REGIONAL QUARTERS RENTAL SURVEY

COVERING
GOVERNMENT-FURNISHED QUARTERS
LOCATED IN

ALASKA SURVEY REGION

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I. SURVEY BACKGROUND

The Quarters Operations Office coordinated a contractor-conducted field survey of the private rental housing market in the state of Alaska from May 2006 through June 2006. This survey was undertaken as specified in the Office of Management and Budget (OMB) Circular No. A-45, and in the U.S. Department of the Interior Quarters Handbook (400 DM.) OMB Circular A-45 provides for reconfirmation of the market-based rental rates at least once every five years, or sooner, if conditions warrant.

The collection and analysis of rental housing data were accomplished employing methods similar to those used in previous surveys. Automated and manual analytical procedures were used to establish base rental rates for houses (including plexes), apartments, mobile homes, and trailer spaces. Rental rates for cabins were established based upon their comparability with 1-bedroom houses. Rental rates for temporary housing and travel trailers were established based upon their comparability with mobile homes. Rental rates for dormitories, bunkhouses and transient quarters were established by extending the principle of comparability, as provided for in OMB Circular A-45.

The objective of regional surveys, as set forth in OMB Circular No. A-45, is to develop reasonable rental rates based upon the "…typical rental rates for comparable private housing in the general area in which the Government quarters are located…." The policy set forth in OMB Circular A-45 is as follows:

> Rental rates and charges for Government quarters and related facilities will be based upon their "reasonable value...to the employee...in the circumstances under which the quarters and facilities are provided, occupied, or made available."...Reasonable value to the employee or other occupant is determined by the rule of equivalence; namely, that charges for rent and related facilities should be set at levels equal to those prevailing for comparable private housing located in the same area, when practicable...

The regional survey method uses regression analysis techniques to establish a base rental rate for a given type of quarters that reflects the typical rate for that type of housing in the survey area. Regression analysis allows the Quarters Operations Office to establish adjustments that reflect: (1) the contributory value (+ or -) of housing features that the private rental market indicates are significant; and (2) relevant social and economic factors that are manifested in the rent levels of individual communities.

Because regression analysis permits assessment of (and adjustment for) different locations, as measured by market rents, several localities or states can be surveyed at a time to minimize data collection costs, and the rates can be individualized for communities significantly at variance with the regional rent pattern.

The resulting product (finalized rental rates), when derived from carefully applied automated statistical analysis, provides a logical and equitable base rental rate structure supported by the market rental rate pattern of the region and the community.

II. INVENTORY OF GOVERNMENT-FURNISHED QUARTERS

This survey was initiated with an inventory of Government-furnished quarters managed by the agencies and bureaus that participate in the Quarters Management Information System (QMIS) program.

Agencies and bureaus use the QMIS software to manage their inventories. The Quarters Operations Office in Denver developed this software. QMIS allows an installation or region to maintain its own housing inventory. Rents can be calculated in just minutes, even for hundreds of quarters. This decentralized system provides local control of the housing inventory. As always, the key to accurate rents is accurate, up-to-date inventory information.

Software with the results of this survey and the updated Consumer Price Index (CPI) is distributed from Denver in December each year. If you do not receive new CPI software, or do not receive procedures for downloading the software by January 1st of each year, please contact the **Quarters Operations Office (303-969-5696 or 303-969-5050)**. This is important because, by regulation, new rents (based on the survey and CPI) must be implemented in early March, and tenants must be notified in writing by early February.

It is also important that all agencies and bureaus submit updates to their housing inventories by May 15 of each year (on diskettes or via electronic mail). This information is used to determine the communities and characteristics to be sampled in new Regional Surveys. The information is also used for various general management reports.

III. CONTRACTING FOR THE PRIVATE RENTAL SURVEY

A. DETERMINATION OF THE COMMUNITIES TO BE SURVEYED

Selection of the communities to be surveyed in this region was initiated with a review of the nearest established communities identified in the quarters inventory. Their geographic locations and populations were determined to enable selection of established communities nearest to concentrations of Government housing.

Inclusion of these communities enables a comparison of the community rental rate structure with that of the survey region. This permits a ready determination of whether the local or the regional rental rate structure should be utilized to establish the Government-furnished quarters base rents. A complete discussion of this process is contained in Section IV of this report.

The communities surveyed represented broad geographic and population ranges. The largest community surveyed – Anchorage, Alaska – had a 2000 population of 260,283. The smallest community –

Kodiak, Alaska – had a 2000 population of 6,334. A list of the surveyed communities appears as Table 1. In accordance with OMB Circular A-45, communities with 2000 census populations below 5,000 in Alaska were not analyzed.

TABLE 1 COMMUNITIES SURVEYED

COMMUNITY	2000 CENSUS POPULATION
ALASKA	
Anchorage, AK	260,283
Fairbanks, AK	30,224
Juneau, AK	30,711
Kenai, AK	6,942
Ketchikan, AK	7,922
Kodiak, AK	6,334
Sitka, AK	8,835

B. DETERMINATION OF THE HOUSING CLASSES TO BE SURVEYED

In order to determine which housing classes to survey, the inventory for the agencies participating in the QMIS system were separated into housing classes shown in Table 2, below. Analysis of the quarters data revealed the following numbers of units per housing class:

TABLE 2 GOVERNMENT-FURNISHED QUARTERS (BY HOUSING CLASS)

Housing Class	# of Units	Avg. Age	Age Range	Avg. Sq. Ft.	Sq. Ft. Range
Houses					
4+ Bedrooms	24	26	4 – 67	1,617	1,032 - 2,966
3 Bedrooms	223	23	2 – 66	1,534	863 - 3,696
2 Bedrooms	129	30	2 – 86	1,251	448 - 2,880
1 Bedroom	29	20	3 – 67	703	320 - 1,350
Apartments					
3+ Bedrooms	42	28	7 – 48	1,657	1,000 - 2,919
2 Bedrooms	111	17	1 – 56	1,054	411 -1,974
1 Bedroom	84	21	2 – 68	736	336 - 1,099
Efficiency	40	39	18 – 85	425	322 - 484
Mobile Homes					
3 Bedrooms	26	23	11 – 36	1,001	750 - 1,557
2 Bedrooms	4	23	10 – 35	717	658 - 770
Cabins	97	32	1 – 81	397	102 - 1,944
Dormitories	50	25	1 – 66	3,210	295 - 39,996
Trailer Pads	19	–	–	–	–
TOTAL UNITS	**878**				

NOTE: The above data was extracted from the latest integrated database stored by the Quarters Operations Office. Since the program is decentralized, the data contained in this database is only what has been sent to our office by users in the field. The numbers above may not accurately reflect the actual number of quarters for this survey region.

As with other regional surveys, the contractor was directed to survey only those housing classes for which a representative sample could be readily obtained in the private rental market. Thus, comparables were not obtained for cabins or lookouts, temporary housing, travel trailers, bunkhouses/dormitories, transient quarters or tents.

Rental rates for cabins were established by using the average rental rate for one-bedroom, single-family houses as the basis of comparison. Additional adjustments, that reflect the absence of certain standard housing features in some cabins, have been included for use when appropriate.

Since temporary housing and travel trailers (mobile home-like structures containing less than 256 square feet of gross living area) are most structurally similar to mobile homes, the rental charges for these housing classes are based upon the analysis of mobile home market rental comparables.

Since comparable bunkhouse or dormitory housing does not exist in most communities, the Quarters Operations Office is unable to obtain sufficient market data to provide a satisfactory statistical base. Consequently, rental rates for bunkhouses and dormitories have been established using an extension of the Principle of Comparability, as permitted in OMB Circular A-45. Similarly, the rental charge for transient quarters has been established in conjunction with the dormitory rate structure.

OMB Circular A-45, revised October 20, 1993, excludes tents from the definition of Government-furnished quarters. Therefore, rental charges have not been established (and should not be assessed) for tents which are used as employee housing.

Four housing classes (houses/plexes, apartments, mobile homes and trailer pads) were ultimately selected for field survey and computer analysis. The contractor was instructed to select comparables built to Housing and Urban Development (HUD) minimum housing standards wherever possible. The number of observations obtained for each housing class in each community surveyed varied, depending upon the number of nearby Government quarters of that class. The inventory data for each of the housing classes was analyzed to determine frequencies and age and size ranges for major construction elements. The information in Table 2 was used to guide the contractor in the conduct of the survey.

C. HEATING FUELS AND UTILITY CHARGE SURVEY

To ensure reliability of the energy consumption estimates for housing where consumption is neither metered nor measured, this report uses a series of contractor-developed heating and cooling consumption tables for each general type of housing represented in the survey. The tables are based upon energy consumption studies that use a methodology meeting housing industry standards. The results reflect energy consumption for variously sized single-family houses (with and without basements), apartments, and mobile homes. A complete discussion of the energy consumption/cost methodology is contained in Section VI.

D. CONTRACTOR SELECTION

The National Business Center provided procurement support and project coordination for this Private Rental Survey. Reimbursement for survey expenses was underwritten by the agencies and bureaus that participate in the Quarters Operations Program.

The private rental survey was completed by Delta-21 Resources Inc. of Knoxville, Tennessee, during the months of May 2006 through June 2006. A total of 551 private rental housing comparables were sampled. In addition, electrical, heating fuel, utility, appliance, and other related service charges were collected in each of the communities surveyed. The private rental housing costs that were obtained reflected current rental costs and required no adjustment for time.

IV. REGIONAL SURVEY PRINCIPLES AND PROCEDURES

A. SURVEY PRINCIPLES

The purpose of a regional survey is to determine and establish reasonable quarters rents through an analysis of the market rents of comparable private housing in communities nearest to the concentrations of Government housing. The process of arriving at the base rent of a structure is influenced by real estate appraisal principles, statistical limitations, and administrative considerations. Often there may be a conflict among these three interests, which necessitates a trade-off.

1. Real estate appraisal principles include matching comparables as closely as possible to the specific subject properties in physical characteristics and location, and adjusting in a logical direction for all significant differences.

2. Statistical principles involve: (a) trying to minimize the standard error of the estimate (unexplained variation); (b) getting a good match of characteristics between the properties analyzed and those the analysis is applied to; (c) obtaining a large and diverse sample; and (d) making adjustments for factors that are significant in explaining variation. Ideal samples may not always be available in the market; and the market search may be limited (like an appraisal) because of time and budget constraints.

3. Administrative considerations recognize that Government housing is usually not located in established communities, and that physical characteristics (such as in historical houses, one-room cabins, lookouts or dormitories) are difficult to match in the market. Government quarters are often found in areas influenced by tourism or boom/bust natural resource development that may produce unreasonable rents. Consistency and relative reasonableness, as well as time and budget constraints, must also be taken into consideration.

4. While trade-offs among these three considerations may result in a less than ideal application of any one of the three principles, the goal is still to produce "reasonable" Monthly Base Rental Rates (MBRR) for quarters that are relatively consistent with the local market rents for similar housing, internally consistent and logical from one unit to another, and represent reasonable value to the employee.

B. MULTIPLE REGRESSION PROCEDURES USED IN RENTAL RATE COMPUTATIONS

There are several reasons for using the regional survey method to arrive at quarters rental rates. These include accuracy, consistency, fairness, cost effectiveness/economy, and the provision in OMB Circular A-45 that regional surveys are the preferred method.

Prior to the use of the regional survey method, quarters Monthly Base Rental Rates (MBRRs) were reset every five years by individually appraising each Government unit. The appraisal process normally relied upon the use of a small number (2-4) of comparables for each subject quarters unit and made logical or market-abstracted adjustments to each comparable. In many instances the same comparables were used to establish rental rates for several quarters. Thus the selection of comparables became critical. Individualized appraisals often led to inconsistencies among units in the same area. Many times different agencies,

managing similar or identical housing units in the same area, had substantially different rents after analyzing the same rental market. Appraisers valuing several different units using separate sets of comparables and adjustments can also sometimes arrive at rents not logically related to one another. Finally, the appraisal process required a considerable amount of travel, and individualized writing, typing and editing of appraisal reports, which was expensive and very time-consuming.

Alternatively, the regional survey method relies upon much larger samples of comparables. These are statistically analyzed to determine those factors that are significant in explaining variations in the adjusted rent of each class of housing comparables. Each class of comparables (houses, apartments and mobile homes) is analyzed separately to determine which locations and physical characteristics are important in explaining the differences in rents among individual rental units and communities. The computer program independently and objectively determines the best set of characteristics (formula) to explain the rental pattern. This formula varies for each survey region and housing class.

The rental rates are based upon an analysis of regional data and local data. The rents in all surveyed communities for each housing class are tested for statistical significance. All significant negative location adjustments are applied to the quarters using that community as their nearest established community. **Positive location (community) adjustments are not applied; so Government housing units near high-rent communities are charged the typical rent for the region as a whole, rather than the typical rent for that high-cost location.**

The statistical process used is called forward in-and-out, step-wise multiple regression analysis. It takes all of the variables considered and forms a matrix or grid showing how every variable is related to every other variable (cross-correlation matrix). In this phase of the analysis, significant inventory items relating to the dwelling structure are coded into the computer as variables to be tested for their impact, if any, on rent. The variable to be explained (in this case, rent) is called the dependent variable, because its value is determined by that of the other (independent) variables.

In forward in-and-out step-wise multiple regression analysis, the independent variable that explains the most variation in the dependent variable (rent) is selected first by the computer and entered as Step 1. The remaining variation is then recomputed, and the independent variable that explains the largest portion of the remaining variation is selected by the computer and entered as Step 2. As each new variable is added, the coefficients of all the previously entered variables are recomputed to take into account relationships among the independent variables. If a previously entered variable no longer meets the test of significance, it is removed.

As this procedure uses the variation squared, it is highly sensitive to cases with extreme variations from the norm. Since the purpose of a regional survey is to find the typical rent for housing with certain characteristics, it is useful (and mandatory) to cull comparables with unusually high or low rents that are apparently unrelated to their characteristics. Such non-conforming rentals tend to obscure the typical pattern. To accomplish this culling, the following steps are normally taken.

Step 1. A listing of all the comparables is checked to see that the program has proper decodes, that no rental has been entered twice, and that the data is complete for each variable to be tested. The range for each rent class is also checked.

Step 2. Regression Run 1 (square foot base formula). The purified database is analyzed for the best fit of adjusted rent versus square feet and the logarithm of square feet. This comparison is undertaken because square footage in buildings is generally the variable that explains the most variation of adjusted rent. It is also a universal variable (one that applies to all cases) and a continuous variable (one that changes in many small increments).

Step 3. A listing is produced which shows by community the rent/predicted rent ratio of each private rental sample. The predicted rent is one computed using the square foot base formula derived in step 2. The purpose of this listing is to screen out individual rentals whose ratios are far out of line relative to other rental comparables in the same community.

Step 4. A scattergram of rentals for each class, showing adjusted rent by square feet, is produced to visually display the data. These scattergrams, and the listings produced in Step 3 above, are used to remove samples with unusually high or low rents in each size grouping. A separate variable for each of the remaining communities is then entered into the next step, the full regression analysis, to see if it has a statistically significant location adjustment after other adjustments have been made. This run and a crosstab run of physical features allows for selection of other variables that are significantly represented and widely (geographically) distributed. These variables are turned into dummy (yes/no) and combination variables. Continuous and discrete variables are entered as simple variables, logarithmic transformations, and in logical combinations.

Step 5. (First Full Regression Run). The screened samples for each housing class, along with the variables to be tested, are analyzed to find coefficients for the significant variables. The results are checked for logic and cross-correlation; normally only one form of a variable is allowed to stay in the equation. Variables with illogical results are checked to find reasons for such deviation from expected results. Such variables are normally dropped from subsequent regression runs. Sometimes the samples containing such variables are culled; however, culling samples is uncommon.

Step 6. (Other Full Regression Runs). The full regression analysis is rerun without the illogical variables and/or dropped cases. If the end results look reasonable, the coefficients determined by regression analysis are used to compute Monthly Base Rental Rates (MBRRs) for individual Government-furnished quarters.

