161	0.97471	0.97781	0.98091	0.97990	0.97890	0.97790	0.97690	0.97480	0.97270	0.97061	0.96851	
0.95529	0.96305	0.97081	0.97857	0.97641	0.97425	0.97210	0.96994	0.96434	0.95874	0.95314	0.94753	
0.92997	0.94219	0.95441	0.96662	0.96620	0.96577	0.96535	0.96493	0.95313	0.94134	0.92955	0.91775	
0.92707	0.93901	0.95095	0.96290	0.96180	0.96071	0.95961	0.95852	0.94767	0.93682	0.92597	0.91513	
0.92473	0.93543	0.94614	0.95684	0.95532	0.95379	0.95227	0.95075	0.94157	0.93238	0.92320	0.91402	
0.92276	0.93287	0.94297	0.95308	0.95176	0.95044	0.94911	0.94779	0.93901	0.93022	0.92144	0.91266	
0.91898	0.92844	0.93790	0.94736	0.94131	0.93526	0.92921	0.92316	0.91975	0.91634	0.91292	0.90951	
0.91382	0.92232	0.93082	0.93933	0.92705	0.91478	0.90251	0.89023	0.89401	0.89778	0.90155	0.90532	
0.90677	0.91675	0.92674	0.93672	0.92310	0.90948	0.89587	0.88225	0.88588	0.88952	0.89315	0.89678	
0.90646	0.91634	0.92622	0.93610	0.92020	0.90430	0.88841	0.87251	0.87853	0.88455	0.89057	0.89658	
0.89243	0.90553	0.91863	0.93173	0.91581	0.89988	0.88396	0.86804	0.87086	0.87368	0.87651	0.87933	
0.87697	0.88075	0.88452	0.88829	0.87479	0.86129	0.84780	0.83430	0.84403	0.85375	0.86348	0.87320	
0.82233	0.83256	0.84278	0.85301	0.83368	0.81435	0.79502	0.77569	0.78479	0.79390	0.80300	0.81211	
0.80038	0.79691	0.79344	0.78997	0.77930	0.76863	0.75796	0.74729	0.76143	0.77557	0.78971	0.80385	
0.75283	0.75821	0.76359	0.76897	0.74310	0.71723	0.69136	0.66549	0.68598	0.70647	0.72696	0.74745	
0.71003	0.71058	0.71113	0.71167	0.69801	0.68434	0.67067	0.65701	0.67013	0.68325	0.69637	0.70949	
0.70089	0.70009	0.69928	0.69847	0.67677	0.65507	0.63336	0.61166	0.63417	0.65668	0.67919	0.70170	
0.67720	0.67912	0.68103	0.68294	0.65964	0.63634	0.61304	0.58974	0.61113	0.63252	0.65390	0.67529	
0.66899	0.66992	0.67085	0.67178	0.64912	0.62645	0.60379	0.58112	0.60286	0.62459	0.64632	0.66806	
0.66558	0.66704	0.66850	0.66996	0.64764	0.62531	0.60299	0.58067	0.60153	0.62239	0.64326	0.66412	
0.66326	0.66543	0.66760	0.66977	0.64243	0.61509	0.58775	0.56041	0.58558	0.61075	0.63592	0.66109	

0.93913	0.93323	0.92734	0.92145	0.90881	0.89616	0.88352	0.87087	0.88941	0.90794	0.92648	0.94502
0.93718	0.93057	0.92396	0.91735	0.90482	0.89229	0.87977	0.86724	0.88638	0.90552	0.92466	0.94380
0.91919	0.91167	0.90414	0.89662	0.88679	0.87697	0.86714	0.85732	0.87467	0.89202	0.90937	0.92672
0.90345	0.89643	0.88942	0.88240	0.87310	0.86380	0.85450	0.84521	0.86152	0.87784	0.89416	0.91047
0.89029	0.88745	0.88461	0.88177	0.87240	0.86303	0.85367	0.84430	0.85651	0.86872	0.88093	0.89314
0.87114	0.87411	0.87707	0.88004	0.87043	0.86083	0.85122	0.84162	0.84826	0.85490	0.86154	0.86818
0.86363	0.86575	0.86786	0.86998	0.86161	0.85325	0.84488	0.83652	0.84277	0.84902	0.85527	0.86152
0.85881	0.86169	0.86457	0.86744	0.85930	0.85116	0.84303	0.83489	0.84015	0.84541	0.85067	0.85593
0.85496	0.85615	0.85733	0.85851	0.85171	0.84490	0.83810	0.83129	0.83692	0.84254	0.84816	0.85378
0.85258	0.85209	0.85161	0.85112	0.84570	0.84028	0.83486	0.82944	0.83535	0.84126	0.84716	0.85307
0.84477	0.84680	0.84883	0.85086	0.84297	0.83509	0.82720	0.81932	0.82517	0.83103	0.83688	0.84274
0.82866	0.83183	0.83500	0.83817	0.83253	0.82689	0.82125	0.81561	0.81808	0.82055	0.82302	0.82549
0.82224	0.82710	0.83197	0.83684	0.82679	0.81675	0.80670	0.79666	0.80184	0.80701	0.81219	0.81737
0.79311	0.80431	0.81550	0.82670	0.81651	0.80631	0.79612	0.78593	0.78492	0.78392	0.78292	0.78191
0.78195	0.78949	0.79703	0.80456	0.78444	0.76431	0.74418	0.72405	0.73664	0.74923	0.76182	0.77442
0.73686	0.74222	0.74758	0.75293	0.74035	0.72776	0.71518	0.70259	0.70982	0.71705	0.72428	0.73150
0.72529	0.72661	0.72793	0.72926	0.71374	0.69822	0.68270	0.66718	0.68138	0.69557	0.70977	0.72396
0.70844	0.71382	0.71919	0.72457	0.69915	0.67373	0.64832	0.62290	0.64294	0.66298	0.68303	0.70307
0.68215	0.68462	0.68710	0.68958	0.67101	0.65244	0.63387	0.61530	0.63140	0.64749	0.66358	0.67967
0.67253	0.67277	0.67301	0.67324	0.65369	0.63413	0.61457	0.59502	0.61434	0.63365	0.65297	0.67229
0.66258	0.66441	0.66624	0.66807	0.64597	0.62387	0.60178	0.57968	0.59995	0.62022	0.64049	0.66075
0.65772	0.66081	0.66391	0.66700	0.64115	0.61530	0.58945	0.56360	0.58635	0.60911	0.63187	0.65463
0.65129	0.65458	0.65787	0.66116	0.63462	0.60808	0.58153	0.55499	0.57824	0.60149	0.62475	0.64800
0.64852	0.64912	0.64972	0.65033	0.62405	0.59777	0.57149	0.54521	0.57089	0.59656	0.62224	0.64791

ISER MIDDLE CASE 1990

MONTHLY LOAD CURVE POINTS

1.0000	0.9159	0.8908	0.6283
1.0000	0.9259	0.8994	0.6290
1.0000	0.9359	0.9080	0.6297
1.0000	0.9460	0.9166	0.6304
1.0000	0.9461	0.9031	0.6024
1.0000	0.9463	0.8896	0.5743
1.0000	0.9464	0.8761	0.5463
1.0000	0.9466	0.8626	0.5182
1.0000	0.9364	0.8675	0.5455
1.0000	0.9262	0.8724	0.5729
1.0000	0.9160	0.8773	0.6002
1.0000	0.9058	0.8821	0.6276