Step 7. (Predicted Rent Tables). The coefficients of each satisfactory regression run are put into a computer program which produces a table of predicted quarters MBRRs. The base values and all possible combinations of adjustments are reviewed to ensure the results are reliable for the full range of values. If not, the cause of the problem is diagnosed and corrected, and the regression analysis is re-run, producing a revised set of coefficients. Then Step 6 is repeated, and a new set of rent tables is produced.

V. ESTABLISHMENT OF MONTHLY BASE RENTAL RATES (MBRR)

A. USE OF BASE RENT CHARTS

Although rental computations have been automated to produce Monthly Base Rental Rates (MBRRs) and final Net Rents for most quarters, housing managers should understand the methodology used to determine rental rates. Therefore, a set of charts has been prepared to allow the manual computation of the MBRRs for each class of rental housing. The charts have been constructed as size/age tables for the three major categories of housing (houses, apartments and mobile homes). By knowing the gross square feet of the livable area (size), the age, and the housing class of a building being used as quarters, one can determine the base rent from the proper table. The charts also contain columns and/or footnotes of rent adjustments, which modify the rent from the size/age table to produce a MBRR for an individual unit.

The value of one refrigerator and one stove is included in the rents listed in Tables 3, 4, and 5. Therefore, if the Government does not provide a refrigerator or a range in the quarters, the value of each non-provided appliance should be subtracted from the monthly rent. The current values of a refrigerator and range are shown in Table 18 of this report, and may be adjusted annually by the Quarters Operations Office to reflect changes in the Consumer Price Index (CPI) which occurs in November, following the issuance of this report.

In selecting the appropriate rent table, it is important to remember that the **design of the quarters, not its use, determines its category.** Thus, a house or an apartment unit **designed** to be occupied by an individual or a family, but which is actually used to house unrelated individuals, would be valued by the category for which it was designed to be used, rather than as a bunkhouse/dormitory. Where a structure is not designed for occupancy by an individual or family, or has been substantially modified to house individuals on a dormitory basis, it would be appropriate to apply bunkhouse/dormitory rates. Thus, an unmodified three-bedroom house with a **planned occupancy** of six unrelated individuals (normally two persons per bedroom) would have a rental rate determined by calculating the rental rate for a three-bedroom house and then dividing that rate by six. This rate would change if the number of **planned** occupants changed. If the house were later **structurally modified** to be used as a bunkhouse/dormitory, the rate then would be the dormitory rate.

Based upon information provided by the contractor, deductions from the monthly contract rental rate of each rental sample were made for the contributory costs of utilities, appliances, furnishings and services provided and included in the contract rent. No deductions were made for central air conditioners, refrigerators or ranges; however, if a refrigerator or range was missing, the value was added to the adjusted rent. Central air conditioners are valued at their contributory value, if any. The resulting adjusted monthly contract rental rate represents the contributory value of the dwelling structure equipped with a refrigerator and a range. The establishment of final monthly quarters rental charges for houses, apartments, mobile homes and cabins/lookouts requires the addition of charges for Government-provided utilities, services, appliances and furnishings. Conversely, **deductions** are required for the values of ranges and refrigerators when they are not provided by the Government.

There are a total of eleven rental rate charts: four charts for single-family housing, four charts for apartments, and three charts for mobile homes. Instructions for computing rental rates for cabins, bunkhouses and dormitories, transient quarters and trailer spaces are found in Sections V.E, V.F, V.G and V.H, respectively. Because OMB Circular A-45 excludes tents from the definition of "rental quarters," there is no charge for the provision of tents.

The use of the charts is fairly simple. First, find the chart for the category into which the Government quarter fits. Next, round the finished square footage **down** to the nearest hundreds of square feet. Thus, if a unit has 980 square feet, the row labeled 900 SQ FT would be used. Then the age should be rounded **up** to the nearest age increment. (Always round to benefit the tenant.) If the dwelling at issue was built in 1982, its age would be computed as 2006 (the current year) minus 1982 (the year built). Thus, in this instance, the unit is 2006–1982 = 24 years old; and the column headed by "25 YEARS OLD" should then be followed down to the 900 SQ FT row to obtain the size/age adjusted rent.

The rent charts also have various location adjustments, as well as adjustments for physical features such as the number of bathrooms, the type of garage facilities, the condition of the housing, etc. These should be subtracted from, or added to, the size/age adjusted rent, as specified, to determine the MBRR.

When computing the final rent (net rent) to be paid, the MBRR must be adjusted to include the value of Government-provided related facilities (utilities, appliances, furnishings and services); and the administrative adjustments prescribed in OMB Circular A-45. Use Form DI 1880, Rent Computation Schedule, from the Department of the Interior (DOI) for guidance. (Manual rent calculations also require information from the most recent Consumer Price Index (CPI) Memo published by the Quarters Program Office.)

Where a dwelling is larger than the highest square footage in the chart pertinent to that unit, use the size/age rent and adjustments from the bottom (largest SQ FT) row. This may eliminate the need for some administrative adjustments due to excess size of the housing. If a dwelling is smaller than the smallest square footage, use the lowest square footage listed on the chart.

The rent for a dwelling with more than 4 bedrooms (3 bedrooms for apartments and mobile homes) is calculated as if the unit had 4 bedrooms (3 bedrooms for apartments and mobile homes). In addition, the carport charge is the same regardless of the size of the carport; and the fireplace charge is the same for one or more fireplaces. For rental calculation purposes, a "cap" of 3 bathrooms applies.

To assist in the calculation of quarters MBRRs, examples are provided in the following pages. While the rates appearing in the following tables should allow users to establish MBRRs for essentially any property, not all situations and conditions can be anticipated. Therefore, housing managers should use professional discretion to set rates for truly unusual situations. In cases where housing managers must use some other method to establish rates, please notify the National Business Center Quarters Operations Office via telephone, at **303-969-5696 or 303-969-5050**, or fax 303-969-6634. You should explain the conditions, the rate used, and the reasoning so that the Quarters Operations Office may anticipate such circumstances in the future. Please retain the documentation for such actions in housing management files.

B. SINGLE FAMILY HOUSING

For single-family detached houses, including plexed dwellings and townhouses, use the rental chart which appropriately describes the housing class and the number of bedrooms of the subject quarters. The charts for houses are in Tables 3a through 3d.

For example, assume a 3-bedroom, 1½-bath house, that was built in 1973, and which has a 2-car garage, two fireplaces, a central refrigerated air conditioning system, and 1,276 gross square feet of living space. The house, located near Ketchikan, Alaska, is fair in both exterior and interior condition.

First, the chart for 3-bedroom, good condition, 1 bathroom, houses (Table 3b) should be located and used. These charts are baseline charts, which assume that each house is in good condition inside and outside and has one full bathroom. Therefore, if the house is in good condition inside and outside and has one bathroom, no additional computations are needed. If there is a deviation from either good inside or outside condition, or there are less or more bathrooms than one, then the computations must be changed as discussed below. In the first step, Table 3b is selected as the proper chart for 3-bedroom houses. Next, the size (gross finished floor space) should be rounded **down** to the nearest 100 square feet (from 1,276 to 1,200 sq. ft.) Under the column headed "**SQ FT**," the figure 1,200 should be located. Further adjustments will be taken from this row.

Finally, the appropriate age column should be selected. The house in this example is 2006–1973 = 33 years old. The age should be rounded **up** to the next highest age column, which, in this case, is the column headed "**35 YRS OLD**." Follow this column down to the 1,200 square feet row to obtain the size/age "Chart Rent" of $1,111.

The first adjustment is the extra bathroom charge. Follow the column headed "**PER EXTRA BATHROOM**" down to the 1,200 SQ FT row to find a charge of $157 for a full extra bathroom. As the house in this example has only ½ of an extra bathroom, the adjustment is $157 x .5 (½ extra bathroom) = $78.00 (rounded.) Add $78 to the rent.

The second and third adjustments are made for a fair exterior and a fair interior condition. Follow the column headed "**FAIR EXTERIOR/INTERIOR***" down to the 1,200 SQ FT row. The amount reflects a deduction of $10 for a house with a fair exterior **and** a deduction of $10 for a house with a fair interior. Since both the exterior and interior are in fair condition, the total adjustment is -$20.

The fourth adjustment is for a two-car garage. Follow the column headed "**GARAGE (PER CAR)**" down to the 1,200 SQFT row. $28 should be charged for each car the garage is designed to accommodate. Since the house in this example has a 2-car garage, multiply the amount shown for one car ($28) times 2 to reflect the value of a 2-car garage (2 x $28 = $56). Add $56 to the rent.

The fifth adjustment is made for the fireplace. Follow the column headed "**FIREPLACE**" down to the 1,200 SQ FT row. The amount reflects an addition of $83 for one or more fireplaces. Add $83 to the rent for the fireplace.

The final adjustment is the community adjustment. The house in this example is located near Ketchikan, AK. The notes beneath the table (see "**COMMUNITY ADJUSTMENTS**") reflect that Ketchikan, AK receives an adjustment of -$23. As instructed, subtract $23 from the rent. Community adjustments are given only to communities in which the market rents are **lower** than the regional average level of rents. Communities not listed in the tables have rents which are equal to or higher than the regional average rent, and do not receive community adjustments.

In summary, the adjustments that produce the Monthly Base Rental Rate for the house used in this example are shown below.

Chart Rent (1,200 SQ FT/35 yrs. old)	$1,111.00
Extra Bath Adjustment (.5 X $157)	+ 78.00
Fair Exterior Condition Adjustment	- 10.00
Fair Interior Condition Adjustment	- 10.00
Garage Adjustment (Two Car X $28)	+ 56.00
Fireplace Adjustment	+ 83.00
Community Adjustment (Ketchikan, AK)	- 23.00
Monthly Base Rent	$1,285.00
Monthly Base Rent (Rounded to nearest $1)	$1,285.00

The last step is to round the resulting MBRR (Monthly Base Rental Rate) to the nearest whole dollar. Any amount resulting in an amount of $.50 or greater is rounded up; any amount resulting in an amount of $.49 or less is rounded down. The decision to round is discretionary.

TABLE 3A MONTHLY BASE RENT CHART - GOOD CONDITION, 4 BEDROOM, 1 BATH HOUSES

ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Air Cond	Garage (Per Car)	Fire-place	Plex
700	$1,204	$1,131	$1,093	$1,067	$1,047	$1,032	$1,007	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$60
800	$1,237	$1,164	$1,126	$1,101	$1,081	$1,065	$1,041	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$68
900	$1,267	$1,194	$1,156	$1,130	$1,111	$1,095	$1,070	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$77
1000	$1,293	$1,220	$1,182	$1,157	$1,137	$1,121	$1,097	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$85
1100	$1,317	$1,244	$1,206	$1,181	$1,161	$1,145	$1,120	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$94
1200	$1,339	$1,266	$1,228	$1,202	$1,183	$1,167	$1,142	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$102
1300	$1,359	$1,286	$1,248	$1,222	$1,203	$1,187	$1,162	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$111
1400	$1,378	$1,305	$1,267	$1,241	$1,221	$1,206	$1,181	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$119
1500	$1,395	$1,322	$1,284	$1,258	$1,239	$1,223	$1,198	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$128
1600	$1,411	$1,338	$1,300	$1,275	$1,255	$1,239	$1,215	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$136
1700	$1,426	$1,354	$1,316	$1,290	$1,270	$1,254	$1,230	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$145
1800	$1,441	$1,368	$1,330	$1,304	$1,285	$1,269	$1,244	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$153
1900	$1,454	$1,382	$1,344	$1,318	$1,298	$1,282	$1,258	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$162
2000	$1,467	$1,394	$1,356	$1,331	$1,311	$1,295	$1,271	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$170
2100	$1,479	$1,407	$1,369	$1,343	$1,323	$1,307	$1,283	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$170
2200	$1,491	$1,418	$1,380	$1,355	$1,335	$1,319	$1,294	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$170
2300	$1,502	$1,429	$1,392	$1,366	$1,346	$1,330	$1,306	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$170

Additional Adjustments:

Carport (Any Size)	+$10	Central Evaporative Air:	+$10

Community Adjustments:

Kenai, AK	-$286
Ketchikan, AK	-$23
Kodiak, AK	-$104

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 3B MONTHLY BASE RENT CHART - GOOD CONDITION, 3 BEDROOM, 1 BATH HOUSES

ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Air Cond	Garage (Per Car)	Fire-place	Plex
500	$1,028	$955	$917	$891	$872	$856	$831	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$43
600	$1,074	$1,001	$963	$937	$918	$902	$877	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$51
700	$1,112	$1,040	$1,002	$976	$956	$941	$916	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$60
800	$1,146	$1,073	$1,035	$1,009	$990	$974	$949	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$68
900	$1,176	$1,103	$1,065	$1,039	$1,019	$1,004	$979	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$77
1000	$1,202	$1,129	$1,091	$1,065	$1,046	$1,030	$1,005	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$85
1100	$1,226	$1,153	$1,115	$1,089	$1,070	$1,054	$1,029	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$94
1200	$1,248	$1,175	$1,137	$1,111	$1,092	$1,076	$1,051	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$102
1300	$1,268	$1,195	$1,157	$1,131	$1,112	$1,096	$1,071	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$111
1400	$1,286	$1,214	$1,176	$1,150	$1,130	$1,114	$1,090	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$119
1500	$1,304	$1,231	$1,193	$1,167	$1,148	$1,132	$1,107	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$128
1600	$1,320	$1,247	$1,209	$1,183	$1,164	$1,148	$1,123	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$136
1700	$1,335	$1,262	$1,224	$1,199	$1,179	$1,163	$1,139	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$145
1800	$1,350	$1,277	$1,239	$1,213	$1,193	$1,178	$1,153	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$153
1900	$1,363	$1,290	$1,252	$1,227	$1,207	$1,191	$1,166	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$162
2000	$1,376	$1,303	$1,265	$1,239	$1,220	$1,204	$1,179	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$170
2100	$1,388	$1,315	$1,278	$1,252	$1,232	$1,216	$1,192	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$170

Additional Adjustments:

Carport (Any Size)	+$10	Central Evaporative Air:	+$10

Community Adjustments:

Kenai, AK	-$286
Ketchikan, AK	-$23
Kodiak, AK	-$104

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 3C MONTHLY BASE RENT CHART - GOOD CONDITION, 2 BEDROOM, 1 BATH HOUSES
ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Air Cond	Garage (Per Car)	Fire-place	Plex
300	$788	$715	$678	$652	$632	$616	$592	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$26
400	$860	$788	$750	$724	$704	$688	$664	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$34
500	$916	$844	$806	$780	$760	$744	$720	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$43
600	$962	$889	$852	$826	$806	$790	$766	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$51
700	$1,001	$928	$890	$864	$845	$829	$804	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$60
800	$1,034	$962	$924	$898	$878	$862	$838	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$68
900	$1,064	$991	$953	$927	$908	$892	$867	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$77
1000	$1,090	$1,018	$980	$954	$934	$918	$894	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$85
1100	$1,114	$1,042	$1,004	$978	$958	$942	$918	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$94
1200	$1,136	$1,063	$1,025	$1,000	$980	$964	$940	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$102
1300	$1,156	$1,084	$1,046	$1,020	$1,000	$984	$960	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$111
1400	$1,175	$1,102	$1,064	$1,038	$1,019	$1,003	$978	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$119
1500	$1,192	$1,119	$1,082	$1,056	$1,036	$1,020	$996	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$128
1600	$1,208	$1,136	$1,098	$1,072	$1,052	$1,036	$1,012	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$136
1700	$1,224	$1,151	$1,113	$1,087	$1,067	$1,052	$1,027	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$145
1800	$1,238	$1,165	$1,127	$1,101	$1,082	$1,066	$1,041	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$153
1900	$1,252	$1,179	$1,141	$1,115	$1,095	$1,080	$1,055	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$162

Additional Adjustments:

Carport (Any Size)	+$10	Central Evaporative Air:	+$10

Community Adjustments:

Kenai, AK	-$286
Ketchikan, AK	-$23
Kodiak, AK	-$104

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 3D MONTHLY BASE RENT CHART - GOOD CONDITION, 1 BEDROOM, 1 BATH HOUSES
ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Air Cond	Garage (Per Car)	Fire-place	Plex
100	$369	$296	$265	$265	$265	$265	$265	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$9
200	$543	$470	$432	$406	$386	$371	$346	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$17
300	$644	$572	$534	$508	$488	$472	$448	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$26
400	$717	$644	$606	$580	$560	$545	$520	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$34
500	$773	$700	$662	$636	$616	$601	$576	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$43
600	$818	$746	$708	$682	$662	$646	$622	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$51
700	$857	$784	$746	$721	$701	$685	$660	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$60
800	$891	$818	$780	$754	$734	$719	$694	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$68
900	$920	$847	$809	$784	$764	$748	$724	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$77
1000	$947	$874	$836	$810	$790	$775	$750	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$85
1100	$971	$898	$860	$834	$814	$799	$774	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$94
1200	$992	$920	$882	$856	$836	$820	$796	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$102
1300	$1,012	$940	$902	$876	$856	$840	$816	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$111
1400	$1,031	$958	$920	$895	$875	$859	$834	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$119
1500	$1,048	$976	$938	$912	$892	$876	$852	+$157	+$20	-$10	-$15	+$15	+$28	+$83	-$128

Additional Adjustments:

Carport (Any Size)	+$10	Central Evaporative Air:	+$10

Community Adjustments:

Kenai, AK	-$286
Ketchikan, AK	-$23
Kodiak, AK	-$104

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

C. APARTMENTS

For all apartment units, use the rental chart which appropriately describes the housing class and the number of bedrooms of the subject quarters. The charts for apartments are in Tables 4a through 4d.