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99368	0.99202	0.99035	0.98869	0.98905	0.98942	0.98979	0.99015	0.99145	0.99275	0.99405	0.99535	0.99535
0.97900	0.98177	0.98453	0.98730	0.98776	0.98822	0.98869	0.98915	0.98592	0.98269	0.97946	0.97624	0.97624
0.97260	0.97534	0.97807	0.98081	0.98025	0.97968	0.97912	0.97856	0.97638	0.97421	0.97204	0.96986	0.96986
0.95345	0.96257	0.97169	0.98081	0.97855	0.97628	0.97402	0.97176	0.96490	0.95805	0.95119	0.94434	0.94434
0.93114	0.94458	0.95801	0.97145	0.97027	0.96910	0.96792	0.96675	0.95449	0.94223	0.92997	0.91771	0.91771
0.92648	0.93924	0.95200	0.96476	0.96373	0.96270	0.96167	0.96064	0.94891	0.93718	0.92545	0.91372	0.91372
0.92422	0.93518	0.94613	0.95708	0.95566	0.95424	0.95282	0.95139	0.94186	0.93233	0.92280	0.91327	0.91327
0.92386	0.93451	0.94515	0.95580	0.95384	0.95188	0.94992	0.94796	0.93927	0.93058	0.92190	0.91321	0.91321
0.91862	0.93009	0.94157	0.95304	0.94505	0.93706	0.92908	0.92109	0.91760	0.91412	0.91064	0.90715	0.90715
0.91598	0.92556	0.93515	0.94474	0.93047	0.91621	0.90194	0.88768	0.89235	0.89703	0.90171	0.90639	0.90639
0.90986	0.92084	0.93181	0.94279	0.92761	0.91244	0.89726	0.88208	0.88628	0.89048	0.89468	0.89888	0.89888
0.90817	0.91824	0.92831	0.93838	0.92110	0.90382	0.88653	0.86925	0.87646	0.88367	0.89089	0.89810	0.89810
0.88925	0.90398	0.91872	0.93345	0.91640	0.89935	0.88230	0.86525	0.86757	0.86989	0.87220	0.87452	0.87452
0.87223	0.87629	0.88035	0.88441	0.87096	0.85752	0.84407	0.83062	0.84001	0.84940	0.85878	0.86817	0.86817
0.81750	0.82811	0.83871	0.84932	0.83046	0.81160	0.79274	0.77388	0.78213	0.79039	0.79864	0.80689	0.80689
0.79502	0.79160	0.78817	0.78475	0.77479	0.76482	0.75486	0.74490	0.75828	0.77167	0.78505	0.79844	0.79844
0.74831	0.75415	0.75999	0.76584	0.74067	0.71551	0.69034	0.66518	0.68450	0.70383	0.72315	0.74247	0.74247
0.70571	0.70652	0.70734	0.70815	0.69535	0.68255	0.66975	0.65694	0.66893	0.68092	0.69291	0.70489	0.70489
0.69588	0.69494	0.69399	0.69305	0.67295	0.65285	0.63275	0.61265	0.63369	0.65474	0.67578	0.69683	0.69683
0.67276	0.67513	0.67750	0.67987	0.65765	0.63543	0.61321	0.59099	0.61084	0.63069	0.65054	0.67039	0.67039
0.66453	0.66583	0.66714	0.66845	0.64676	0.62508	0.60339	0.58171	0.60209	0.62246	0.64284	0.66322	0.66322
0.66082	0.66255	0.66427	0.66600	0.64476	0.62353	0.60230	0.58107	0.60058	0.62008	0.63959	0.65910	0.65910
0.65826	0.66054	0.66282	0.66509	0.63903	0.61297	0.58691	0.56084	0.58463	0.60841	0.63219	0.65598	0.65598

0.93515	0.92963	0.92411	0.91859	0.90634	0.89409	0.88184	0.86959	0.88736	0.90513	0.92290	0.94067
0.93396	0.92734	0.92072	0.91409	0.90244	0.89078	0.87912	0.86747	0.88575	0.90402	0.92230	0.94058
0.91463	0.90789	0.90115	0.89441	0.88496	0.87551	0.86606	0.85661	0.87280	0.88899	0.90518	0.92137
0.90244	0.89581	0.88919	0.88256	0.87292	0.86328	0.85364	0.84400	0.86027	0.87653	0.89280	0.90907
0.88592	0.88402	0.88212	0.88022	0.87112	0.86203	0.85293	0.84383	0.85482	0.86582	0.87682	0.88782
0.86950	0.87245	0.87539	0.87833	0.86864	0.85895	0.84926	0.83957	0.84632	0.85306	0.85981	0.86656
0.85941	0.86279	0.86617	0.86956	0.86119	0.85283	0.84446	0.83610	0.84108	0.84606	0.85105	0.85603
0.85706	0.86109	0.86513	0.86917	0.86074	0.85230	0.84387	0.83544	0.83983	0.84423	0.84862	0.85302
0.85213	0.85363	0.85512	0.85661	0.84962	0.84262	0.83563	0.82863	0.83414	0.83964	0.84514	0.85064
0.85090	0.85140	0.85191	0.85241	0.84577	0.83914	0.83250	0.82586	0.83199	0.83813	0.84426	0.85039
0.84231	0.84547	0.84863	0.85179	0.84298	0.83417	0.82536	0.81655	0.82220	0.82785	0.83350	0.83915
0.82508	0.83016	0.83524	0.84032	0.83354	0.82677	0.81999	0.81321	0.81491	0.81660	0.81830	0.82000
0.82040	0.82650	0.83260	0.83870	0.82734	0.81598	0.80462	0.79326	0.79852	0.80378	0.80904	0.81431
0.78760	0.79905	0.81050	0.82194	0.81287	0.80380	0.79473	0.78566	0.78328	0.78091	0.77853	0.77616
0.77903	0.78636	0.79368	0.80101	0.78108	0.76115	0.74122	0.72129	0.73390	0.74650	0.75910	0.77171
0.73251	0.73835	0.74419	0.75003	0.73821	0.72640	0.71458	0.70277	0.70875	0.71472	0.72070	0.72667
0.72158	0.72242	0.72325	0.72409	0.71019	0.69629	0.68240	0.66850	0.68156	0.69462	0.70768	0.72075
0.70439	0.71005	0.71571	0.72137	0.69682	0.67227	0.64772	0.62317	0.64206	0.66095	0.67984	0.69873
0.67824	0.68100	0.68376	0.68652	0.66900	0.65149	0.63397	0.61645	0.63121	0.64597	0.66073	0.67548
0.66806	0.66880	0.66953	0.67027	0.65171	0.63316	0.61460	0.59605	0.61387	0.63169	0.64951	0.66733
0.65822	0.66031	0.66240	0.66450	0.64362	0.62275	0.60188	0.58101	0.59979	0.61857	0.63735	0.65613
0.65328	0.65601	0.65874	0.66147	0.63735	0.61323	0.58911	0.56499	0.58638	0.60777	0.62916	0.65055
0.64654	0.64972	0.65289	0.65606	0.63106	0.60607	0.58107	0.55608	0.57790	0.59972	0.62155	0.64337
0.64364	0.64397	0.64431	0.64464	0.61993	0.59522	0.57052	0.54581	0.57018	0.59456	0.61893	0.64330

ISER MIDDLE CASE 2000

MONTHLY LOAD CURVE POINTS

1.0000	0.9162	0.8930	0.6248
1.0000	0.9277	0.9030	0.6253
1.0000	0.9392	0.9129	0.6258
1.0000	0.9507	0.9229	0.6263
1.0000	0.9497	0.9069	0.5994
1.0000	0.9488	0.8910	0.5724
1.0000	0.9478	0.8750	0.5455
1.0000	0.9468	0.8591	0.5186
1.0000	0.9363	0.8651	0.5450
1.0000	0.9257	0.8710	0.5715
1.0000	0.9152	0.8770	0.5979
1.0000	0.9046	0.8830	0.6244

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99337	0.99270	0.99204	0.99137	0.99106	0.99075	0.99045	0.99014	0.99111	0.99209	0.99306	0.99404	0.99404
0.97739	0.98089	0.98439	0.98789	0.98840	0.98892	0.98944	0.98996	0.98594	0.98193	0.97791	0.97389	0.97389
0.97400	0.97724	0.98048	0.98372	0.98278	0.98184	0.98091	0.97997	0.97767	0.97537	0.97307	0.97076	0.97076
0.95127	0.96108	0.97089	0.98070	0.97888	0.97705	0.97522	0.97340	0.96541	0.95743	0.94944	0.94146	0.94146
0.93393	0.94815	0.96237	0.97660	0.97453	0.97245	0.97038	0.96831	0.95616	0.94401	0.93185	0.91970	0.91970
0.92696	0.94018	0.95339	0.96660	0.96547	0.96434	0.96320	0.96207	0.94999	0.93791	0.92583	0.91375	0.91375
0.92548	0.93733	0.94919	0.96104	0.95873	0.95641	0.95409	0.95178	0.94224	0.93270	0.92316	0.91363	0.91363
0.92176	0.93414	0.94651	0.95889	0.95602	0.95314	0.95026	0.94739	0.93789	0.92838	0.91888	0.90938	0.90938
0.91949	0.93163	0.94377	0.95592	0.94658	0.93725	0.92791	0.91858	0.91577	0.91296	0.91016	0.90735	0.90735
0.91666	0.92790	0.93915	0.95040	0.93398	0.91756	0.90113	0.88471	0.88989	0.89506	0.90023	0.90541	0.90541
0.91269	0.92471	0.93672	0.94874	0.93199	0.91524	0.89849	0.88174	0.88647	0.89121	0.89594	0.90067	0.90067
0.91087	0.92223	0.93360	0.94496	0.92506	0.90516	0.88525	0.86535	0.87389	0.88243	0.89097	0.89950	0.89950
0.88573	0.90115	0.91657	0.93200	0.91448	0.89696	0.87944	0.86193	0.86402	0.86612	0.86821	0.87030	0.87030
0.86827	0.87266	0.87706	0.88145	0.86779	0.85412	0.84046	0.82679	0.83606	0.84533	0.85460	0.86387	0.86387
0.81369	0.82485	0.83601	0.84718	0.82832	0.80947	0.79061	0.77176	0.77945	0.78714	0.79483	0.80252	0.80252
0.78975	0.78650	0.78324	0.77999	0.77066	0.76133	0.75200	0.74267	0.75526	0.76784	0.78042	0.79300	0.79300
0.74475	0.75118	0.75760	0.76403	0.73893	0.71384	0.68875	0.66365	0.68232	0.70099	0.71966	0.73833	0.73833
0.70174	0.70312	0.70451	0.70590	0.69354	0.68118	0.66882	0.65646	0.66744	0.67841	0.68938	0.70035	0.70035
0.69160	0.69058	0.68957	0.68856	0.66968	0.65080	0.63192	0.61304	0.63294	0.65283	0.67272	0.69261	0.69261
0.66901	0.67191	0.67482	0.67772	0.65619	0.63466	0.61314	0.59161	0.61023	0.62886	0.64748	0.66611	0.66611
0.66057	0.66239	0.66421	0.66603	0.64498	0.62394	0.60289	0.58184	0.60107	0.62030	0.63952	0.65875	0.65875
0.65677	0.65891	0.66106	0.66320	0.64253	0.62186	0.60119	0.58052	0.59904	0.61757	0.63610	0.65462	0.65462
0.65390	0.65641	0.65892	0.66143	0.63628	0.61112	0.58597	0.56081	0.58345	0.60610	0.62875	0.65139	0.65139

0.93172	0.92632	0.92091	0.91551	0.90333	0.89116	0.87898	0.86681	0.88439	0.90197	0.91955	0.93713
0.92981	0.92353	0.91725	0.91098	0.89972	0.88847	0.87722	0.86596	0.88349	0.90102	0.91855	0.93609
0.91014	0.90398	0.89783	0.89168	0.88238	0.87308	0.86378	0.85448	0.86993	0.88538	0.90084	0.91629
0.90050	0.89450	0.88850	0.88250	0.87238	0.86225	0.85213	0.84200	0.85813	0.87425	0.89038	0.90650
0.88199	0.88117	0.88036	0.87954	0.86994	0.86034	0.85074	0.84114	0.85156	0.86197	0.87239	0.88281
0.86668	0.86941	0.87214	0.87487	0.86523	0.85560	0.84596	0.83632	0.84323	0.85014	0.85704	0.86395
0.85582	0.86074	0.86567	0.87059	0.86154	0.85248	0.84343	0.83437	0.83850	0.84263	0.84676	0.85089
0.85406	0.85860	0.86315	0.86769	0.85930	0.85091	0.84252	0.83413	0.83798	0.84182	0.84567	0.84951
0.84920	0.85087	0.85254	0.85421	0.84685	0.83948	0.83212	0.82475	0.83045	0.83614	0.84184	0.84753
0.84811	0.84979	0.85148	0.85316	0.84520	0.83724	0.82927	0.82131	0.82759	0.83387	0.84014	0.84642
0.83910	0.84328	0.84746	0.85164	0.84189	0.83215	0.82240	0.81265	0.81822	0.82379	0.82935	0.83492
0.82155	0.82823	0.83491	0.84159	0.83357	0.82555	0.81752	0.80950	0.81084	0.81218	0.81352	0.81486
0.81781	0.82508	0.83236	0.83963	0.82707	0.81450	0.80194	0.78937	0.79466	0.79995	0.80524	0.81053
0.78283	0.79469	0.80655	0.81841	0.80971	0.80100	0.79229	0.78359	0.78043	0.77728	0.77412	0.77097
0.77561	0.78285	0.79010	0.79734	0.77761	0.75787	0.73814	0.71840	0.73089	0.74338	0.75588	0.76837
0.72867	0.73510	0.74154	0.74797	0.73629	0.72461	0.71293	0.70125	0.70650	0.71174	0.71699	0.72223
0.71775	0.71827	0.71879	0.71931	0.70669	0.69407	0.68146	0.66884	0.68094	0.69303	0.70513	0.71723
0.70086	0.70694	0.71301	0.71909	0.69505	0.67102	0.64698	0.62295	0.64091	0.65887	0.67683	0.69479
0.67462	0.67785	0.68108	0.68431	0.66726	0.65020	0.63315	0.61609	0.62992	0.64374	0.65756	0.67138
0.66423	0.66552	0.66681	0.66811	0.65020	0.63228	0.61437	0.59646	0.61308	0.62970	0.64632	0.66294
0.65425	0.65676	0.65928	0.66179	0.64175	0.62171	0.60166	0.58162	0.59915	0.61668	0.63420	0.65173
0.64923	0.65171	0.65419	0.65667	0.63377	0.61088	0.58798	0.56508	0.58550	0.60592	0.62633	0.64675
0.64243	0.64569	0.64895	0.65221	0.62830	0.60439	0.58047	0.55656	0.57721	0.59786	0.61851	0.63916
0.63925	0.63953	0.63982	0.64010	0.61648	0.59286	0.56925	0.54563	0.56896	0.59229	0.61563	0.63896

ISER MIDDLE CASE 2010

MONTHLY LOAD CURVE POINTS

1.0000	0.9182	0.8954	0.6223
1.0000	0.9310	0.9061	0.6229
1.0000	0.9437	0.9168	0.6235
1.0000	0.9565	0.9276	0.6240
1.0000	0.9540	0.9091	0.5974
1.0000	0.9515	0.8906	0.5709
1.0000	0.9491	0.8722	0.5443
1.0000	0.9466	0.8537	0.5177
1.0000	0.9364	0.8614	0.5437
1.0000	0.9261	0.8692	0.5697
1.0000	0.9158	0.8769	0.5958
1.0000	0.9055	0.8847	0.6218