Assume a 2-bedroom, 2-bathroom apartment, near Juneau, Alaska, with 760 square feet. The exterior is in poor condition; the interior is in fair condition. The apartment, which was built in 1961, is 45 years old (2006-1961), has a carport, and central refrigerated air conditioning.

First, the two-bedroom chart for good condition apartments (Table 4b) should be located and used. These charts are baseline charts, which assume that each apartment is in good condition inside and outside, and has one full bathroom. Therefore, if the apartment is in good condition inside and outside and has one bathroom, no additional computations are needed. If there is a deviation from either good inside or outside condition, or there are less or more bathrooms than one, then the computations must be changed as discussed below. In the first step, Table 4b is selected as the proper chart for 2-bedroom apartments.

In the second step, the size (gross living area) is rounded **down** from 760 to 700 square feet. Under the column headed **"SQ FT**" the figure 700 should be located. All further adjustments will be taken from this row.

In the third step the appropriate age column is selected. A 45-year-old apartment is between 35 and 45 years old; therefore, the **"45 YRS OLD"** column should be used. A two-bedroom apartment, in good condition with 700 square feet of living space (gross), and which is 45 years of age, has a "Chart Rent" of $821 per month.

The first adjustment is the extra bathroom adjustment charge. Following the 700 SQ FT row along to the column headed **"PER EXTRA BATHROOM"** you will find a charge of $69. To compute the charge for the extra bathroom, multiply 1 (1 extra bath) times $69 (the extra bath charge). Add $69 to the rent.

The second and third adjustments are for a poor exterior and a fair interior condition. Follow the 700 SQ FT row across the table to the column headed **"POOR EXTERIOR/INTERIOR*"** a deduction of $15 is shown; and in the next column titled **"FAIR EXTERIOR/INTERIOR*"**, a deduction of $10 is shown. Subtract from the rent $15 for poor exterior condition, and $10 for fair interior condition.

The fourth adjustment is for a carport. Beneath the table, under **"ADDITIONAL ADJUSTMENTS"**, there is an instruction to add $20 for a carport of any size. As instructed add $20 to the rent of this apartment.

The fifth adjustment is for the evaporative air cooling system. Beneath the table, under **"ADDITIONAL ADJUSTMENTS"**, there is an instruction to add $10 for Central Evaporative Air Conditioning.

The final adjustment is the community adjustment. The apartment in this example is located near Juneau, AK. The notes beneath the table (see "**COMMUNITY ADJUSTMENTS**") show no adjustment for Juneau, AK. Therefore, rental values in Juneau for apartments are equal to or greater than the regional average. Since positive community adjustments are not applied, no community adjustment is shown for Juneau.

The last step is to round the resulting MBRR (Monthly Base Rental Rate) to the nearest whole dollar. Any amount resulting in an amount of $.50 or greater is rounded up; any amount resulting in an amount of $.49 or less is rounded down. The decision to round is discretionary.

In summary, the Monthly Base Rental Rate for the apartment in this example is determined as follows:

Chart Rent (700 SQ FT/45 years old)	$821.00
Extra Bath Adjustment (1 X $69)	+ 69.00
Poor Exterior Adjustment	-15.00
Fair Interior Adjustment	- 10.00
Carport Adjustment	+20.00
Evaporative Air Conditioning Adjustment	+10.00
Location Adjustment (Juneau, AK)	- 0.00
Monthly Base Rental Rate	$895.00
Monthly Base Rental Rate (Rounded to nearest $1)	$895.00

TABLE 4A MONTHLY BASE RENT CHART - GOOD CONDITION, 3 BEDROOM, 1 BATH APARTMENTS

ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Garage	Air Cond
600	$968	$957	$947	$937	$926	$916	$896	+$59	+$20	-$10	-$15	+$50	+$15
700	$977	$967	$957	$947	$936	$926	$905	+$69	+$20	-$10	-$15	+$50	+$15
800	$987	$977	$967	$956	$946	$936	$915	+$78	+$20	-$10	-$15	+$50	+$15
900	$997	$987	$976	$966	$956	$946	$925	+$88	+$20	-$10	-$15	+$50	+$15
1000	$1,007	$997	$986	$976	$966	$955	$935	+$98	+$20	-$10	-$15	+$50	+$15
1100	$1,017	$1,006	$996	$986	$975	$965	$945	+$108	+$20	-$10	-$15	+$50	+$15
1200	$1,026	$1,016	$1,006	$996	$985	$975	$954	+$118	+$20	-$10	-$15	+$50	+$15
1300	$1,036	$1,026	$1,016	$1,005	$995	$985	$964	+$127	+$20	-$10	-$15	+$50	+$15
1400	$1,046	$1,036	$1,025	$1,015	$1,005	$995	$974	+$137	+$20	-$10	-$15	+$50	+$15
1500	$1,056	$1,046	$1,035	$1,025	$1,015	$1,004	$984	+$147	+$20	-$10	-$15	+$50	+$15
1600	$1,066	$1,055	$1,045	$1,035	$1,024	$1,014	$994	+$157	+$20	-$10	-$15	+$50	+$15
1700	$1,075	$1,065	$1,055	$1,045	$1,034	$1,024	$1,003	+$167	+$20	-$10	-$15	+$50	+$15
1800	$1,085	$1,075	$1,065	$1,054	$1,044	$1,034	$1,013	+$176	+$20	-$10	-$15	+$50	+$15

Additional Adjustments:

Carport (Any Size)	+$20	Central Evaporative Air:	+$10
Fireplace(s)	+$20		

Community Adjustments:

Anchorage, AK	-$57
Fairbanks, AK	-$137
Kenai, AK	-$343
Ketchikan, AK	-$121
Sitka, AK	-$98

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 4B MONTHLY BASE RENT CHART - GOOD CONDITION, 2 BEDROOM, 1 BATH APARTMENTS

ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Garage	Air Cond
400	$833	$823	$812	$802	$792	$782	$761	+$39	+$20	-$10	-$15	+$50	+$15
500	$843	$833	$822	$812	$802	$791	$771	+$49	+$20	-$10	-$15	+$50	+$15
600	$853	$842	$832	$822	$811	$801	$781	+$59	+$20	-$10	-$15	+$50	+$15
700	$862	$852	$842	$832	$821	$811	$790	+$69	+$20	-$10	-$15	+$50	+$15
800	$872	$862	$852	$841	$831	$821	$800	+$78	+$20	-$10	-$15	+$50	+$15
900	$882	$872	$861	$851	$841	$831	$810	+$88	+$20	-$10	-$15	+$50	+$15
1000	$892	$882	$871	$861	$851	$840	$820	+$98	+$20	-$10	-$15	+$50	+$15
1100	$902	$891	$881	$871	$860	$850	$830	+$108	+$20	-$10	-$15	+$50	+$15
1200	$911	$901	$891	$881	$870	$860	$839	+$118	+$20	-$10	-$15	+$50	+$15
1300	$921	$911	$901	$890	$880	$870	$849	+$127	+$20	-$10	-$15	+$50	+$15
1400	$931	$921	$910	$900	$890	$880	$859	+$137	+$20	-$10	-$15	+$50	+$15
1500	$941	$931	$920	$910	$900	$889	$869	+$147	+$20	-$10	-$15	+$50	+$15
1600	$951	$940	$930	$920	$909	$899	$879	+$157	+$20	-$10	-$15	+$50	+$15

Additional Adjustments:

Carport (Any Size)	+$20	Central Evaporative Air:	+$10
Fireplace(s)	+$20		

Community Adjustments:

Anchorage, AK	-$57
Fairbanks, AK	-$137
Kenai, AK	-$343
Ketchikan, AK	-$121
Sitka, AK	-$98

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 4C MONTHLY BASE RENT CHART - GOOD CONDITION, 1 BEDROOM, 1 BATH APARTMENTS
ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Garage	Air Cond
300	$708	$698	$688	$677	$667	$657	$636	+$29	+$20	-$10	-$15	+$50	+$15
400	$718	$708	$697	$687	$677	$667	$646	+$39	+$20	-$10	-$15	+$50	+$15
500	$728	$718	$707	$697	$687	$676	$656	+$49	+$20	-$10	-$15	+$50	+$15
600	$738	$727	$717	$707	$696	$686	$666	+$59	+$20	-$10	-$15	+$50	+$15
700	$747	$737	$727	$717	$706	$696	$675	+$69	+$20	-$10	-$15	+$50	+$15
800	$757	$747	$737	$726	$716	$706	$685	+$78	+$20	-$10	-$15	+$50	+$15
900	$767	$757	$746	$736	$726	$716	$695	+$88	+$20	-$10	-$15	+$50	+$15
1000	$777	$767	$756	$746	$736	$725	$705	+$98	+$20	-$10	-$15	+$50	+$15
1100	$787	$776	$766	$756	$745	$735	$715	+$108	+$20	-$10	-$15	+$50	+$15
1200	$796	$786	$776	$766	$755	$745	$724	+$118	+$20	-$10	-$15	+$50	+$15
1300	$806	$796	$786	$775	$765	$755	$734	+$127	+$20	-$10	-$15	+$50	+$15
1400	$816	$806	$795	$785	$775	$765	$744	+$137	+$20	-$10	-$15	+$50	+$15
1500	$826	$816	$805	$795	$785	$774	$754	+$147	+$20	-$10	-$15	+$50	+$15

Additional Adjustments:

Carport (Any Size)	+$20	Central Evaporative Air:	+$10
Fireplace(s)	+$20		

Community Adjustments:

Anchorage, AK	-$57
Fairbanks, AK	-$137
Kenai, AK	-$343
Ketchikan, AK	-$121
Sitka, AK	-$98

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 4D MONTHLY BASE RENT CHART - GOOD CONDITION, 0 BEDROOM, 1 BATH APARTMENTS

ALASKA REGION

Sq Ft	5 yrs old	15 yrs old	25 yrs old	35 yrs old	45 yrs old	55 yrs old	75+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*	Garage	Air Cond
100	$574	$563	$553	$543	$532	$522	$502	+$10	+$20	-$10	-$15	+$50	+$15
200	$583	$573	$563	$553	$542	$532	$511	+$20	+$20	-$10	-$15	+$50	+$15
300	$593	$583	$573	$562	$552	$542	$521	+$29	+$20	-$10	-$15	+$50	+$15
400	$603	$593	$582	$572	$562	$552	$531	+$39	+$20	-$10	-$15	+$50	+$15
500	$613	$603	$592	$582	$572	$561	$541	+$49	+$20	-$10	-$15	+$50	+$15
600	$623	$612	$602	$592	$581	$571	$551	+$59	+$20	-$10	-$15	+$50	+$15
700	$632	$622	$612	$602	$591	$581	$560	+$69	+$20	-$10	-$15	+$50	+$15
800	$642	$632	$622	$611	$601	$591	$570	+$78	+$20	-$10	-$15	+$50	+$15
900	$652	$642	$631	$621	$611	$601	$580	+$88	+$20	-$10	-$15	+$50	+$15
1000	$662	$652	$641	$631	$621	$610	$590	+$98	+$20	-$10	-$15	+$50	+$15
1100	$672	$661	$651	$641	$630	$620	$600	+$108	+$20	-$10	-$15	+$50	+$15

Additional Adjustments:

Carport (Any Size)	+$20	Central Evaporative Air:	+$10
Fireplace(s)	+$20		

Community Adjustments:

Anchorage, AK	-$57
Fairbanks, AK	-$137
Kenai, AK	-$343
Ketchikan, AK	-$121
Sitka, AK	-$98

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

D. MOBILE HOMES, TRAVEL TRAILERS, AND HOUSEBOATS

For these housing classes, use the mobile home base rental charts (Tables 5a-c). To familiarize the reader with these charts, assume a 490 square foot, 1-bedroom mobile home built in 1972 with a ¾ bathroom. This mobile home is in poor interior and poor exterior condition and is located near Kenai, Alaska. The Monthly Base Rental Rate for the mobile home in this example is calculated from Table 5c as follows.

The 1-bedroom chart for good condition mobile homes (Table 5c) should be located and used. This chart is a baseline chart, which assumes that each mobile home is in good condition inside and outside and has one full bathroom. Therefore, if the mobile home is in good condition inside and outside and has one full bathroom, no additional computations are needed. If there is a deviation from either good inside or outside condition, or there are less or more bathrooms than one, then the computations must be changed accordingly.

First, locate Table 5c. Next, the gross **square feet** of living area should be rounded **down** to 400 square feet, and the **age** (2006-1972 = 34 years) is rounded **up** to 35+ years. The column headed **"SQ FT**" is followed down to 400. All other adjustments are taken from this row. On this row, under the column headed **"35+ YRS OLD,"** the "Chart Rent" is $489.

The base rental value of $489 ("chart rent") includes the value of one full bathroom. Since the unit in this example has only a ¾ bathroom, an adjustment must be made for the missing ¼ bathroom. At the top of the table is a column titled **"PER EXTRA BATHROOM."** Follow this column down to the 400 SQ FT row. A value of $125 is shown. Multiply this value times .25 (¼ bathroom) to calculate the value of the missing ¼ bathroom ($125 X .25 = $31.25). Subtract $31 (rounded) from the rent.

The second and third adjustments are for the condition of the unit. Follow the 400 SQ FT row to the column headed **"POOR EXTERIOR/INTERIOR*"**; subtract $15 for the poor exterior condition and another $15 for the poor interior condition.

The final adjustment is the community adjustment. The mobile home in this example is located near Kenai, AK. The notes beneath the table (see "**COMMUNITY ADJUSTMENTS**") show an adjustment of -$250 for Kenai, AK. The rental values for mobile homes in Kenai, AK are much lower than the survey area average. The rent for mobile homes which use Kenai as the nearest established community should be reduced by $250.

The Monthly Base Rental Rate for this mobile home is shown below.

Chart Rent (400 SQ FT/35+ years old)	$489.00
Bathroom Adjustment (.25 X $125)	- 31.00
Poor Exterior	- 15.00
Poor Interior	- 15.00
Location Adjustment (Kenai, AK)	-250.00

Computed Monthly Base Rental Rate..... $178.00

Monthly Base Rental Rate (Minimum Base applies)..... $265.00

Note: In this example, the Monthly Base Rental Rate computes to $178.00, which is less than the $265.00 minimum Monthly Base Rental Rate for the Alaska Survey Region (refer to the footnotes on each rent table for the minimum base rent). Therefore, the Monthly Base Rental Rate for the mobile home in this example will be set at $265.00. Keep in mind that the *Monthly Base Rental Rate* is different from the minimum monthly *final rent*. Thus, $265.00 is not the minimum final rent possible.