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99366	0.99503	0.99640	0.99777	0.99601	0.99424	0.99247	0.99071	0.99110	0.99149	0.99189	0.99228	0.99228
0.97592	0.98023	0.98455	0.98887	0.98909	0.98931	0.98953	0.98975	0.98522	0.98068	0.97614	0.97160	0.97160
0.97532	0.97955	0.98379	0.98802	0.98638	0.98473	0.98308	0.98144	0.97885	0.97626	0.97367	0.97108	0.97108
0.94977	0.96119	0.97261	0.98404	0.98183	0.97963	0.97743	0.97523	0.96601	0.95679	0.94757	0.93835	0.93835
0.93679	0.95146	0.96612	0.98078	0.97806	0.97533	0.97261	0.96989	0.95795	0.94601	0.93407	0.92213	0.92213
0.92872	0.94221	0.95570	0.96920	0.96757	0.96594	0.96431	0.96268	0.95082	0.93895	0.92709	0.91522	0.91522
0.92763	0.94071	0.95379	0.96687	0.96305	0.95922	0.95539	0.95157	0.94231	0.93306	0.92381	0.91455	0.91455
0.92351	0.93777	0.95203	0.96629	0.96106	0.95584	0.95061	0.94539	0.93635	0.92732	0.91828	0.90924	0.90924
0.91877	0.93198	0.94518	0.95839	0.94749	0.93659	0.92570	0.91480	0.91249	0.91018	0.90787	0.90556	0.90556
0.91828	0.93165	0.94502	0.95838	0.93895	0.91952	0.90008	0.88065	0.88671	0.89278	0.89884	0.90491	0.90491
0.91658	0.92984	0.94310	0.95637	0.93739	0.91842	0.89945	0.88048	0.88619	0.89189	0.89760	0.90331	0.90331
0.91477	0.92766	0.94055	0.95344	0.92990	0.90635	0.88280	0.85925	0.86991	0.88056	0.89122	0.90188	0.90188
0.88283	0.89932	0.91582	0.93232	0.91348	0.89464	0.87580	0.85696	0.85930	0.86165	0.86399	0.86633	0.86633
0.86489	0.86987	0.87485	0.87983	0.86536	0.85090	0.83643	0.82196	0.83145	0.84094	0.85043	0.85991	0.85991
0.81109	0.82327	0.83545	0.84762	0.82779	0.80797	0.78814	0.76831	0.77596	0.78361	0.79126	0.79891	0.79891
0.78391	0.78110	0.77830	0.77550	0.76677	0.75805	0.74933	0.74061	0.75213	0.76366	0.77519	0.78671	0.78671
0.74272	0.75007	0.75741	0.76475	0.73845	0.71216	0.68586	0.65956	0.67852	0.69747	0.71643	0.73538	0.73538
0.69830	0.70091	0.70353	0.70614	0.69352	0.68090	0.66828	0.65567	0.66567	0.67568	0.68568	0.69569	0.69569
0.68848	0.68748	0.68648	0.68548	0.66732	0.64916	0.63100	0.61284	0.63200	0.65116	0.67032	0.68948	0.68948
0.66656	0.67026	0.67395	0.67765	0.65610	0.63455	0.61300	0.59145	0.60931	0.62716	0.64501	0.66287	0.66287
0.65762	0.66030	0.66298	0.66566	0.64456	0.62347	0.60238	0.58128	0.59970	0.61811	0.63653	0.65494	0.65494
0.65395	0.65678	0.65962	0.66245	0.64140	0.62035	0.59930	0.57825	0.59647	0.61468	0.63290	0.65111	0.65111
0.65073	0.65379	0.65685	0.65991	0.63493	0.60995	0.58497	0.55999	0.58191	0.60383	0.62575	0.64767	0.64767

0.92714	0.92196	0.91678	0.91160	0.89907	0.88654	0.87401	0.86149	0.87920	0.89691	0.91462	0.93233
0.92491	0.91915	0.91338	0.90762	0.89601	0.88440	0.87279	0.86118	0.87855	0.89592	0.91330	0.93067
0.90495	0.89924	0.89353	0.88782	0.87837	0.86893	0.85948	0.85003	0.86519	0.88034	0.89550	0.91066
0.89704	0.89192	0.88681	0.88170	0.87078	0.85986	0.84894	0.83802	0.85405	0.87008	0.88612	0.90215
0.87751	0.87767	0.87782	0.87798	0.86730	0.85663	0.84595	0.83527	0.84579	0.85631	0.86683	0.87735
0.86320	0.86614	0.86907	0.87200	0.86168	0.85136	0.84104	0.83072	0.83811	0.84550	0.85288	0.86027
0.85176	0.85812	0.86448	0.87083	0.86077	0.85071	0.84065	0.83059	0.83430	0.83800	0.84170	0.84541
0.85028	0.85533	0.86037	0.86541	0.85644	0.84747	0.83849	0.82952	0.83345	0.83738	0.84131	0.84524
0.84623	0.84870	0.85117	0.85364	0.84480	0.83597	0.82713	0.81830	0.82466	0.83103	0.83739	0.84376
0.84399	0.84636	0.84873	0.85111	0.84183	0.83256	0.82328	0.81401	0.82091	0.82781	0.83471	0.84161
0.83494	0.84023	0.84551	0.85080	0.83964	0.82848	0.81732	0.80616	0.81203	0.81791	0.82378	0.82966
0.81783	0.82605	0.83426	0.84248	0.83257	0.82267	0.81276	0.80285	0.80454	0.80623	0.80792	0.80962
0.81417	0.82279	0.83141	0.84003	0.82597	0.81191	0.79784	0.78378	0.78922	0.79467	0.80011	0.80555
0.77877	0.79141	0.80405	0.81669	0.80706	0.79743	0.78779	0.77816	0.77515	0.77214	0.76913	0.76612
0.77132	0.77863	0.78594	0.79325	0.77367	0.75409	0.73452	0.71494	0.72721	0.73948	0.75174	0.76401
0.72565	0.73292	0.74020	0.74748	0.73477	0.72207	0.70937	0.69667	0.70209	0.70752	0.71294	0.71837
0.71455	0.71592	0.71728	0.71865	0.70601	0.69337	0.68073	0.66809	0.67937	0.69064	0.70191	0.71319
0.69744	0.70325	0.70906	0.71487	0.69172	0.66857	0.64542	0.62227	0.63961	0.65695	0.67429	0.69163
0.67159	0.67568	0.67977	0.68387	0.66624	0.64861	0.63099	0.61336	0.62689	0.64043	0.65396	0.66749
0.66160	0.66362	0.66564	0.66766	0.64979	0.63191	0.61404	0.59616	0.61202	0.62787	0.64373	0.65958
0.65105	0.65429	0.65754	0.66079	0.64092	0.62106	0.60119	0.58133	0.59794	0.61456	0.63118	0.64780
0.64598	0.64831	0.65065	0.65298	0.63058	0.60819	0.58579	0.56340	0.58346	0.60352	0.62359	0.64365
0.63937	0.64307	0.64676	0.65046	0.62688	0.60330	0.57972	0.55614	0.57603	0.59591	0.61580	0.63568
0.63588	0.63642	0.63695	0.63749	0.61422	0.59095	0.56768	0.54441	0.56714	0.58988	0.61261	0.63535

ISER HIGH CASE 1980

MONTHLY LOAD CURVE POINTS

1.0000	0.9157	0.8892	0.6322
1.0000	0.9246	0.8977	0.6333
1.0000	0.9335	0.9063	0.6345
1.0000	0.9424	0.9149	0.6356
1.0000	0.9429	0.9025	0.6059
1.0000	0.9433	0.8901	0.5762
1.0000	0.9437	0.8777	0.5465
1.0000	0.9442	0.8653	0.5168
1.0000	0.9348	0.8691	0.5454
1.0000	0.9255	0.8729	0.5739
1.0000	0.9161	0.8768	0.6025
1.0000	0.9068	0.8806	0.6310