TABLE 5A MONTHLY BASE RENT CHART - GOOD CONDITION, 3 BEDROOM, 1 BATH MOBILE HOMES

ALASKA REGION

Sq Ft	5 yrs old	10 yrs old	15 yrs old	20 yrs old	25 yrs old	30 yrs old	35+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*
400	$810	$794	$778	$762	$746	$731	$715	$125	+$20	-$10	-$15
500	$819	$803	$787	$771	$755	$740	$724	$125	+$20	-$10	-$15
600	$828	$812	$796	$780	$765	$749	$733	$125	+$20	-$10	-$15
700	$837	$821	$805	$789	$774	$758	$742	$125	+$20	-$10	-$15
800	$846	$830	$814	$799	$783	$767	$751	$125	+$20	-$10	-$15
900	$855	$839	$823	$808	$792	$776	$760	$125	+$20	-$10	-$15
1000	$864	$848	$833	$817	$801	$785	$769	$125	+$20	-$10	-$15
1100	$873	$857	$842	$826	$810	$794	$778	$125	+$20	-$10	-$15
1200	$882	$867	$851	$835	$819	$803	$788	$125	+$20	-$10	-$15
1300	$891	$876	$860	$844	$828	$812	$797	$125	+$20	-$10	-$15
1400	$901	$885	$869	$853	$837	$822	$806	$125	+$20	-$10	-$15
1500	$910	$894	$878	$862	$846	$831	$815	$125	+$20	-$10	-$15
1600	$919	$903	$887	$871	$856	$840	$824	$125	+$20	-$10	-$15

Additional Adjustments:

Garage (Any Size)	+$20	Central Refrigerated Air Conditioning:	+$15
Carport (Any Size)	+$10	Central Evaporative Air Conditioning:	+$10

Community Adjustments:

Fairbanks, AK	-$160
Kenai, AK	-$250

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 5B MONTHLY BASE RENT CHART - GOOD CONDITION, 2 BEDROOM, 1 BATH MOBILE HOMES

ALASKA REGION

Sq Ft	5 yrs old	10 yrs old	15 yrs old	20 yrs old	25 yrs old	30 yrs old	35+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*
400	$697	$681	$665	$649	$633	$618	$602	+$125	+$20	-$10	-$15
500	$706	$690	$674	$658	$642	$627	$611	+$125	+$20	-$10	-$15
600	$715	$699	$683	$667	$652	$636	$620	+$125	+$20	-$10	-$15
700	$724	$708	$692	$676	$661	$645	$629	+$125	+$20	-$10	-$15
800	$733	$717	$701	$686	$670	$654	$638	+$125	+$20	-$10	-$15
900	$742	$726	$710	$695	$679	$663	$647	+$125	+$20	-$10	-$15
1000	$751	$735	$720	$704	$688	$672	$656	+$125	+$20	-$10	-$15
1100	$760	$744	$729	$713	$697	$681	$665	+$125	+$20	-$10	-$15
1200	$769	$754	$738	$722	$706	$690	$675	+$125	+$20	-$10	-$15
1300	$778	$763	$747	$731	$715	$699	$684	+$125	+$20	-$10	-$15
1400	$788	$772	$756	$740	$724	$709	$693	+$125	+$20	-$10	-$15
1500	$797	$781	$765	$749	$733	$718	$702	+$125	+$20	-$10	-$15

Additional Adjustments:

Garage (Any Size)	+$20	Central Refrigerated Air Conditioning:	+$15
Carport (Any Size)	+$10	Central Evaporative Air Conditioning:	+$10

Community Adjustments:

Fairbanks, AK	-$160
Kenai, AK	-$250

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

TABLE 5C MONTHLY BASE RENT CHART - GOOD CONDITION, 1 BEDROOM, 1 BATH MOBILE HOMES

ALASKA REGION

Sq Ft	5 yrs old	10 yrs old	15 yrs old	20 yrs old	25 yrs old	30 yrs old	35+ yrs old	Per Extra Bath	Excel Interior / Exterior*	Fair Interior / Exterior*	Poor Interior / Exterior*
100	$556	$540	$525	$509	$493	$477	$461	+$125	+$20	-$10	-$15
200	$565	$550	$534	$518	$502	$486	$471	+$125	+$20	-$10	-$15
300	$574	$559	$543	$527	$511	$495	$480	+$125	+$20	-$10	-$15
400	$584	$568	$552	$536	$520	$505	$489	+$125	+$20	-$10	-$15
500	$593	$577	$561	$545	$529	$514	$498	+$125	+$20	-$10	-$15
600	$602	$586	$570	$554	$539	$523	$507	+$125	+$20	-$10	-$15
700	$611	$595	$579	$563	$548	$532	$516	+$125	+$20	-$10	-$15
800	$620	$604	$588	$573	$557	$541	$525	+$125	+$20	-$10	-$15
900	$629	$613	$597	$582	$566	$550	$534	+$125	+$20	-$10	-$15
1000	$638	$622	$607	$591	$575	$559	$543	+$125	+$20	-$10	-$15
1100	$647	$631	$616	$600	$584	$568	$552	+$125	+$20	-$10	-$15
1200	$656	$641	$625	$609	$593	$577	$562	+$125	+$20	-$10	-$15

Additional Adjustments:

Garage (Any Size)	+$20	Central Refrigerated Air Conditioning:	+$15
Carport (Any Size)	+$10	Central Evaporative Air Conditioning:	+$10

Community Adjustments:

Fairbanks, AK	-$160
Kenai, AK	-$250

*If both the Exterior and Interior are in this condition, apply this factor twice.

Regardless of adjustments, the minimum base rent is $265 per month.

The appropriate CPI factor should be applied after completing the above adjustments.

E. CABINS OR LOOKOUTS

For purposes of rental rate establishment, the rental housing class most comparable to cabins or lookouts would be 1-bedroom, single-family houses, regardless of the number of bedrooms in the cabin. One-bedroom, single-family rental houses generally consist of smaller and older housing units. Where the cabins or lookouts are outfitted for housekeeping, and contain an independent primary heating system, the rental rates (including all applicable adjustments) are determined by using the 1-bedroom house chart (Table 3d).

Where a cabin or lookout lacks full housekeeping facilities (including running water, an inside heated bathroom or a central heating system), additional adjustments (shown below) must be made to the Monthly Base Rental Rate. A free-standing stove without a fan or a fireplace does not qualify as a central primary heating system. These adjustments are designed to take into consideration the inconvenience resulting from the lack of full housekeeping facilities. However, the adjusted monthly base rental rate for cabins or lookouts may not be set below the minimum Alaska monthly base rent of $265.

No Electricity = –20%

No Inside Bathroom = –20%

No Running Water = –20%

No Central Heating System = –15% (applied only if used during the heating season.)

Less Than Two Rooms (One-Room Cabin or Lookout) = –10%

F. BUNKHOUSE AND DORMITORIES

Bunkhouses and dormitories should only include housing units that have been specifically constructed or modified for use as bunkhouses or dormitories. Single-family houses, apartments or mobile homes that are **used** as dormitories or bunkhouses, must be valued as what they are (houses, apartments or mobile homes), with the rent divided by the number of **planned** occupants.

Dormitory or bunkhouse units typically lack either a living room or kitchen, or have common baths and kitchens serving many people. Many also have multiple bunk beds in large ward-like rooms. Such housing units pose a valuation problem, as they are normally found only in association with institutions such as the military or colleges, of which its occupants are members. Since these institutions do not typically rent to the public at large, one cannot obtain an arms-length market rent.

Under circumstances where there is a lack of comparable rental data, OMB Circular A-45 provides that rental rates may be established using an extension of the Principle of Comparability. Under this procedure, rental rates are established using the most comparable rental housing available, and the rate is essentially 50 percent of the average house rent.

During the February 1994 National Quarters Conference, the National Quarters Council decided that one aggregate monthly rate should be established for **all** dormitories in a survey region. This aggregate dormitory rate, which includes the value of Government-provided utilities, furnishings and services, was determined as follows. An analysis of the comparables used in this Alaska survey found that the average single-family house had 1,186 square feet of finished floor space, 2.5 bedrooms and an average monthly-adjusted contract rent of $1,125. By applying an extension of the Principle of Comparability, the Base Shelter Rental Rate (BSRR) for bunkhouses and dormitories is calculated as shown below.

During the 2002 National Quarters Conference, the National Quarters Council reviewed different dormitory costing methods for the newer types of dormitories being built by some agencies. In researching new and existing dormitory models, it was found the majority of the dormitories plan to house two occupants per room, which the current costing methodology is based upon. In addition, most occupants in dormitories share both a kitchen and bathroom. Based on these factors, the Council decided to continue using the current costing methodology.

Average adjusted contract rent / 2 = $1,125 / 2 = $562
$562 / (average # of bedrooms x 2 occupants per bedroom)
$562 / (2.5 bedrooms x 2 occupants) = $562 / 5 = $112.40 per month/per occupant

Charges were then added to this rate for utilities, services and furnishings that are provided by the Government. The aggregate value of these items was based on a study of the rates prevailing in the Alaska regional survey area. These charges were prorated based upon a 1,186 square foot, 2.5 bedroom, single-family house occupied by 2 people per bedroom. The aggregate charge for these utilities, services and furnishings was $73.87.

Monthly, weekly, and daily bunkhouse and dormitory rates are computed as follows.

TABLE 6 BUNKHOUSE/DORMITORY RENTS
ALASKA REGION

Monthly Charge

Dormitory Base Shelter Rent Rate (BSRR)	$112.40
Related Facilities Charges	$73.87
Monthly Base Rental Rate (MBRR, rounded to nearest five cents)	$186.25

Bi-Weekly Charge

To convert to bi-weekly rate, multiply MBRR by .4615 and round to nearest five cents	$85.95

Weekly Charge

To convert to weekly rate, multiply MBRR by .2308 and round to nearest five cents	$43.00

Daily Charge

To convert to daily rate, multiply MBRR by .0333 and round to nearest five cents	$6.20

Note: An administrative adjustment of –10% is permitted if 3 or more people must share a bedroom or sleeping area. Also, an administrative adjustment of –10% is permitted for dormitories that lack a kitchen or cooking facilities.

G. TRANSIENT QUARTERS

Transient quarters are those that are occupied on a transient basis, normally for a period of 90 days or less. Government-provided transient quarters offer a range of accommodations. At some locations, kitchen facilities, private telephones and private bathrooms may be available; at others, they are not provided. At some locations, maid service is provided (with varying degrees of frequency); at other locations, employees are "issued" bedding and other domestic items, and must take care of their own housekeeping arrangements.

Given the diversity of facilities and services associated with Government-provided transient quarters, the QMIS National Quarters Council determined that private housing comparable to Government transient quarters generally does not exist. Accordingly, the rental charges for transient quarters have been established by extending the principle of comparability, as provided in OMB Circular A-45.

Essentially, the rental charge for transient quarters is the sum of the monthly dormitory rate plus related facilities, a monthly charge for maid service (Table 18), and a 20 percent administrative/service charge required by OMB Circular A-45 paragraph 7.c (4)(a). Monthly, weekly and daily charges for transient quarters are shown, below, in Table 7.

TABLE 7 TRANSIENT QUARTERS RENTS
ALASKA REGION

Dormitory BSRR	$112.40
Related Facilities Charges	73.87
Maid Service (Table 18)	76.30
Subtotal	$262.55
Administrative Charge +20% (OMB Cir. A-45)	x 1.20
Transient MBRR (rounded to nearest five cents)	$315.05
Monthly Charge	$315.05
Bi-Weekly Charge ($315.05 x .4615 Rounded)	$145.40
Weekly Charge ($315.05 x .2308 Rounded)	$72.71
Daily Charge ($315.05 x .0333 Rounded)	$10.49

H. TRAILER PADS

During the Alaska survey, trailer pads were surveyed in a variety of mobile home parks. They differed in physical characteristics, utilities, rents, and geographical location.

A simplified analysis of this data was done. The value of related facilities in the contract rent was subtracted to arrive at an adjusted rent. After excluding extreme outliers, the average adjusted rent was determined for the remaining samples.

The average adjusted rent was then divided into the actual rent of each remaining sample. Those communities where the adjusted contract rents were significantly lower than the average rent for the region were adjusted to the community average trailer pad rents. As with houses, apartments and mobile homes, those trailer pads in high-cost areas are "capped" at the average trailer pad rent for the survey region.

During the February 1993 National Quarters Conference, the National Quarters Officers of the agencies that participate in the Quarters Management Program agreed to assess the monthly base rental rate for single-wide trailer pads for **all** Government-furnished trailer pads. This is because most employees do not own/occupy doublewide mobile homes, and because the market differences are negligible.

To determine the trailer pad Monthly Base Rental Rate, use the applicable rate contained in Table 8. Do not use the rates in Table 8 if the trailer pad is occupied by a Government-owned or leased mobile home; this is a "trailer" or "mobile home" housing type and the "space rent" is already included in the base rent calculation for these quarters.

For example, if a trailer pad were occupied by a tenant-owned mobile home located near Anchorage, Alaska, the base rent for this pad would be $236 per month. If, for another example, the trailer space were located near Kenai, Alaska, the base rental rate for this pad would be $255 (the "All Other Locations" charge). No other adjustments are made for physical characteristics, such as the date the trailer pad was installed, the front or square footage, or the total number of sites at that location.

However, all appropriate administrative adjustments (such as amenity and isolation adjustments), as well as all charges for Government provided related facilities (such as utilities and furnishings) should be applied to the Monthly Base Rental Rates in Table 8 to determine the monthly net rental charge.

TABLE 8 TRAILER SPACES - MONTHLY BASE RENTAL RATES
ALASKA REGION

COMMUNITIES	MONTHLY BASE RENTAL RATES
ALASKA	
Anchorage, AK	$236
Fairbanks, AK	$214
Sitka, AK	$244
ALL OTHER LOCATIONS	**$255**

I. OBSOLETE QUARTERS

OMB Circular A-45 (revised October 20, 1993) excludes from the term rental quarters "…housing which due to extreme deterioration is unsuitable for occupancy except in exigent circumstances. …" The net effect of this change means there will be no base rental rate for obsolete quarters. However, assessments will be made for utilities, furnishings, appliances and any other services that are provided by the Government.

The Department of the Interior Quarters Handbook: Department Manual 400 (DM 400) and the regulations of other QMIS program participants require that housing used as employee quarters must be safe, sanitary, and energy efficient. Where housing is in obsolete condition, it is by definition unfit for use as employee housing, and should be renovated, replaced, destroyed or used for non-residential purposes. Section 7.3A of DM 400 also provides that the appropriate Program Assistant Secretary, or his/her designee (Bureau Head), may authorize temporary occupancy, for a period not to exceed one year, pending a rehabilitation or replacement action where sufficient written justification is provided.

VI. CHARGES FOR UTILITIES, APPLIANCES AND RELATED SERVICES

A. BACKGROUND

OMB Circular A-45 requires that, whenever possible, utilities should be provided by a private company and billed directly to quarters occupants. Where Government-furnished utilities are provided, they should be metered or measured. When Government-furnished utilities are not metered or measured, consumption will be determined from an analysis of the average amounts of utilities used in comparable private housing in the nearest established community or survey area. **Where the Government furnishes utilities, and where the quarters rental rates are established by the regional survey method, the utility rates shall be the regional average utility rates prescribed in this report – not the rates prevailing in the nearest established community.**

The regional average utility rates contained in this report include all applicable delivery charges, adjustments, taxes and surcharges. Charges for Government-provided appliances, services and furnishings are based upon nationwide average costs.

The following sections of this report detail the consumption and cost data to be used in the circumstances described above. The cost data in this report will be updated by the Quarters Operations Office each year and distributed with the Consumer Price Index (CPI) adjustment that takes effect each year.