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99504	0.99341	0.99178	0.99014	0.99011	0.99008	0.99005	0.99002	0.99168	0.99335	0.99501	0.99667	
0.97999	0.98124	0.98249	0.98375	0.98484	0.98593	0.98703	0.98812	0.98578	0.98343	0.98108	0.97874	
0.97161	0.97471	0.97781	0.98091	0.97990	0.97890	0.97790	0.97690	0.97480	0.97270	0.97061	0.96851	
0.95529	0.96305	0.97081	0.97857	0.97641	0.97425	0.97210	0.96994	0.96434	0.95874	0.95314	0.94753	
0.92997	0.94219	0.95441	0.96662	0.96620	0.96577	0.96535	0.96493	0.95313	0.94134	0.92955	0.91775	
0.92707	0.93901	0.95095	0.96290	0.96180	0.96071	0.95961	0.95852	0.94767	0.93682	0.92597	0.91513	
0.92473	0.93543	0.94614	0.95684	0.95532	0.95379	0.95227	0.95075	0.94157	0.93238	0.92320	0.91402	
0.92276	0.93287	0.94297	0.95308	0.95176	0.95044	0.94911	0.94779	0.93901	0.93022	0.92144	0.91266	
0.91898	0.92844	0.93790	0.94736	0.94131	0.93526	0.92921	0.92316	0.91975	0.91634	0.91292	0.90951	
0.91382	0.92232	0.93082	0.93933	0.92705	0.91478	0.90251	0.89023	0.89401	0.89778	0.90155	0.90532	
0.90677	0.91675	0.92674	0.93672	0.92310	0.90948	0.89587	0.88225	0.88588	0.88952	0.89315	0.89678	
0.90646	0.91634	0.92622	0.93610	0.92020	0.90430	0.88841	0.87251	0.87853	0.88455	0.89057	0.89658	
0.89243	0.90553	0.91863	0.93173	0.91581	0.89988	0.88396	0.86804	0.87086	0.87368	0.87651	0.87933	
0.87697	0.88075	0.88452	0.88829	0.87479	0.86129	0.84780	0.83430	0.84403	0.85375	0.86348	0.87320	
0.82233	0.83256	0.84278	0.85301	0.83368	0.81435	0.79502	0.77569	0.78479	0.79390	0.80300	0.81211	
0.80038	0.79691	0.79344	0.78997	0.77930	0.76863	0.75796	0.74729	0.76143	0.77557	0.78971	0.80385	
0.75283	0.75821	0.76359	0.76897	0.74310	0.71723	0.69136	0.66549	0.68598	0.70647	0.72696	0.74745	
0.71003	0.71058	0.71113	0.71167	0.69801	0.68434	0.67067	0.65701	0.67013	0.68325	0.69637	0.70949	
0.70089	0.70009	0.69928	0.69847	0.67677	0.65507	0.63336	0.61166	0.63417	0.65668	0.67919	0.70170	
0.67720	0.67912	0.68103	0.68294	0.65964	0.63634	0.61304	0.58974	0.61113	0.63252	0.65390	0.67529	
0.66899	0.66992	0.67085	0.67178	0.64912	0.62645	0.60379	0.58112	0.60286	0.62459	0.64632	0.66806	
0.66558	0.66704	0.66850	0.66996	0.64764	0.62531	0.60299	0.58067	0.60153	0.62239	0.64326	0.66412	
0.66326	0.66543	0.66760	0.66977	0.64243	0.61509	0.58775	0.56041	0.58558	0.61075	0.63592	0.66109	

0.93913	0.93323	0.92734	0.92145	0.90881	0.89616	0.88352	0.87087	0.88941	0.90794	0.92648	0.94502
0.93718	0.93057	0.92396	0.91735	0.90482	0.89229	0.87977	0.86724	0.88638	0.90552	0.92466	0.94380
0.91919	0.91167	0.90414	0.89662	0.88679	0.87697	0.86714	0.85732	0.87467	0.89202	0.90937	0.92672
0.90345	0.89643	0.88942	0.88240	0.87310	0.86380	0.85450	0.84521	0.86152	0.87784	0.89416	0.91047
0.89029	0.88745	0.88461	0.88177	0.87240	0.86303	0.85367	0.84430	0.85651	0.86872	0.88093	0.89314
0.87114	0.87411	0.87707	0.88004	0.87043	0.86083	0.85122	0.84162	0.84826	0.85490	0.86154	0.86818
0.86363	0.86575	0.86786	0.86998	0.86161	0.85325	0.84488	0.83652	0.84277	0.84902	0.85527	0.86152
0.85881	0.86169	0.86457	0.86744	0.85930	0.85116	0.84303	0.83489	0.84015	0.84541	0.85067	0.85593
0.85496	0.85615	0.85733	0.85851	0.85171	0.84490	0.83810	0.83129	0.83692	0.84254	0.84816	0.85378
0.85258	0.85209	0.85161	0.85112	0.84570	0.84028	0.83486	0.82944	0.83535	0.84126	0.84716	0.85307
0.84477	0.84680	0.84883	0.85086	0.84297	0.83509	0.82720	0.81932	0.82517	0.83103	0.83688	0.84274
0.82866	0.83183	0.83500	0.83817	0.83253	0.82689	0.82125	0.81561	0.81808	0.82055	0.82302	0.82549
0.82224	0.82710	0.83197	0.83684	0.82679	0.81675	0.80670	0.79666	0.80184	0.80701	0.81219	0.81737
0.79311	0.80431	0.81550	0.82670	0.81651	0.80631	0.79612	0.78593	0.78492	0.78392	0.78292	0.78191
0.78195	0.78949	0.79703	0.80456	0.78444	0.76431	0.74418	0.72405	0.73664	0.74923	0.76182	0.77442
0.73686	0.74222	0.74758	0.75293	0.74035	0.72776	0.71518	0.70259	0.70982	0.71705	0.72428	0.73150
0.72529	0.72661	0.72793	0.72926	0.71374	0.69822	0.68270	0.66718	0.68138	0.69557	0.70977	0.72396
0.70844	0.71382	0.71919	0.72457	0.69915	0.67373	0.64832	0.62290	0.64294	0.66298	0.68303	0.70307
0.68215	0.68462	0.68710	0.68958	0.67101	0.65244	0.63387	0.61530	0.63140	0.64749	0.66358	0.67967
0.67253	0.67277	0.67301	0.67324	0.65369	0.63413	0.61457	0.59502	0.61434	0.63365	0.65297	0.67229
0.66258	0.66441	0.66624	0.66807	0.64597	0.62387	0.60178	0.57968	0.59995	0.62022	0.64049	0.66075
0.65772	0.66081	0.66391	0.66700	0.64115	0.61530	0.58945	0.56360	0.58635	0.60911	0.63187	0.65463
0.65129	0.65458	0.65787	0.66116	0.63462	0.60808	0.58153	0.55499	0.57824	0.60149	0.62475	0.64800
0.64852	0.64912	0.64972	0.65033	0.62405	0.59777	0.57149	0.54521	0.57089	0.59656	0.62224	0.64791

ISER HIGH CASE 1990

MONTHLY LOAD CURVE POINTS

1.0000	0.9195	0.8961	0.6228
1.0000	0.9331	0.9083	0.6242
1.0000	0.9466	0.9205	0.6257
1.0000	0.9602	0.9327	0.6271
1.0000	0.9567	0.9114	0.5986
1.0000	0.9532	0.8900	0.5702
1.0000	0.9496	0.8687	0.5417
1.0000	0.9461	0.8474	0.5132
1.0000	0.9361	0.8565	0.5402
1.0000	0.9261	0.8656	0.5673
1.0000	0.9150	0.8747	0.5943
1.0000	0.9060	0.8839	0.6213