B. ENERGY CONSUMPTION STUDY

1. **General.** Energy consumption estimates are required where the Government furnishes the space heating or cooling fuel and the electricity, and where consumption is neither metered nor measured. In such instances, average energy consumption must be estimated and the Government must assess a charge based on private sector energy costs in the survey area. No methodology for estimating energy consumption can exactly predict the amounts of energy needed to heat or cool specific dwellings. Precise consumption measurements are possible only when metering is used. However, the methodology used in this report will yield **reasonable** estimates of the heating and cooling energy consumption requirements of unmetered dwellings. The methodology employed in this section was contractor-developed. For this report, however, the contractor-provided tables and conversion charts have been reformatted, and the methodology has been re-stated, to simplify the process of estimating energy consumption requirements. The unit costs for various fuel types and for electricity (e.g., the cost per gallon for fuel oil and propane; the cost per MCF (1,000 cubic feet) for natural gas; and the cost per KwH for electricity) are regional averages of the unit fuel/electricity prices gathered in each community surveyed for rental comparables.

2. **Housing Prototypes**. For the Alaska energy study, estimates of the heating and cooling energy requirements were prepared for each of the following six prototypical housing units.

   Type I – Single family, one story, no basement

   Type II – Single family, one story, full basement

   Type III – Single family, two story, no basement

Type IV – Single family, two story, full basement

Type V – Apartment unit

Type VI – Mobile Home

3. **Assumptions**. For each of the housing prototypes, the following assumptions were made:

   a. Location – The housing is located in Anchorage, Alaska (the Baseline City.)

   b. R values – Each housing type has the R values of insulation in floors, walls, and ceilings recommended in the HUD Minimum Property Standards (HUD-MPS) for the Anchorage, AK area.

   c. Occupants – The housing contains an average compliment of occupants who are energy conscious (one person per 500 feet of floor space was assumed).

   d. All measurements are of finished living space only and are based upon exterior dimensions.

   e. Condition – The housing is in good condition.

   f. Building shape – A rectangular shape with a ratio of 2:1 was established. This provides more building skin than a square configuration therefore; the rectangular shape yields a conservative estimate of skin loads.

   g. Window area – A window area of 10 percent of wall area was used to match UBC (Uniform Building Code) minimum window area standards.

   h. Roof type – A flat or pitched roof with ceiling insulation was assumed in all cases.

   i. Air changes – 1.5 air changes per hour were established as representing a conservative estimate of air changes in residential applications.

   j. Perimeter loss – Approximately 10 percent of overall building load is attributed to the slab on grade floors with rigid insulation to a value of R-6.

4. Using the above assumptions, infiltration factors developed by the Department of Energy, R values, building dimensions, and cooling and heating degree days, a contractor has formulated methodologies for estimating British Thermal Unit (BTU) and kilowatt hour (KwH) consumption rates and costs for heating and cooling. The relevant portions of the methodology are explained below.

C. SPACE HEATING (FOSSIL FUEL) CONSUMPTION/COST CALCULATIONS

To illustrate the procedure for calculating the cost of heating with fossil fuel, a single story 1,850 square foot house, with no basement, located near Anchorage, Alaska will be used as an example.

1. The first step is to select from among Tables 9a through 9f the table that most closely describes the quarters unit at issue. In this case, Table 9a is for a 1-story single-family house with a partial (50 percent or less) or no basement (Prototype I). When determining the prototype, use the total

basement (finished and unfinished) square footage. Unfinished space is only considered when determining the prototype. It is never used when using a rent setting or consumption chart. Table 9a should be selected in this example.

2. The second step is to determine the number of BTUs consumed **annually** for heating the house used in this example. Select from Table 9a the annual MBTU (million BTUs) consumption appropriate for the heating degree days (HDDs) and the gross **finished** square footage of the house in this example. Use the table as shown below.

   a. Find the number of HDDs for the established community near which the quarters are located. Table 10 contains the HDDs for the nearest established communities in the Alaska survey region; this table shows that Anchorage, AK has 10,470 HDDs. In Table 9a, 10,470 HDDs lies between the columns headed "**10,000**" and "**10,500.**" Round 10,470 HDDs down to 10,000 HDDs.

   b. In Table 9a, 1,850 square feet (the size of the house used in the example) lies between the rows headed "1,800" and "2,000" square feet; round 1,850 down to 1,800 square feet.

   c. From Table 9a (1,800 square feet and 10,000 HDDs) the annual MBTU consumption rate is 141.8 MBTUs.

3. The third step is to calculate the amount of fossil fuel needed to produce 141.8 MBTUs. Table 11 shows the amount of fossil fuel needed to produce 1 MBTU. The total amount of heating fuel required to produce 141.8 MBTUs is computed by multiplying the appropriate fuel factor in Table 11 by the number of MBTUs. In this case the fuel required is:

Natural gas:	141.8 MBTUs x 1 MCF	=	141.8 MCF.
Propane:	141.8 MBTUs x 10.2 gallons	=	1,446.36 gallons
Fuel oil:	141.8 MBTUs x 7.04 gallons	=	998.27 gallons

4. The fourth step is to calculate the annual cost of the fuel consumed. This can be done by multiplying the annual fuel consumption by the unit fuel charges shown in Table 12. Following this procedure, the charge for fuel consumed annually to produce 141.8 MBTUs is:

Natural gas:	141.8 MCF x $7.80 (per MCF)	=	$1,106.04 annually
Propane:	1,446.36 gallons x $4.24 (per gallon)	=	$6,132.57 annually
Fuel oil:	998.27 gallons x $3.24 (per gallon)	=	$3,234.39 annually

5. The fifth step is to calculate the monthly charge for fossil heating fuel. This is done simply by dividing the annual charges (above) by 12 (months). In this manner the monthly charges are: natural gas = $92.17; propane = $511.05; and fuel oil = $269.53.

6. The final step is to multiply the monthly charge (computed in step 5 above) by the appropriate HUD MPS Heating Zone conversion factor (Table 13). In order to use Table 13, it is first necessary to determine the HUD MPS Zone for the community at issue (anchorage, AK). Table 10 shows the HUD MPS Zones for the nearest established communities located within the Alaska survey region. From Table 10, it can be seen that Anchorage, AK is in MPS Zone 8. The conversion factor can now be found in Table 13. The conversion factor for a single story dwelling with no basement (Prototype I) in HUD MPS Zone 8 is 1.00. Multiply the monthly charges determined in step 5 above by 1.00 (the

conversion factor). In this manner, the heating fuel charge can be computed for any quarters unit in any community or location. In this example, the final monthly fossil fuel heating costs are $92.17 ($92.17 x 1.00) for natural gas, $511.05 ($511.05 x 1.00) for propane; and $269.53 ($269.53 x 1.00) for fuel oil per month.

The above example pertained to a single story dwelling with a partial (50 percent or less) or no basement. When calculating the heating fuel charge for a different type of housing (including apartments and mobile homes), use the table (Tables 9a through 9f) which most closely describes the quarters unit to compute the annual MBTU consumption.

TABLE 9A ANNUAL MBTU USAGE (MILLIONS BTUS) - PROTOTYPE I

Single Family, One Story, Partial (Less Than 50%) or No Basement

ALASKA REGION

Baseline City: Anchorage, Alaska

Gross Sq Ft	Heating Degree Days																
	7,000	**7,500**	**8,000**	**8,500**	**9,000**	**9,500**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	5.5	5.9	6.3	6.7	7.1	7.5	7.9	8.3	8.7	9.1	9.5	9.8	10.2	10.6	11.0	11.4	11.8
200	11.0	11.8	12.6	13.4	14.2	15.0	15.8	16.5	17.3	18.1	18.9	19.7	20.5	21.3	22.1	22.8	23.6
400	22.1	23.6	25.2	26.8	28.4	29.9	31.5	33.1	34.7	36.2	37.8	39.4	41.0	42.5	44.1	45.7	47.3
600	33.1	35.4	37.8	40.2	42.5	44.9	47.3	49.6	52.0	54.3	56.7	59.1	61.4	63.8	66.2	68.5	70.9
800	44.1	47.3	50.4	53.6	56.7	59.9	63.0	66.2	69.3	72.5	75.6	78.8	81.9	85.1	88.2	91.4	94.5
1,000	55.1	59.1	63.0	67.0	70.9	74.8	78.8	82.7	86.6	90.6	94.5	98.5	102.4	106.3	110.3	114.2	118.1
1,200	66.2	70.9	75.6	80.3	85.1	89.8	94.5	99.2	104.0	108.7	113.4	118.1	122.9	127.6	132.3	137.1	141.8
1,400	77.2	82.7	88.2	93.7	99.2	104.8	110.3	115.8	121.3	126.8	132.3	137.8	143.4	148.9	154.4	159.9	165.4
1,600	88.2	94.5	100.8	107.1	113.4	119.7	126.0	132.3	138.6	144.9	151.2	157.5	163.8	170.1	176.4	182.7	189.0
1,800	99.2	106.3	113.4	120.5	127.6	134.7	141.8	148.9	156.0	163.0	170.1	177.2	184.3	191.4	198.5	205.6	212.7
2,000	110.3	118.1	126.0	133.9	141.8	149.7	157.5	165.4	173.3	181.2	189.0	196.9	204.8	212.7	220.5	228.4	236.3
2,200	121.3	130.0	138.6	147.3	156.0	164.6	173.3	181.9	190.6	199.3	207.9	216.6	225.3	233.9	242.6	251.3	259.9
2,400	132.3	141.8	151.2	160.7	170.1	179.6	189.0	198.5	207.9	217.4	226.8	236.3	245.7	255.2	264.7	274.1	283.6
2,600	143.4	153.6	163.8	174.1	184.3	194.5	204.8	215.0	225.3	235.5	245.7	256.0	266.2	276.5	286.7	296.9	307.2
2,800	154.4	165.4	176.4	187.5	198.5	209.5	220.5	231.6	242.6	253.6	264.7	275.7	286.7	297.7	308.8	319.8	330.8
3,000	165.4	177.2	189.0	200.9	212.7	224.5	236.3	248.1	259.9	271.7	283.6	295.4	307.2	319.0	330.8	342.6	354.4

TABLE 9B ANNUAL MBTU USAGE (MILLIONS BTUS) - PROTOTYPE II

Single Family, Single Story, Full Basement

ALASKA REGION

Baseline City: Anchorage, Alaska

	Heating Degree Days																
Gross Sq Ft	**7,000**	**7,500**	**8,000**	**8,500**	**9,000**	**9,500**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	4.5	4.8	5.1	5.4	5.7	6.0	6.4	6.7	7.0	7.3	7.6	7.9	8.3	8.6	8.9	9.2	9.5
200	8.9	9.5	10.2	10.8	11.4	12.1	12.7	13.4	14.0	14.6	15.3	15.9	16.5	17.2	17.8	18.4	19.1
400	17.8	19.1	20.3	21.6	22.9	24.2	25.4	26.7	28.0	29.2	30.5	31.8	33.1	34.3	35.6	36.9	38.1
600	26.7	28.6	30.5	32.4	34.3	36.2	38.1	40.1	42.0	43.9	45.8	47.7	49.6	51.5	53.4	55.3	57.2
800	35.6	38.1	40.7	43.2	45.8	48.3	50.9	53.4	55.9	58.5	61.0	63.6	66.1	68.7	71.2	73.7	76.3
1,000	44.5	47.7	50.9	54.0	57.2	60.4	63.6	66.8	69.9	73.1	76.3	79.5	82.6	85.8	89.0	92.2	95.4
1,200	53.4	57.2	61.0	64.8	68.7	72.5	76.3	80.1	83.9	87.7	91.5	95.4	99.2	103.0	106.8	110.6	114.4
1,400	62.3	66.8	71.2	75.7	80.1	84.6	89.0	93.5	97.9	102.4	106.8	111.3	115.7	120.2	124.6	129.1	133.5
1,600	71.2	76.3	81.4	86.5	91.5	96.6	101.7	106.8	111.9	117.0	122.1	127.1	132.2	137.3	142.4	147.5	152.6
1,800	80.1	85.8	91.5	97.3	103.0	108.7	114.4	120.2	125.9	131.6	137.3	143.0	148.8	154.5	160.2	165.9	171.6
2,000	89.0	95.4	101.7	108.1	114.4	120.8	127.1	133.5	139.9	146.2	152.6	158.9	165.3	171.6	178.0	184.4	190.7
2,200	97.9	104.9	111.9	118.9	125.9	132.9	139.9	146.9	153.8	160.8	167.8	174.8	181.8	188.8	195.8	202.8	209.8
2,400	106.8	114.4	122.1	129.7	137.3	144.9	152.6	160.2	167.8	175.5	183.1	190.7	198.3	206.0	213.6	221.2	228.9
2,600	115.7	124.0	132.2	140.5	148.8	157.0	165.3	173.6	181.8	190.1	198.3	206.6	214.9	223.1	231.4	239.7	247.9
2,800	124.6	133.5	142.4	151.3	160.2	169.1	178.0	186.9	195.8	204.7	213.6	222.5	231.4	240.3	249.2	258.1	267.0
3,000	133.5	143.0	152.6	162.1	171.6	181.2	190.7	200.3	209.8	219.3	228.9	238.4	247.9	257.5	267.0	276.5	286.1

TABLE 9C ANNUAL MBTU USAGE (MILLIONS BTUS) - PROTOTYPE III

Single Family, Two Story, Partial (Less Than 50%) or No Basement

ALASKA REGION

Baseline City: Anchorage, Alaska

	Heating Degree Days																
Gross Sq Ft	**7,000**	**7,500**	**8,000**	**8,500**	**9,000**	**9,500**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	4.9	5.3	5.6	6.0	6.3	6.7	7.0	7.4	7.7	8.1	8.4	8.8	9.1	9.5	9.8	10.2	10.5
200	9.8	10.5	11.2	11.9	12.6	13.3	14.0	14.7	15.4	16.1	16.8	17.5	18.2	18.9	19.6	20.3	21.0
400	19.6	21.0	22.4	23.8	25.2	26.7	28.1	29.5	30.9	32.3	33.7	35.1	36.5	37.9	39.3	40.7	42.1
600	29.5	31.6	33.7	35.8	37.9	40.0	42.1	44.2	46.3	48.4	50.5	52.6	54.7	56.8	58.9	61.0	63.1
800	39.3	42.1	44.9	47.7	50.5	53.3	56.1	58.9	61.7	64.5	67.3	70.1	72.9	75.7	78.6	81.4	84.2
1,000	49.1	52.6	56.1	59.6	63.1	66.6	70.1	73.6	77.1	80.7	84.2	87.7	91.2	94.7	98.2	101.7	105.2
1,200	58.9	63.1	67.3	71.5	75.7	80.0	84.2	88.4	92.6	96.8	101.0	105.2	109.4	113.6	117.8	122.0	126.2
1,400	68.7	73.6	78.6	83.5	88.4	93.3	98.2	103.1	108.0	112.9	117.8	122.7	127.6	132.6	137.5	142.4	147.3
1,600	78.6	84.2	89.8	95.4	101.0	106.6	112.2	117.8	123.4	129.1	134.7	140.3	145.9	151.5	157.1	162.7	168.3
1,800	88.4	94.7	101.0	107.3	113.6	119.9	126.2	132.6	138.9	145.2	151.5	157.8	164.1	170.4	176.7	183.1	189.4
2,000	98.2	105.2	112.2	119.2	126.2	133.3	140.3	147.3	154.3	161.3	168.3	175.3	182.4	189.4	196.4	203.4	210.4
2,200	108.0	115.7	123.4	131.2	138.9	146.6	154.3	162.0	169.7	177.4	185.2	192.9	200.6	208.3	216.0	223.7	231.4
2,400	117.8	126.2	134.7	143.1	151.5	159.9	168.3	176.7	185.2	193.6	202.0	210.4	218.8	227.2	235.7	244.1	252.5
2,600	127.6	136.8	145.9	155.0	164.1	173.2	182.4	191.5	200.6	209.7	218.8	227.9	237.1	246.2	255.3	264.4	273.5
2,800	137.5	147.3	157.1	166.9	176.7	186.6	196.4	206.2	216.0	225.8	235.7	245.5	255.3	265.1	274.9	284.8	294.6
3,000	147.3	157.8	168.3	178.8	189.4	199.9	210.4	220.9	231.4	242.0	252.5	263.0	273.5	284.1	294.6	305.1	315.6

TABLE 9D ANNUAL MBTU USAGE (MILLIONS BTUS) - PROTOTYPE IV

Single Family, Two Story, Full Basement
ALASKA REGION

Baseline City: Anchorage, Alaska

Gross Sq Ft	Heating Degree Days																
	7,000	**7,500**	**8,000**	**8,500**	**9,000**	**9,500**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	5.3	5.7	6.1	6.5	6.8	7.2	7.6	8.0	8.3	8.7	9.1	9.5	9.9	10.2	10.6	11.0	11.4
200	10.6	11.4	12.1	12.9	13.7	14.4	15.2	15.9	16.7	17.5	18.2	19.0	19.7	20.5	21.2	22.0	22.8
400	21.2	22.8	24.3	25.8	27.3	28.8	30.4	31.9	33.4	34.9	36.4	37.9	39.5	41.0	42.5	44.0	45.5
600	31.9	34.1	36.4	38.7	41.0	43.3	45.5	47.8	50.1	52.4	54.6	56.9	59.2	61.5	63.7	66.0	68.3
800	42.5	45.5	48.6	51.6	54.6	57.7	60.7	63.7	66.8	69.8	72.9	75.9	78.9	82.0	85.0	88.0	91.1
1,000	53.1	56.9	60.7	64.5	68.3	72.1	75.9	79.7	83.5	87.3	91.1	94.9	98.7	102.4	106.2	110.0	113.8
1,200	63.7	68.3	72.9	77.4	82.0	86.5	91.1	95.6	100.2	104.7	109.3	113.8	118.4	122.9	127.5	132.0	136.6
1,400	74.4	79.7	85.0	90.3	95.6	100.9	106.2	111.6	116.9	122.2	127.5	132.8	138.1	143.4	148.7	154.1	159.4
1,600	85.0	91.1	97.1	103.2	109.3	115.4	121.4	127.5	133.6	139.6	145.7	151.8	157.8	163.9	170.0	176.1	182.1
1,800	95.6	102.4	109.3	116.1	122.9	129.8	136.6	143.4	150.3	157.1	163.9	170.7	177.6	184.4	191.2	198.1	204.9
2,000	106.2	113.8	121.4	129.0	136.6	144.2	151.8	159.4	167.0	174.5	182.1	189.7	197.3	204.9	212.5	220.1	227.7
2,200	116.9	125.2	133.6	141.9	150.3	158.6	167.0	175.3	183.7	192.0	200.3	208.7	217.0	225.4	233.7	242.1	250.4
2,400	127.5	136.6	145.7	154.8	163.9	173.0	182.1	191.2	200.3	209.5	218.6	227.7	236.8	245.9	255.0	264.1	273.2
2,600	138.1	148.0	157.8	167.7	177.6	187.4	197.3	207.2	217.0	226.9	236.8	246.6	256.5	266.4	276.2	286.1	296.0
2,800	148.7	159.4	170.0	180.6	191.2	201.9	212.5	223.1	233.7	244.4	255.0	265.6	276.2	286.9	297.5	308.1	318.7
3,000	159.4	170.7	182.1	193.5	204.9	216.3	227.7	239.0	250.4	261.8	273.2	284.6	296.0	307.3	318.7	330.1	341.5

TABLE 9E ANNUAL MBTU USAGE (MILLIONS BTUS) - PROTOTYPE V

Apartments

ALASKA REGION

Baseline City: Anchorage, Alaska

	Heating Degree Days																
Gross Sq Ft	**7,000**	**7,500**	**8,000**	**8,500**	**9,000**	**9,500**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	3.8	4.1	4.3	4.6	4.9	5.1	5.4	5.7	5.9	6.2	6.5	6.8	7.0	7.3	7.6	7.8	8.1
200	7.6	8.1	8.6	9.2	9.7	10.3	10.8	11.4	11.9	12.4	13.0	13.5	14.1	14.6	15.1	15.7	16.2
400	15.1	16.2	17.3	18.4	19.5	20.5	21.6	22.7	23.8	24.9	25.9	27.0	28.1	29.2	30.3	31.4	32.4
600	22.7	24.3	25.9	27.6	29.2	30.8	32.4	34.1	35.7	37.3	38.9	40.5	42.2	43.8	45.4	47.0	48.7
800	30.3	32.4	34.6	36.8	38.9	41.1	43.2	45.4	47.6	49.7	51.9	54.1	56.2	58.4	60.5	62.7	64.9
1,000	37.8	40.5	43.2	45.9	48.7	51.4	54.1	56.8	59.5	62.2	64.9	67.6	70.3	73.0	75.7	78.4	81.1
1,200	45.4	48.7	51.9	55.1	58.4	61.6	64.9	68.1	71.4	74.6	77.8	81.1	84.3	87.6	90.8	94.1	97.3
1,400	53.0	56.8	60.5	64.3	68.1	71.9	75.7	79.5	83.3	87.0	90.8	94.6	98.4	102.2	106.0	109.7	113.5
1,600	60.5	64.9	69.2	73.5	77.8	82.2	86.5	90.8	95.1	99.5	103.8	108.1	112.4	116.8	121.1	125.4	129.7
1,800	68.1	73.0	77.8	82.7	87.6	92.4	97.3	102.2	107.0	111.9	116.8	121.6	126.5	131.4	136.2	141.1	146.0
2,000	75.7	81.1	86.5	91.9	97.3	102.7	108.1	113.5	118.9	124.3	129.7	135.1	140.6	146.0	151.4	156.8	162.2
2,200	83.3	89.2	95.1	101.1	107.0	113.0	118.9	124.9	130.8	136.8	142.7	148.7	154.6	160.6	166.5	172.4	178.4
2,400	90.8	97.3	103.8	110.3	116.8	123.3	129.7	136.2	142.7	149.2	155.7	162.2	168.7	175.2	181.6	188.1	194.6
2,600	98.4	105.4	112.4	119.5	126.5	133.5	140.6	147.6	154.6	161.6	168.7	175.7	182.7	189.7	196.8	203.8	210.8
2,800	106.0	113.5	121.1	128.7	136.2	143.8	151.4	158.9	166.5	174.1	181.6	189.2	196.8	204.3	211.9	219.5	227.0
3,000	113.5	121.6	129.7	137.8	146.0	154.1	162.2	170.3	178.4	186.5	194.6	202.7	210.8	218.9	227.0	235.2	243.3

TABLE 9F ANNUAL MBTU USAGE (MILLIONS BTUS) - PROTOTYPE VI

Mobile Homes
ALASKA REGION

Baseline City: Anchorage, Alaska

Gross Sq Ft	Heating Degree Days																
	7,000	**7,500**	**8,000**	**8,500**	**9,000**	**9,500**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	10.6	11.3	12.1	12.8	13.6	14.3	15.1	15.9	16.6	17.4	18.1	18.9	19.6	20.4	21.1	21.9	22.6
200	21.1	22.6	24.2	25.7	27.2	28.7	30.2	31.7	33.2	34.7	36.2	37.7	39.3	40.8	42.3	43.8	45.3
400	42.3	45.3	48.3	51.3	54.3	57.4	60.4	63.4	66.4	69.4	72.5	75.5	78.5	81.5	84.5	87.6	90.6
600	63.4	67.9	72.5	77.0	81.5	86.1	90.6	95.1	99.6	104.2	108.7	113.2	117.8	122.3	126.8	131.3	135.9
800	84.5	90.6	96.6	102.7	108.7	114.7	120.8	126.8	132.9	138.9	144.9	151.0	157.0	163.0	169.1	175.1	181.2
1,000	105.7	113.2	120.8	128.3	135.9	143.4	151.0	158.5	166.1	173.6	181.2	188.7	196.3	203.8	211.4	218.9	226.4
1,200	126.8	135.9	144.9	154.0	163.0	172.1	181.2	190.2	199.3	208.3	217.4	226.4	235.5	244.6	253.6	262.7	271.7
1,400	147.9	158.5	169.1	179.6	190.2	200.8	211.4	221.9	232.5	243.1	253.6	264.2	274.8	285.3	295.9	306.5	317.0
1,600	169.1	181.2	193.2	205.3	217.4	229.5	241.5	253.6	265.7	277.8	289.9	301.9	314.0	326.1	338.2	350.2	362.3
1,800	190.2	203.8	217.4	231.0	244.6	258.2	271.7	285.3	298.9	312.5	326.1	339.7	353.3	366.8	380.4	394.0	407.6
2,000	211.4	226.4	241.5	256.6	271.7	286.8	301.9	317.0	332.1	347.2	362.3	377.4	392.5	407.6	422.7	437.8	452.9
2,200	232.5	249.1	265.7	282.3	298.9	315.5	332.1	348.7	365.3	381.9	398.6	415.2	431.8	448.4	465.0	481.6	498.2
2,400	253.6	271.7	289.9	308.0	326.1	344.2	362.3	380.4	398.6	416.7	434.8	452.9	471.0	489.1	507.2	525.4	543.5
2,600	274.8	294.4	314.0	333.6	353.3	372.9	392.5	412.1	431.8	451.4	471.0	490.6	510.3	529.9	549.5	569.1	588.8
2,800	295.9	317.0	338.2	359.3	380.4	401.6	422.7	443.8	465.0	486.1	507.2	528.4	549.5	570.7	591.8	612.9	634.1
3,000	317.0	339.7	362.3	385.0	407.6	430.3	452.9	475.5	498.2	520.8	543.5	566.1	588.8	611.4	634.1	656.7	679.3

TABLE 10 HEATING/COOLING DEGREE DAYS AND MPS ZONES
ALASKA REGION

Community	Heating Degree Days	Cooling Degree Days	HUD MPS Zone
ALASKA			
Anchorage, AK	10,470	3	8
Bethel, AK	12,769	0	8
Fairbanks, AK	13,980	74	8
Juneau, AK	8,574	0	8
Kenai, AK	10,942	0	8
Ketchikan, AK	7,207	11	8
Kodiak, AK	8,923	0	8
Sitka, AK	7,272	0	8

TABLE 11 FUEL REQUIRED TO PRODUCE 1 MBTU
ALL REGIONS

Type of Fuel	Amount Needed to Produce 1 MBTU
Natural Gas	1 MCF (1,000 cu. Ft.)
Propane	10.2 Gallons
Fuel Oil #2	7.04 Gallons

TABLE 12 HEATING FUEL COST
ALASKA REGION

Type of Fuel	Charge per unit
Natural Gas	$7.80
Propane	$4.24
Fuel Oil #2	$3.24

TABLE 13 MPS HEATING ZONE CONVERSION FACTORS

ALASKA REGION

	Dwelling Prototypes					
	I	II	III	IV	V	VI
HUD MPS Heating Zone	Single Story No Basement	Single Story Full Basement	Double Story No Basement	Double Story Full Basement	Apart-ments	Mobile Homes
1						
2						
3						
4						
5						
6						
7						
8	1.00	1.00	1.00	1.00	1.00	1.00

D. SPACE HEATING (ELECTRICITY) CONSUMPTION/COST CALCULATIONS

The procedure for calculating electrical consumption and costs for space heating (where electricity is unmetered or otherwise unmeasured) is similar to the procedure used for fossil fuels. Tables 14a through 14f are used.

1. Select from these tables the dwelling prototype most similar to the quarters at issue.

2. Determine the annual kilowatt hour (KwH) consumption by finding the appropriate columns for square feet and HDD (heating degree days). Note: HDDs for the nearest established communities may be found in Table 10.

3. Divide the annual KwH by 12 to determine the monthly average electrical consumption.

4. Adjust for HUD MPS Heating Zone, using the conversion factors in Table 13.

5. Adjust for heat pump (if applicable).

6. Determine the appropriate charge per KwH from the table below. **Do not calculate the total cost of electricity in steps such as the first 500 KwH costs so much, then the second 500 KwH costs so much, etc.**

KwH Consumed Per Month	Alaska Region Charge per KwH
1 – 500	$.141
501 – 1,000	$.148
1,001 – 1,500	$.151
Over 1,500	$.152

7. Compute the monthly charge for space heating by multiplying the appropriate charge per KwH times the number of KwH consumed per month.

8. Example: The average monthly electric heating charge for a single family, 2,100 square foot, two story, no basement home located near Fairbanks, Alaska is computed as follows:

   a. Step 1. Select the table (table 14a through f) that most closely describes the quarters unit at issue. In this case, table 14c (single family, two story, no basement - prototype III) should be selected.

   b. Step 2. Determine from table 14c the annual KwH consumption appropriate for the heating degree days (HDD) and the gross square footage of the house in this example. Use the table as follows:

      1) Find the number of heating degree days for the established community in which the quarters is located. Table 10 (which contains the HDD for established communities in the Alaska survey region) shows that Fairbanks, AK has 13,980 HDD. In table 14c, the number of

HDDs in Fairbanks, AK (13,980) lies between the column headed 13,500 and the column headed 14,000. Round down to 13,500 HDD.

2) In table 14c, 2,100 square feet (the size of the house used in this example) lies between 2,000 and 2,200 square feet. Round 2,100 down to 2,000 square feet.

3) From table 14c (2,000 square feet and 13,500 HDD) the annual KwH consumption rate is 44,387 KwH.

c. Step 3. Calculate the monthly KwH consumption by dividing the annual KwH by 12 (months). In this instance, the monthly consumption is 3,698.92 KwH (44,387 / 12 = 3,698.92).

d. Step 4, HUD MPS Zone adjustment. The HUD MPS Zone adjustment is made as follows:

1) Use Table 10 to find the HUD MPS zone for the community at issue. In this manner, Fairbanks, AK is found to be in HUD MPS Zone 8.

2) In Table 13, determine the adjustment factor for the appropriate dwelling type and MPS zone. The factor for housing prototype III in HUD MPS zone 8 is 1.00.

3) Multiply the monthly electric consumption (as computed in paragraph 8c, above) times the HUD MPS adjustment factor (3,698.92 x 1.00 = 3,698.92 KwH per month).

e. Step 5, **Adjustment for heat pump**. The process described above is used for computing the electrical consumption for heating with a straight resistance heating system. Where a dwelling is heated with an electric heat pump, the straight resistance heating consumption (3,698.92 KwH in this example) should be multiplied by a factor of .75, which represents the greater efficiency of the heat pump. In this example, the monthly electric consumption for a heat pump as the heating source would be 2,774.19 (3,698.92 x .75 = 2,774.19).

f. Step 6. The final step is to compute the monthly charge for the electricity consumed. This is done by multiplying the charge per KwH times the KwH consumed per month. The appropriate charge per KwH may be found in the table below.

KwH Consumed Per Month	Alaska Region Charge per KwH
1 – 500	$.141
501 – 1,000	$.148
1,001 – 1,500	$.151
Over 1,500	$.152

In this example, the average monthly consumption (3,698.92 KwH) for resistance heat falls in the "Over 1,500" KwH per month consumption category; the appropriate charge is $0.152 per KwH. The average monthly consumption (2,774.19 KwH) for a heat pump also falls in the "Over 1,500" KwH per month consumption category; and the appropriate unit charge is $0.152 per KwH.

Therefore, the monthly electric heating charge for the house used in this example is computed as follows:

Resistance heat:	3,698.92 KwH x $.152	=	$562.24 monthly
Heat pump:	2,774.19 KwH x $.152	=	$421.68 monthly

E. SPACE COOLING CONSUMPTION/COST CALCULATIONS

Space cooling costs are calculated in the same manner as for electric space heating except that Cooling Degree Days (CDD) are used in lieu of HDD values. CDD values for the Nearest Established Communities are found in Table 10. Additionally, only Tables 14a through 14f are used in calculating cooling energy consumption. Briefly, the steps are as follows.

1. Select from Tables 14a through 14f, the table that most closely describes the quarters unit at issue.

2. Based on the size of the dwelling (square feet) and the number of CDD (from Table 10), use the appropriate Table (14a-f) to determine the annual KwH consumption.