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99212	0.99320	0.99429	0.99537	0.99414	0.99291	0.99168	0.99045	0.99059	0.99074	0.99089	0.99104	0.99104
0.97557	0.98065	0.98572	0.99080	0.99031	0.98983	0.98934	0.98885	0.98426	0.97967	0.97509	0.97050	0.97050
0.97382	0.97797	0.98212	0.98628	0.98511	0.98395	0.98279	0.98162	0.97863	0.97564	0.97265	0.96966	0.96966
0.94963	0.96183	0.97402	0.98622	0.98364	0.98107	0.97849	0.97591	0.96629	0.95667	0.94705	0.93743	0.93743
0.93544	0.94907	0.96271	0.97634	0.97477	0.97321	0.97164	0.97008	0.95801	0.94594	0.93388	0.92181	0.92181
0.92962	0.94274	0.95585	0.96896	0.96683	0.96469	0.96255	0.96041	0.94944	0.93846	0.92749	0.91651	0.91651
0.92887	0.94144	0.95401	0.96658	0.96251	0.95844	0.95437	0.95030	0.94180	0.93330	0.92480	0.91630	0.91630
0.92425	0.93801	0.95177	0.96553	0.95940	0.95327	0.94715	0.94102	0.93338	0.92575	0.91812	0.91048	0.91048
0.92071	0.93409	0.94746	0.96084	0.94820	0.93557	0.92293	0.91030	0.90956	0.90882	0.90808	0.90734	0.90734
0.91911	0.93292	0.94673	0.96053	0.94016	0.91978	0.89940	0.87903	0.88560	0.89217	0.89873	0.90530	0.90530
0.91745	0.93065	0.94384	0.95704	0.93673	0.91641	0.89610	0.87578	0.88290	0.89002	0.89714	0.90425	0.90425
0.91627	0.92916	0.94204	0.95492	0.92924	0.90355	0.87786	0.85217	0.86498	0.87778	0.89059	0.90339	0.90339
0.88283	0.89960	0.91636	0.93313	0.91264	0.89215	0.87166	0.85117	0.85489	0.85861	0.86234	0.86606	0.86606
0.86475	0.86934	0.87393	0.87852	0.86335	0.84819	0.83302	0.81786	0.82844	0.83901	0.84959	0.86017	0.86017
0.81258	0.82521	0.83784	0.85047	0.82897	0.80746	0.78595	0.76444	0.77332	0.78220	0.79107	0.79995	0.79995
0.77946	0.77657	0.77368	0.77080	0.76306	0.75533	0.74760	0.73986	0.75048	0.76110	0.77172	0.78234	0.78234
0.74460	0.75219	0.75978	0.76737	0.73893	0.71049	0.68205	0.65361	0.67446	0.69531	0.71616	0.73701	0.73701
0.69683	0.70072	0.70462	0.70852	0.69432	0.68013	0.66593	0.65174	0.66203	0.67233	0.68263	0.69293	0.69293
0.68880	0.68728	0.68576	0.68424	0.66580	0.64736	0.62892	0.61048	0.63044	0.65040	0.67036	0.69033	0.69033
0.66725	0.67102	0.67479	0.67856	0.65615	0.63374	0.61133	0.58892	0.60756	0.62620	0.64484	0.66348	0.66348
0.65725	0.66030	0.66336	0.66642	0.64459	0.62277	0.60095	0.57912	0.59789	0.61666	0.63542	0.65419	0.65419
0.65428	0.65726	0.66024	0.66321	0.64062	0.61804	0.59545	0.57286	0.59248	0.61209	0.63170	0.65131	0.65131
0.65095	0.65432	0.65768	0.66104	0.63517	0.60929	0.58342	0.55755	0.58006	0.60257	0.62508	0.64759	0.64759

0.92142	0.91554	0.90966	0.90378	0.89071	0.87763	0.86456	0.85149	0.87044	0.88940	0.90835	0.92730
0.92046	0.91420	0.90795	0.90169	0.88908	0.87648	0.86387	0.85127	0.87013	0.88899	0.90785	0.92671
0.90062	0.89340	0.88619	0.87897	0.86958	0.86018	0.85079	0.84140	0.85801	0.87462	0.89123	0.90784
0.88941	0.88423	0.87904	0.87385	0.86288	0.85191	0.84094	0.82997	0.84613	0.86228	0.87844	0.89460
0.87350	0.87218	0.87086	0.86954	0.85831	0.84708	0.83585	0.82462	0.83717	0.84972	0.86227	0.87483
0.85769	0.86129	0.86490	0.86850	0.85683	0.84517	0.83350	0.82183	0.82990	0.83796	0.84602	0.85408
0.84803	0.85298	0.85793	0.86288	0.85260	0.84232	0.83204	0.82175	0.82708	0.83242	0.83775	0.84308
0.84447	0.84875	0.85303	0.85732	0.84804	0.83876	0.82948	0.82020	0.82520	0.83019	0.83519	0.84018
0.84086	0.84294	0.84502	0.84709	0.83753	0.82797	0.81841	0.80885	0.81634	0.82382	0.83130	0.83878
0.83797	0.83971	0.84144	0.84318	0.83358	0.82399	0.81439	0.80479	0.81266	0.82052	0.82838	0.83624
0.82858	0.83344	0.83830	0.84316	0.83162	0.82007	0.80853	0.79699	0.80367	0.81036	0.81704	0.82372
0.81466	0.82174	0.82882	0.83590	0.82514	0.81438	0.80362	0.79287	0.79655	0.80023	0.80391	0.80759
0.80783	0.81621	0.82458	0.83296	0.81915	0.80535	0.79154	0.77773	0.78316	0.78859	0.79402	0.79946
0.77816	0.79108	0.80400	0.81691	0.80447	0.79203	0.77959	0.76714	0.76667	0.76619	0.76572	0.76524
0.76561	0.77255	0.77949	0.78642	0.76781	0.74919	0.73058	0.71196	0.72364	0.73531	0.74699	0.75867
0.72506	0.73249	0.73991	0.74734	0.73217	0.71701	0.70185	0.68669	0.69442	0.70216	0.70990	0.71764
0.71182	0.71422	0.71663	0.71904	0.70525	0.69146	0.67767	0.66388	0.67526	0.68664	0.69803	0.70941
0.69613	0.70085	0.70557	0.71030	0.68771	0.66513	0.64254	0.61996	0.63782	0.65568	0.67355	0.69141
0.67016	0.67483	0.67950	0.68417	0.66451	0.64485	0.62519	0.60553	0.62052	0.63550	0.65049	0.66548
0.66196	0.66393	0.66590	0.66787	0.64930	0.63073	0.61216	0.59359	0.61019	0.62679	0.64339	0.65999
0.65000	0.65362	0.65725	0.66087	0.64025	0.61962	0.59900	0.57837	0.59537	0.61237	0.62937	0.64637
0.64520	0.64735	0.64949	0.65164	0.62802	0.60440	0.58078	0.55717	0.57864	0.60011	0.62158	0.64305
0.63894	0.64285	0.64677	0.65068	0.62638	0.60207	0.57777	0.55347	0.57386	0.59425	0.61463	0.63502
0.63545	0.63621	0.63698	0.63774	0.61345	0.58915	0.56486	0.54056	0.56409	0.58762	0.61115	0.63468