3. Divide the annual KwH consumption by 12 (months) to determine the average number of KwH consumed per month.

4. Apply the HUD MPS Zone adjustment factor.

5. Apply the Coefficient of Performance (COP) adjustment.

6. Determine the appropriate charge per KwH from the table below.

KwH Consumed Per Month	Alaska Region Charge per KwH
1 – 500	$.141
501 – 1,000	$.148
1,001 – 1,500	$.151
Over 1,500	$.152

7. Compute the monthly charge for space cooling by multiplying the appropriate charge per KwH times the number of KwH consumed per month.

8. Example: Compute the average monthly electric cooling charge for a 1,275 square foot mobile home near Fairbanks, Alaska.

   a. STEP 1: Table Selection. Select the table (table 14a through 14f), which most closely describes the quarters unit at issue. Table 14f (Mobile Home - Prototype VI) should be selected.

b. STEP 2: Annual KwH Consumption. Determine from table 14f the annual KwH consumption appropriate for the cooling degree days (CDD) and the gross square footage of the mobile home in this example. Use the table as follows:

1) Find the number of cooling degree days for the established community closest to the quarters. Table 10 (which contains the CDD for established communities in the Alaska survey region) shows that Fairbanks, Alaska has 74 CDD. Round down to 50 CDD.

2) In table 14f, 1,275 square feet (the size of the mobile home used in this example) lies between 1,200 and 1,400 square feet. Round down to 1,200 square feet.

3) From table 14f (1,200 square feet and 50 CDD) the annual KwH consumption rate is 212 KwH.

c. STEP 3: Monthly Consumption. Calculate the monthly KwH consumption by dividing the annual KwH consumption by 12 (months). In this instance, the monthly consumption is 17.67 KwH rounded (212 / 12 = 17.67).

d. STEP 4: HUD MPS Zone Adjustment. The HUD MPS Zone adjustment is made as follows:

1) Use Table 10 to find the HUD MPS Zone for the community at issue. In this manner, Fairbanks, AK is found to be in HUD MPS Zone 8.

2) In Table 15, determine the adjustment factor for the appropriate dwelling unit type and MPS zone. The factor for housing prototype VI in HUD MPS Zone 8 is 4.22.

3) Multiply the monthly electric consumption (as computed in paragraph 8c, above) times the HUD MPS Zone adjustment factor 17.67 x 4.22 = 74.57 KwH per month.

e. STEP 5: Adjustment for Coefficient of Performance (COP). This adjustment accounts for the differences in the efficiencies of evaporative (swamp) and refrigerated air central cooling systems.

1) Evaporative (swamp) cooling. For a central evaporative cooling system the adjusted KwH (computed in Step 4, above) is divided by a factor of 6.66. In this example, the monthly KwH requirement for central evaporative cooling is computed as 74.57 / 6.66 = 11.20 KwH per month.

2) Refrigerated air cooling. For a central refrigerated air cooling system, the adjusted KwH (computed in step 4, above) is divided by a factor of 2. In this example, the monthly KwH requirement for central refrigerated air cooling is computed as 74.57 / 2 = 37.28 KwH per month.

f. STEP 6: Monthly Charge. The final step is to compute the monthly charge for the electricity consumed. This is done by multiplying the charge per KwH times the KwH consumed per month. The appropriate charge per KwH may be found in the table below.

KwH Consumed Per Month	Alaska Region Charge per KwH
1 – 500	$.141
501 – 1,000	$.148
1,001 – 1,500	$.151
Over 1,500	$.152

In this example, the average monthly consumption (11.20 KwH) for evaporative cooling falls in the "1 – 500" KwH consumption range. And 37.28 KwH for refrigerated cooling also falls in the "1 – 500" KwH consumption range. The appropriate charge will be $0.141 per KwH for evaporative cooling and $0.141 for refrigerated cooling.

Therefore, the monthly charges for cooling the mobile home used in this example would be computed as follows.

Evaporative cooling: 11.20 KwH x $0.141 = $1.58

Refrigerated cooling: 37.28 KwH x $0.141 = $5.26

9. Gas powered Central Air Conditioning Units. If the central air conditioning unit is gas operated (natural gas or propane), the charge is computed as follows:

a. Compute the KwH consumption in same manner as shown in steps 1 through 4 above (Note: the calculations through step 4 produce 74.57 KwH per month).

b. Calculate the Coefficient of Performance (COP) adjustment in step 5 above for refrigerated air conditioning; that is, divide the number of KwH in paragraph 9a, above (74.57 KwH) by the COP (2); for example 74.57 / 2 = 37.28 KwH.

c. Convert the monthly KwH to MBTUs by dividing the KwH calculated in paragraph 9b, above by 234.4. Thus, 37.28 KwH / 234.4 (KwH per MBTU) = 0.159 MBTUs. [It takes 234.4 Kilowatts to generate 1 MBTU.]

d. Calculate the volumes of natural gas and propane needed to produce 0.159 MBTUs. This is done as follows.

1) Natural Gas. For central air conditioning units that operate on natural gas, multiply the MBTUs calculated in paragraph 9c above by 1 MCF (0.159 MBTUs x 1 MCF = 0.159 MCF). Thus,

0.159 MCF of natural gas would be required per month (annual average) to cool the dwelling in this example.

2) Propane. For central air conditioning units that operate on propane gas, multiply the MBTUs calculated in paragraph 9c above by 10.2 gallons (0.159 MBTUs x 10.2 gallons = 1.62 gallons). Thus, 1.62 gallons of propane would be required per month (annual average) to cool the dwelling in this example.

e. Calculate the monthly charge for natural gas or propane consumed, using the rates from Table 12. This is done by multiplying the volume of fuel consumed by the unit cost of the fuel. These calculations are shown below.

Natural gas: 0.159 MCF x $7.80 per MCF = $1.24 per month.

Propane gas: 1.62 gallons x $4.24 per gallon = $6.87 per month.

TABLE 14A ANNUAL KWH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE I

Single Family, One Story, Partial (Less Than 50%) or No Basement
ALASKA REGION

Baseline City: Anchorage, Alaska

Heating or Cooling Degree Days

Gross Sq Ft	50	7,000	7,500	8,000	8,500	9,000	10,000	10,500	11,000	11,500	12,000	12,500	13,000	13,500	14,000	14,500	15,000
100	9	1292	1385	1477	1569	1662	1846	1939	2031	2123	2215	2308	2400	2492	2585	2677	2769
200	18	2585	2769	2954	3139	3323	3692	3877	4062	4246	4431	4616	4800	4985	5169	5354	5539
400	37	5169	5539	5908	6277	6646	7385	7754	8123	8493	8862	9231	9600	9970	10339	10708	11077
600	55	7754	8308	8862	9416	9970	11077	11631	12185	12739	13293	13847	14401	14955	15508	16062	16616
800	74	10339	11077	11816	12554	13293	14770	15508	16247	16985	17724	18462	19201	19939	20678	21416	22155
1,000	92	12924	13847	14770	15693	16616	18462	19385	20309	21232	22155	23078	24001	24924	25847	26770	27694
1,200	111	15508	16616	17724	18832	19939	22155	23263	24370	25478	26586	27694	28801	29909	31017	32124	33232
1,400	129	18093	19385	20678	21970	23263	25847	27140	28432	29724	31017	32309	33601	34894	36186	37479	38771
1,600	148	20678	22155	23632	25109	26586	29540	31017	32494	33971	35448	36925	38402	39879	41356	42833	44310
1,800	166	23263	24924	26586	28247	29909	33232	34894	36555	38217	39879	41540	43202	44864	46525	48187	49848
2,000	185	25847	27694	29540	31386	33232	36925	38771	40617	42463	44310	46156	48002	49848	51695	53541	55387
2,200	203	28432	30463	32494	34525	36555	40617	42648	44679	46710	48741	50771	52802	54833	56864	58895	60926
2,400	222	31017	33232	35448	37663	39879	44310	46525	48741	50956	53172	55387	57603	59818	62033	64249	66464
2,600	240	33601	36002	38402	40802	43202	48002	50402	52802	55202	57603	60003	62403	64803	67203	69603	72003
2,800	258	36186	38771	41356	43940	46525	51695	54279	56864	59449	62033	64618	67203	69788	72372	74957	77542
3,000	277	38771	41540	44310	47079	49848	55387	58156	60926	63695	66464	69234	72003	74773	77542	80311	83081

TABLE 14B ANNUAL KWH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE II

Single Family, Single Story, Full Basement

ALASKA REGION

Baseline City: Anchorage, Alaska

Heating or Cooling Degree Days

Gross Sq Ft	50	7,000	7,500	8,000	8,500	9,000	10,000	10,500	11,000	11,500	12,000	12,500	13,000	13,500	14,000	14,500	15,000
100	7	1043	1118	1192	1267	1341	1490	1565	1639	1714	1788	1863	1937	2012	2086	2161	2235
200	15	2086	2235	2384	2533	2682	2980	3129	3278	3427	3576	3725	3874	4023	4172	4321	4470
400	30	4172	4470	4768	5066	5364	5961	6259	6557	6855	7153	7451	7749	8047	8345	8643	8941
600	45	6259	6706	7153	7600	8047	8941	9388	9835	10282	10729	11176	11623	12070	12517	12964	13411
800	60	8345	8941	9537	10133	10729	11921	12517	13113	13709	14305	14901	15497	16093	16689	17285	17882
1,000	75	10431	11176	11921	12666	13411	14901	15646	16391	17136	17882	18627	19372	20117	20862	21607	22352
1,200	89	12517	13411	14305	15199	16093	17882	18776	19670	20564	21458	22352	23246	24140	25034	25928	26822
1,400	104	14603	15646	16689	17732	18776	20862	21905	22948	23991	25034	26077	27120	28163	29206	30250	31293
1,600	119	16689	17882	19074	20266	21458	23842	25034	26226	27418	28610	29803	30995	32187	33379	34571	35763
1,800	134	18776	20117	21458	22799	24140	26822	28163	29504	30846	32187	33528	34869	36210	37551	38892	40233
2,000	149	20862	22352	23842	25332	26822	29803	31293	32783	34273	35763	37253	38743	40233	41724	43214	44704
2,200	164	22948	24587	26226	27865	29504	32783	34422	36061	37700	39339	40978	42618	44257	45896	47535	49174
2,400	179	25034	26822	28610	30399	32187	35763	37551	39339	41127	42916	44704	46492	48280	50068	51856	53645
2,600	194	27120	29057	30995	32932	34869	38743	40680	42618	44555	46492	48429	50366	52303	54241	56178	58115
2,800	209	29206	31293	33379	35465	37551	41724	43810	45896	47982	50068	52154	54241	56327	58413	60499	62585
3,000	224	31293	33528	35763	37998	40233	44704	46939	49174	51409	53645	55880	58115	60350	62585	64820	67056

TABLE 14C ANNUAL KWH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE III

Single Family, Two Story, Partial (Less Than 50%) or No Basement
ALASKA REGION

Baseline City: Anchorage, Alaska

Gross Sq Ft	Heating or Cooling Degree Days																
	50	**7,000**	**7,500**	**8,000**	**8,500**	**9,000**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	8	1151	1233	1315	1397	1480	1644	1726	1808	1891	1973	2055	2137	2219	2302	2384	2466
200	16	2302	2466	2630	2795	2959	3288	3452	3617	3781	3946	4110	4274	4439	4603	4768	4932
400	33	4603	4932	5261	5590	5918	6576	6905	7234	7562	7891	8220	8549	8877	9206	9535	9864
600	49	6905	7398	7891	8384	8877	9864	10357	10850	11343	11837	12330	12823	13316	13809	14303	14796
800	66	9206	9864	10521	11179	11837	13152	13809	14467	15125	15782	16440	17097	17755	18413	19070	19728
1,000	82	11508	12330	13152	13974	14796	16440	17262	18084	18906	19728	20550	21372	22194	23016	23838	24660
1,200	99	13809	14796	15782	16769	17755	19728	20714	21701	22687	23673	24660	25646	26632	27619	28605	29592
1,400	115	16111	17262	18413	19563	20714	23016	24166	25317	26468	27619	28770	29920	31071	32222	33373	34524
1,600	132	18413	19728	21043	22358	23673	26304	27619	28934	30249	31564	32880	34195	35510	36825	38140	39455
1,800	148	20714	22194	23673	25153	26632	29592	31071	32551	34030	35510	36990	38469	39949	41428	42908	44387
2,000	164	23016	24660	26304	27948	29592	32880	34524	36168	37812	39455	41099	42743	44387	46031	47675	49319
2,200	181	25317	27126	28934	30742	32551	36168	37976	39784	41593	43401	45209	47018	48826	50635	52443	54251
2,400	197	27619	29592	31564	33537	35510	39455	41428	43401	45374	47347	49319	51292	53265	55238	57210	59183
2,600	214	29920	32058	34195	36332	38469	42743	44881	47018	49155	51292	53429	55566	57704	59841	61978	64115
2,800	230	32222	34524	36825	39127	41428	46031	48333	50635	52936	55238	57539	59841	62142	64444	66746	69047
3,000	247	34524	36990	39455	41921	44387	49319	51785	54251	56717	59183	61649	64115	66581	69047	71513	73979

TABLE 14D ANNUAL KWH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE IV

Single Family, Two Story, Full Basement
ALASKA REGION

Baseline City: Anchorage, Alaska

Gross Sq Ft	Heating or Cooling Degree Days																
	50	**7,000**	**7,500**	**8,000**	**8,500**	**9,000**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	9	1245	1334	1423	1512	1601	1779	1868	1957	2046	2135	2224	2312	2401	2490	2579	2668
200	18	2490	2668	2846	3024	3202	3558	3736	3913	4091	4269	4447	4625	4803	4981	5159	5336
400	36	4981	5336	5692	6048	6404	7115	7471	7827	8183	8538	8894	9250	9606	9961	10317	10673
600	53	7471	8005	8538	9072	9606	10673	11207	11740	12274	12807	13341	13875	14408	14942	15476	16009
800	71	9961	10673	11384	12096	12807	14231	14942	15654	16365	17077	17788	18500	19211	19923	20634	21346
1,000	89	12452	13341	14231	15120	16009	17788	18678	19567	20456	21346	22235	23125	24014	24903	25793	26682
1,200	107	14942	16009	17077	18144	19211	21346	22413	23480	24548	25615	26682	27750	28817	29884	30951	32019
1,400	125	17432	18678	19923	21168	22413	24903	26149	27394	28639	29884	31129	32374	33620	34865	36110	37355
1,600	142	19923	21346	22769	24192	25615	28461	29884	31307	32730	34153	35576	36999	38422	39845	41269	42692
1,800	160	22413	24014	25615	27216	28817	32019	33620	35221	36821	38422	40023	41624	43225	44826	46427	48028
2,000	178	24903	26682	28461	30240	32019	35576	37355	39134	40913	42692	44470	46249	48028	49807	51586	53364
2,200	196	27394	29350	31307	33264	35221	39134	41091	43047	45004	46961	48917	50874	52831	54788	56744	58701
2,400	213	29884	32019	34153	36288	38422	42692	44826	46961	49095	51230	53364	55499	57634	59768	61903	64037
2,600	231	32374	34687	36999	39312	41624	46249	48562	50874	53187	55499	57812	60124	62436	64749	67061	69374
2,800	249	34865	37355	39845	42336	44826	49807	52297	54788	57278	59768	62259	64749	67239	69730	72220	74710
3,000	267	37355	40023	42692	45360	48028	53364	56033	58701	61369	64037	66706	69374	72042	74710	77379	80047