ISER HIGH CASE 2000

MONTHLY LOAD CURVE POINTS

1.0000	0.9204	0.8962	0.6208
1.0000	0.9340	0.9076	0.6218
1.0000	0.9477	0.9190	0.6228
1.0000	0.9613	0.9303	0.6238
1.0000	0.9576	0.9096	0.5966
1.0000	0.9539	0.8890	0.5695
1.0000	0.9501	0.8683	0.5423
1.0000	0.9464	0.8476	0.5151
1.0000	0.9365	0.8569	0.5413
1.0000	0.9266	0.8662	0.5675
1.0000	0.9167	0.8756	0.5937
1.0000	0.9068	0.8849	0.6198

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.99199	0.99321	0.99443	0.99565	0.99448	0.99332	0.99215	0.99098	0.99093	0.99087	0.99082	0.99076	0.99076
0.97616	0.98087	0.98557	0.99028	0.99000	0.98973	0.98945	0.98917	0.98474	0.98031	0.97588	0.97145	0.97145
0.97339	0.97788	0.98238	0.98688	0.98574	0.98460	0.98346	0.98231	0.97896	0.97560	0.97224	0.96889	0.96889
0.94840	0.96061	0.97282	0.98503	0.98291	0.98078	0.97866	0.97654	0.96645	0.95636	0.94627	0.93618	0.93618
0.93648	0.94984	0.96319	0.97654	0.97512	0.97369	0.97227	0.97084	0.95891	0.94698	0.93506	0.92313	0.92313
0.92982	0.94322	0.95662	0.97002	0.96802	0.96602	0.96402	0.96202	0.95062	0.93922	0.92782	0.91642	0.91642
0.92856	0.94144	0.95432	0.96720	0.96314	0.95907	0.95501	0.95095	0.94213	0.93331	0.92449	0.91568	0.91568
0.92464	0.93863	0.95263	0.96662	0.96055	0.95448	0.94841	0.94234	0.93442	0.92650	0.91857	0.91065	0.91065
0.91958	0.93361	0.94765	0.96169	0.94893	0.93617	0.92342	0.91066	0.90938	0.90810	0.90682	0.90554	0.90554
0.91842	0.93184	0.94527	0.95870	0.93888	0.91906	0.89923	0.87941	0.88581	0.89220	0.89860	0.90499	0.90499
0.91738	0.93107	0.94476	0.95845	0.93783	0.91722	0.89660	0.87598	0.88291	0.88983	0.89676	0.90369	0.90369
0.91660	0.92995	0.94329	0.95663	0.93065	0.90468	0.87871	0.85274	0.86537	0.87800	0.89063	0.90326	0.90326
0.88058	0.89729	0.91399	0.93070	0.91092	0.89114	0.87136	0.85158	0.85465	0.85773	0.86080	0.86387	0.86387
0.86234	0.86695	0.87157	0.87618	0.86148	0.84678	0.83208	0.81739	0.82747	0.83756	0.84764	0.85773	0.85773
0.80967	0.82214	0.83461	0.84707	0.82649	0.80590	0.78532	0.76473	0.77285	0.78097	0.78909	0.79721	0.79721
0.77800	0.77497	0.77194	0.76890	0.76143	0.75396	0.74648	0.73901	0.74952	0.76002	0.77053	0.78104	0.78104
0.74176	0.74930	0.75684	0.76439	0.73683	0.70928	0.68173	0.65418	0.67419	0.69420	0.71420	0.73421	0.73421
0.69504	0.69852	0.70200	0.70548	0.69257	0.67966	0.66675	0.65384	0.66327	0.67270	0.68213	0.69156	0.69156
0.68619	0.68458	0.68297	0.68136	0.66392	0.64648	0.62904	0.61160	0.63065	0.64970	0.66875	0.68780	0.68780
0.66481	0.66860	0.67239	0.67619	0.65469	0.63320	0.61170	0.59021	0.60791	0.62561	0.64331	0.66101	0.66101
0.65510	0.65806	0.66101	0.66397	0.64298	0.62199	0.60100	0.58000	0.59804	0.61607	0.63410	0.65214	0.65214
0.65182	0.65473	0.65765	0.66057	0.63907	0.61758	0.59608	0.57459	0.59317	0.61174	0.63032	0.64890	0.64890
0.64836	0.65150	0.65464	0.65778	0.63295	0.60811	0.58328	0.55844	0.58014	0.60183	0.62353	0.64522	0.64522

0.92138	0.91549	0.90961	0.90373	0.89141	0.87909	0.86678	0.85446	0.87266	0.89086	0.90906	0.92726
0.91954	0.91333	0.90713	0.90092	0.88908	0.87723	0.86538	0.85354	0.87159	0.88964	0.90769	0.92574
0.89948	0.89283	0.88619	0.87954	0.87055	0.86155	0.85256	0.84356	0.85920	0.87484	0.89048	0.90612
0.89095	0.88582	0.88068	0.87555	0.86468	0.85381	0.84294	0.83207	0.84807	0.86408	0.88008	0.89609
0.87256	0.87208	0.87160	0.87113	0.86013	0.84913	0.83813	0.82714	0.83861	0.85009	0.86157	0.87304
0.85799	0.86090	0.86380	0.86670	0.85618	0.84567	0.83515	0.82463	0.83225	0.83986	0.84747	0.85509
0.84718	0.85320	0.85922	0.86523	0.85477	0.84430	0.83384	0.82337	0.82782	0.83226	0.83671	0.84116
0.84478	0.84931	0.85383	0.85836	0.84944	0.84052	0.83161	0.82269	0.82708	0.83147	0.83587	0.84026
0.84150	0.84393	0.84637	0.84881	0.83920	0.82959	0.81998	0.81037	0.81755	0.82472	0.83189	0.83906
0.83833	0.84048	0.84262	0.84477	0.83504	0.82530	0.81556	0.80583	0.81342	0.82100	0.82859	0.83618
0.82871	0.83370	0.83869	0.84368	0.83235	0.82103	0.80970	0.79838	0.80472	0.81105	0.81739	0.82373
0.81366	0.82174	0.82983	0.83791	0.82710	0.81628	0.80547	0.79465	0.79738	0.80012	0.80285	0.80558
0.80856	0.81736	0.82617	0.83498	0.82072	0.80646	0.79220	0.77794	0.78339	0.78885	0.79430	0.79975
0.77554	0.78829	0.80104	0.81379	0.80289	0.79199	0.78109	0.77018	0.76833	0.76649	0.76464	0.76279
0.76566	0.77240	0.77915	0.78589	0.76732	0.74874	0.73016	0.71158	0.72342	0.73525	0.74708	0.75892
0.72300	0.73042	0.73784	0.74526	0.73135	0.71744	0.70354	0.68963	0.69612	0.70260	0.70909	0.71558
0.71091	0.71284	0.71477	0.71671	0.70395	0.69120	0.67844	0.66569	0.67651	0.68733	0.69815	0.70897
0.69419	0.69895	0.70370	0.70845	0.68653	0.66460	0.64268	0.62075	0.63792	0.65510	0.67227	0.68944
0.66856	0.67303	0.67749	0.68196	0.66354	0.64513	0.62671	0.60829	0.62224	0.63619	0.65014	0.66409
0.65960	0.66165	0.66370	0.66575	0.64801	0.63027	0.61253	0.59480	0.61048	0.62617	0.64186	0.65755
0.64809	0.65156	0.65504	0.65851	0.63884	0.61916	0.59949	0.57982	0.59602	0.61222	0.62841	0.64461
0.64305	0.64479	0.64652	0.64826	0.62609	0.60392	0.58175	0.55958	0.58002	0.60045	0.62088	0.64131
0.63684	0.64059	0.64434	0.64809	0.62475	0.60141	0.57807	0.55472	0.57431	0.59390	0.61349	0.63308
0.63310	0.63352	0.63395	0.63437	0.61126	0.58815	0.56505	0.54194	0.56462	0.58731	0.60999	0.63267

ISER HIGH CASE 2010

MONTHLY LOAD CURVE POINTS

1.0000	0.9209	0.8932	0.6159
1.0000	0.9342	0.9031	0.6157
1.0000	0.9476	0.9129	0.6156
1.0000	0.9610	0.9227	0.6154
1.0000	0.9576	0.9026	0.5899
1.0000	0.9542	0.8825	0.5645
1.0000	0.9508	0.8624	0.5390
1.0000	0.9473	0.8423	0.5136
1.0000	0.9374	0.8526	0.5392
1.0000	0.9274	0.8629	0.5648
1.0000	0.9174	0.8731	0.5904
1.0000	0.9075	0.8834	0.6161

MONTHLY AVG. DAYS

1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
0.98804	0.98823	0.98841	0.98860	0.98948	0.99035	0.99123	0.99210	0.99104	0.98998	0.98891	0.98785
0.97671	0.98061	0.98451	0.98842	0.98843	0.98845	0.98846	0.98848	0.98456	0.98064	0.97673	0.97281
0.96950	0.97469	0.97987	0.98506	0.98493	0.98480	0.98467	0.98455	0.97949	0.97443	0.96937	0.96431
0.94218	0.95314	0.96410	0.97505	0.97613	0.97721	0.97829	0.97937	0.96733	0.95530	0.94326	0.93123
0.93857	0.94994	0.96132	0.97270	0.97283	0.97297	0.97310	0.97323	0.96172	0.95021	0.93870	0.92719
0.93094	0.94275	0.95455	0.96636	0.96545	0.96454	0.96363	0.96271	0.95182	0.94092	0.93003	0.91913
0.92937	0.94120	0.95303	0.96487	0.96126	0.95765	0.95404	0.95043	0.94221	0.93398	0.92576	0.91753
0.92665	0.93929	0.95192	0.96455	0.95815	0.95174	0.94533	0.93892	0.93270	0.92647	0.92025	0.91402
0.92243	0.93535	0.94826	0.96118	0.94704	0.93290	0.91875	0.90461	0.90584	0.90707	0.90829	0.90952
0.92106	0.93431	0.94756	0.96081	0.93999	0.91916	0.89833	0.87751	0.88508	0.89266	0.90024	0.90781
0.91895	0.93269	0.94642	0.96016	0.93743	0.91471	0.89198	0.86925	0.87824	0.88723	0.89623	0.90522
0.91117	0.92505	0.93893	0.95281	0.92552	0.89823	0.87094	0.84364	0.85706	0.87047	0.88388	0.89729
0.87377	0.88979	0.90582	0.92184	0.90210	0.88237	0.86263	0.84289	0.84661	0.85032	0.85403	0.85774
0.85492	0.85822	0.86152	0.86482	0.85107	0.83733	0.82358	0.80984	0.82028	0.83073	0.84118	0.85162
0.80376	0.81570	0.82764	0.83958	0.81947	0.79935	0.77924	0.75913	0.76730	0.77547	0.78365	0.79182
0.76777	0.76459	0.76140	0.75822	0.75266	0.74711	0.74155	0.73599	0.74473	0.75347	0.76221	0.77095
0.73603	0.74201	0.74798	0.75396	0.72871	0.70346	0.67821	0.65296	0.67223	0.69151	0.71078	0.73005
0.68803	0.69176	0.69549	0.69922	0.68614	0.67307	0.66000	0.64692	0.65627	0.66561	0.67496	0.68430
0.67998	0.67662	0.67326	0.66990	0.65521	0.64053	0.62584	0.61116	0.62921	0.64725	0.66530	0.68334
0.65969	0.66300	0.66631	0.66963	0.64966	0.62970	0.60974	0.58978	0.60643	0.62308	0.63972	0.65637
0.64915	0.65179	0.65444	0.65708	0.63755	0.61802	0.59850	0.57897	0.59585	0.61273	0.62962	0.64650
0.64614	0.64847	0.65079	0.65312	0.63252	0.61191	0.59131	0.57071	0.58898	0.60726	0.62553	0.64381
0.64214	0.64449	0.64685	0.64920	0.62615	0.60309	0.58004	0.55699	0.57768	0.59838	0.61908	0.63978

0.91150	0.90363	0.89575	0.88787	0.87764	0.86740	0.85716	0.84693	0.86504	0.88315	0.90127	0.91938
0.90927	0.90155	0.89384	0.88613	0.87568	0.86522	0.85476	0.84431	0.86248	0.88065	0.89881	0.91698
0.88907	0.88100	0.87293	0.86486	0.85772	0.85057	0.84343	0.83629	0.85150	0.86671	0.88192	0.89713
0.88258	0.87637	0.87016	0.86395	0.85434	0.84474	0.83513	0.82553	0.84135	0.85716	0.87298	0.88880
0.86310	0.86183	0.86055	0.85928	0.84907	0.83887	0.82866	0.81846	0.82994	0.84142	0.85290	0.86438
0.85092	0.85270	0.85448	0.85626	0.84657	0.83689	0.82720	0.81751	0.82542	0.83333	0.84123	0.84914
0.83840	0.84336	0.84832	0.85328	0.84372	0.83416	0.82460	0.81504	0.81964	0.82424	0.82884	0.83344
0.83619	0.83931	0.84243	0.84555	0.83768	0.82982	0.82195	0.81408	0.81883	0.82358	0.82833	0.83308
0.83449	0.83651	0.83852	0.84054	0.83040	0.82026	0.81012	0.79999	0.80811	0.81623	0.82436	0.83248
0.82997	0.83144	0.83291	0.83438	0.82429	0.81421	0.80413	0.79404	0.80266	0.81127	0.81989	0.82850
0.81904	0.82281	0.82658	0.83035	0.81974	0.80912	0.79851	0.78790	0.79474	0.80159	0.80843	0.81528
0.80547	0.81358	0.82169	0.82980	0.81830	0.80681	0.79532	0.78383	0.78721	0.79059	0.79398	0.79736
0.80041	0.80916	0.81790	0.82665	0.81224	0.79784	0.78344	0.76903	0.77469	0.78035	0.78601	0.79167
0.76730	0.77923	0.79116	0.80308	0.79259	0.78209	0.77159	0.76110	0.75967	0.75823	0.75680	0.75537
0.75669	0.76152	0.76635	0.77118	0.75495	0.73871	0.72248	0.70625	0.71765	0.72906	0.74046	0.75186
0.71663	0.72346	0.73029	0.73711	0.72331	0.70950	0.69569	0.68188	0.68886	0.69584	0.70283	0.70981
0.70419	0.70581	0.70744	0.70906	0.69787	0.68669	0.67551	0.66432	0.67388	0.68345	0.69301	0.70257
0.68720	0.68956	0.69192	0.69428	0.67563	0.65697	0.63832	0.61967	0.63596	0.65226	0.66855	0.68485
0.66229	0.66641	0.67053	0.67465	0.65687	0.63910	0.62132	0.60354	0.61720	0.63086	0.64451	0.65817
0.65420	0.65567	0.65713	0.65860	0.64249	0.62639	0.61029	0.59418	0.60882	0.62346	0.63810	0.65274
0.64168	0.64464	0.64761	0.65057	0.63271	0.61485	0.59700	0.57914	0.59404	0.60893	0.62383	0.63872
0.63745	0.63809	0.63874	0.63939	0.61869	0.59800	0.57730	0.55661	0.57665	0.59670	0.61675	0.63680
0.62997	0.63196	0.63395	0.63595	0.61543	0.59490	0.57438	0.55386	0.57239	0.59092	0.60945	0.62798
0.62660	0.62583	0.62506	0.62429	0.60318	0.58207	0.56097	0.53986	0.56174	0.58361	0.60549	0.62737