TABLE 14E ANNUAL KWH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE V

Apartments

ALASKA REGION

Baseline City: Anchorage, Alaska

Gross Sq Ft	Heating or Cooling Degree Days																
	50	**7,000**	**7,500**	**8,000**	**8,500**	**9,000**	**10,000**	**10,500**	**11,000**	**11,500**	**12,000**	**12,500**	**13,000**	**13,500**	**14,000**	**14,500**	**15,000**
100	6	887	950	1014	1077	1140	1267	1330	1394	1457	1521	1584	1647	1711	1774	1837	1901
200	13	1774	1901	2027	2154	2281	2534	2661	2788	2914	3041	3168	3295	3421	3548	3675	3801
400	25	3548	3801	4055	4308	4562	5069	5322	5575	5829	6082	6336	6589	6842	7096	7349	7603
600	38	5322	5702	6082	6462	6842	7603	7983	8363	8743	9123	9503	9884	10264	10644	11024	11404
800	51	7096	7603	8110	8616	9123	10137	10644	11151	11658	12164	12671	13178	13685	14192	14699	15206
1,000	63	8870	9503	10137	10771	11404	12671	13305	13938	14572	15206	15839	16473	17106	17740	18373	19007
1,200	76	10644	11404	12164	12925	13685	15206	15966	16726	17486	18247	19007	19767	20527	21288	22048	22808
1,400	89	12418	13305	14192	15079	15966	17740	18627	19514	20401	21288	22175	23062	23949	24836	25723	26610
1,600	101	14192	15206	16219	17233	18247	20274	21288	22301	23315	24329	25343	26356	27370	28384	29397	30411
1,800	114	15966	17106	18247	19387	20527	22808	23949	25089	26230	27370	28510	29651	30791	31932	33072	34212
2,000	127	17740	19007	20274	21541	22808	25343	26610	27877	29144	30411	31678	32945	34212	35480	36747	38014
2,200	139	19514	20908	22301	23695	25089	27877	29271	30664	32058	33452	34846	36240	37634	39027	40421	41815
2,400	152	21288	22808	24329	25849	27370	30411	31932	33452	34973	36493	38014	39534	41055	42575	44096	45617
2,600	165	23062	24709	26356	28003	29651	32945	34593	36240	37887	39534	41182	42829	44476	46123	47771	49418
2,800	177	24836	26610	28384	30158	31932	35480	37253	39027	40801	42575	44349	46123	47897	49671	51445	53219
3,000	190	26610	28510	30411	32312	34212	38014	39914	41815	43716	45617	47517	49418	51319	53219	55120	57021

TABLE 14F ANNUAL KWH USAGE (ELECTRIC HEATING/COOLING) - PROTOTYPE VI

Mobile Homes
ALASKA REGION

Baseline City: Anchorage, Alaska

Heating or Cooling Degree Days

Gross Sq Ft	50	7,000	7,500	8,000	8,500	9,000	10,000	10,500	11,000	11,500	12,000	12,500	13,000	13,500	14,000	14,500	15,000
100	18	2477	2654	2831	3008	3185	3539	3716	3892	4069	4246	4423	4600	4777	4954	5131	5308
200	35	4954	5308	5662	6016	6370	7077	7431	7785	8139	8493	8847	9200	9554	9908	10262	10616
400	71	9908	10616	11324	12031	12739	14154	14862	15570	16278	16985	17693	18401	19109	19816	20524	21232
600	106	14862	15924	16985	18047	19109	21232	22293	23355	24416	25478	26540	27601	28663	29724	30786	31848
800	142	19816	21232	22647	24063	25478	28309	29724	31140	32555	33971	35386	36802	38217	39633	41048	42463
1,000	177	24770	26540	28309	30078	31848	35386	37155	38925	40694	42463	44233	46002	47771	49541	51310	53079
1,200	212	29724	31848	33971	36094	38217	42463	44587	46710	48833	50956	53079	55202	57326	59449	61572	63695
1,400	248	34678	37155	39633	42110	44587	49541	52018	54495	56972	59449	61926	64403	66880	69357	71834	74311
1,600	283	39633	42463	45294	48125	50956	56618	59449	62280	65111	67941	70772	73603	76434	79265	82096	84927
1,800	318	44587	47771	50956	54141	57326	63695	66880	70065	73249	76434	79619	82804	85988	89173	92358	95543
2,000	354	49541	53079	56618	60156	63695	70772	74311	77850	81388	84927	88465	92004	95543	99081	102620	106159
2,200	389	54495	58387	62280	66172	70065	77850	81742	85635	89527	93419	97312	101204	105097	108989	112882	116774
2,400	425	59449	63695	67941	72188	76434	84927	89173	93419	97666	101912	106159	110405	114651	118898	123144	127390
2,600	460	64403	69003	73603	78203	82804	92004	96604	101204	105805	110405	115005	119605	124205	128806	133406	138006
2,800	495	69357	74311	79265	84219	89173	99081	104035	108989	113943	118898	123852	128806	133760	138714	143668	148622
3,000	531	74311	79619	84927	90235	95543	106159	111466	116774	122082	127390	132698	138006	143314	148622	153930	159238

TABLE 15 MPS COOLING ZONE CONVERSION FACTORS

ALASKA REGION

	Dwelling Prototypes					
	I	II	III	IV	V	VI
HUD MPS Heating Zone	Single Story No Basement	Single Story Full Basement	Double Story No Basement	Double Story Full Basement	Apart-ments	Mobile Homes
1						
2						
3						
4						
5						
6						
7						
8	2.10	1.86	2.00	2.04	1.73	4.22

F. NON-SPACE HEATING/COOLING ENERGY CONSUMPTION/COST CALCULATIONS

The examples in the preceding sections (VI.C, VI.D and VI.E) dealt with the charges for space heating and cooling. However, to compute **total** energy consumption charges, the costs for energy consumed by lights, equipment, and appliances (Government **and** tenant-owned) must be determined and added to the heating and cooling charges.

1. **Consumption**. Electric non-space heating/cooling consumption and cost estimates include electricity used by small appliances, lights, radios, television, refrigerators, ranges, washers, dryers, etc. These items, and their associated consumption levels, are shown in Table 16. It is assumed that every government quarter uses a furnace fan, television/radio, lights, and miscellaneous small appliances. Be sure to add these items from Table 16 in addition to any other applicable items in determining the total consumption.

   To use Table 16, first determine the finished floor space square footage range within which a specific quarters unit falls. Then, using the values in Table 16, add the KwH consumed by each appliance or equipment item which is present in the quarters unit. If a housing unit has more than one (1) refrigerator, freezer, room (window) air conditioner or space heater, multiply the KwH shown in the table times the number of refrigerators, freezers, room air conditioners, or space heaters that are present in the quarters unit to determine the total monthly KwH consumption for these appliances.

   There may be instances where appliances are fueled by fossil fuels rather than by electricity. Table 16a provides monthly consumption (in MCF or gallons of fuel) for the most common of these.

   If an appliance listed in Table 16 or Table 16a is not present in the quarters unit at issue, do not include its monthly energy use when computing the total energy consumed by equipment and appliances.

2. **Cost**. The cost of electricity or fossil fuel consumed by appliances and equipment is easily computed by multiplying the total monthly consumption (as determined in the preceding paragraphs) times the appropriate charge per KwH, MCF or gallon. These unit charges are shown in Table 17.

TABLE 16 MONTHLY KWH USAGE: APPLIANCES AND EQUIPMENT

ALL REGIONS

Appliance/ Equipment	Gross Square Feet of Living Space									
	Under 301	301-500	501-700	701-1,100	1,101-1,300	1,301-1,500	1,501-1,900	1,901-2,100	2,101-2,500	Over 2,500
Hot water heater	130	130	245	245	370	370	480	480	600	705
Stove / Microwave	45	45	50	50	55	55	60	60	65	70
Refrigerator 1/	45	50	50	50	85	85	85	85	85	85
Clothes washer	20	35	35	35	45	45	45	55	55	65
Clothes dryer	15	15	25	25	35	35	35	35	40	50
Dishwasher	35	35	45	45	60	60	70	70	80	95
Freezer 1/	70	70	70	70	70	70	70	70	70	70
Furnace fan	15	15	20	20	20	25	25	30	30	35
Room air conditioner	65	65	65	65	65	65	65	65	65	65
Television / radio	5	5	10	10	20	20	20	20	25	25
Lights	50	55	75	80	90	90	95	100	120	120
Space heater (portable) 1/	130	130	130	130	130	130	130	130	130	130
Misc. small appliances	30	30	45	45	65	65	75	80	95	105
Engine Heaters	195	195	195	195	195	195	195	195	195	195
Hot Tub	360	360	360	360	360	360	360	360	360	360

1/ If more than one of these appliances are present in a quarters unit, multiply the KwH consumption times the number of appliances to determine the total KwH consumed for each appliance category.

NOTE: FOR APPLIANCES OPERATED BY FOSSIL FUELS, SEE TABLE 16A.

TABLE 16A MONTHLY FOSSIL FUEL CONSUMPTION: APPLIANCES AND EQUIPMENT
ALL REGIONS

Appliance/ Equipment	Gross Square Feet of Living Space: Under 301	301-500	501-700	701-1,100	1,101-1,300	1,301-1,500	1,501-1,900	1,901-2,100	2,101-2,500	Over 2,500
Hot water heater										
Natural Gas MCF	.55	.55	1.05	1.05	1.58	1.58	2.05	2.05	2.56	3.01
Propane Gallons	5.61	5.61	10.71	10.71	16.12	16.12	20.91	20.91	26.11	30.70
Fuel Oil Gallons	3.87	3.87	7.39	7.39	11.12	11.12	14.43	14.43	18.02	21.19
Kitchen Range										
Natural Gas MCF	.19	.21	.21	.21	.36	36	.36	.36	.36	.36
Propane Gallons	1.94	1.94	2.14	2.14	2.35	2.35	2.65	2.65	2.86	3.06
Fuel Oil Gallons	1.34	1.34	1.48	1.49	1.62	1.62	1.83	1.83	1.97	2.11
Refrigerator 1/										
Natural Gas MCF	.19	.21	.21	.21	.36	.36	.36	.36	.36	.36
Propane Gallons	1.94	2.14	2.14	2.14	3.67	3.67	3.67	3.67	3.67	3.67
Clothes dryer										
Natural Gas MCF	.06	.06	.11	.11	.15	.15	.15	.15	.17	.21
Propane Gallons	.61	.61	1.12	1.12	1.53	1.53	1.53	1.53	1.73	2.14
Freezer 1/										
Natural Gas MCF	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Propane Gallons	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06	3.06
Space heater (portable) 1/										
Natural Gas MCF	.55	.55	.55	.55	.55	.55	.55	.55	.55	.55
Propane Gallons	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61
Fuel oil Gallons	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87	3.87

1/ If more than one of these appliances are present in a quarters unit, multiply the consumption times the number of appliances to determine the total consumed for each appliance category.

NOTE: To compute the cost per month for an appliance that is fueled by a fossil fuel, multiply the consumption listed by the unit cost found in Table 17 of this report.

G. WATER AND SEWER CONSUMPTION/COST CALCULATIONS

In accordance with OMB Circular No. A-45 and Departmental policies and guidelines, when utilities are furnished by the Government, charges shall be based upon regional average residential rates and consumption levels applicable to private rental housing in the survey region.

Where regional survey procedures are used to establish base rental rates, the charges for Government-furnished water and sewer services must be based upon *regional average* water and sewer rates, and not the rates prevailing in the nearest established community. In determining the regional average rates, the water and sewer rates for each survey community were obtained and averaged.

Thus, where the water service is unmetered, and where the Government furnishes water and sewer services, *including well water and septic waste disposal systems*, the regional average flat rate charges, shown below, shall be used. These charges are based upon (1) the average of the monthly service costs (including taxes, service charges, etc.) in all surveyed communities; and (2) consumption levels (based on numbers of bedrooms) contained in planning guides published by the Department of Housing and Urban Development (HUD). The rates below are based upon the number of bedrooms contained in a dwelling.

Flat Rate Water and Sewer Charges
ALASKA REGION

Number of Bedrooms	Monthly Charges	Total
1 (or less)	$38.10 water + $39.60 sewer	= $77.70
2	$47.50 water + $45.50 sewer	= $93.00
3	$59.25 water + $52.50 sewer	= $111.75
4	$70.00 water + $60.00 sewer	= $130.00

H. GOVERNMENT PROVIDED METERED UTILITIES

Where the Government provides the utilities, and the consumption is metered *at the quarters unit level*, the following unit charges will apply.

TABLE 17 UTILITY CHARGES (COST PER UNIT)

ALASKA REGION

Do not calculate the total cost of electricity in steps, such as the first 500 KwH costs so much, then the second 500 KwH costs so much, etc.

a. Electricity

KwH Consumed Per Month	Charge Per KwH
0 – 500	$.141
501 – 1,000	$.148
1,001 – 1,500	$.151
Over 1,500	$.152

b. Fuel Oil #2 — $3.24 Per Gallon.

c. Propane — $4.24 Per Gallon.

d. Natural Gas — $7.80 Per MCF (1,000 cubic feet).

e. Water

Water Consumed Per Month	Cost Per Gallon
1 – 3,000 Gallons	$0.0127
3,001 – 5,000 Gallons	$0.0095
5,001 – 7,500 Gallons	$0.0079
Over 7,500 Gallons	$0.0070

f. Sewer

Sewer Consumed Per Month	Cost Per Gallon
1 – 3,000 Gallons	$0.0132
3,001 – 5,000 Gallons	$0.0091
5,001 – 7,500 Gallons	$0.0070
Over 7,500 Gallons	$0.0060

I. GARBAGE/TRASH REMOVAL SERVICE RATES

In the case of garbage and trash hauling, as with other Government-provided services, OMB Circular No. A-45 requires the charges to be based upon the domestic rates for comparable services provided to occupants of private rental units in the survey area (region).

The garbage and trash services provided to quarters occupants vary from weekly to daily service. Establishment of a service charge based upon the service in the nearest established community may or may not reflect a similar level of service. Therefore, the charge for garbage and trash collection, when conducted by the Government, will, regardless of quarters type, be **$22.05 per quarters unit per month**.

J. CHARGES FOR APPLIANCES AND RELATED SERVICES

OMB Circular No. A-45 requires agencies to charge occupants of Government quarters for appliances, furnishings and services that the Government provides with the quarters. The charges for appliances, furnishings and services most typically provided by Federal agencies are found in Table 18. The monthly recapture cost of the items in Table 18 were determined from information gathered by contractors in the survey communities of all QMIS regions, and from special studies conducted by the Quarters Operations Office.

Agencies providing appliances, furnishings or services that are not included in Table 18 are responsible for establishing an appropriate monthly charge that reflects the private market value of the item(s) provided. In such cases, the agency or bureau should advise the Quarters Operations Office to ensure that subsequent regional survey reports include charges for all Government-provided appliances, furnishings and services.

TABLE 18 MONTHLY CHARGES FOR APPLIANCES & RELATED SERVICES - ALL REGIONS

APPLIANCES		
Range (Gas / Electric) *	(+/-)	$3.55
Refrigerator *	(+/-)	3.20
Clothes Washer		3.75
Clothes Dryer		3.10
Dishwasher		3.05
Microwave Oven		1.20
Trash Compactor		3.55
Freezer		1.85
Freezer (Community)		.95
Window Air Conditioner		
Refrigerated Unit		3.95
Evaporative (Swamp) Unit		2.95
Free Standing Stove		3.60
Fireplace Insert		4.25
Lawn Mower		3.70
Hot Tub		32.40
Community Laundry		
(Non-Coin Operated)		
Washer Only		1.85
Dryer Only		1.55
Washer and Dryer		3.40
ISOLATION ADJUSTMENT FACTOR		3.90

SERVICES AND FURNISHINGS	
Storage Shed (Per Unit)	$2.50
Furniture (Per Room)	10.95
Swimming Pool	
Private Pool	60.00
Community Pool	20.00
Satellite Dish	21.15
Cable Television	27.40
Premium Channel (Each)	18.40
Maid Service	76.30
Lawncare (Per Mowing)	
Houses (Excluding Plexes)	22.70
All Other Classes	11.40
Snow Removal (Per Removal)	13.90
Firewood (Per Cord)	142.75
ELECTRIC CREDITS	
Well pump (0-1 Bedroom)	1.20
Well pump (2 Bedrooms)	1.95
Well pump (3 Bedrooms)	2.80
Well pump (4+ Bedrooms)	3.80
Sewer Lift Pump (0-1 Bedroom)	1.20
Sewer Lift Pump (2 Bedrooms)	1.20
Sewer Lift Pump (3 Bedrooms)	1.45
Sewer Lift Pump (4+ Bedrooms)	1.95
Base Radio	1.20
Remote Control Relay	1.20
Sump Pump	1.20
Radon Mitigation Fan	11.30

** If the Government provides one range and refrigerator, no additions or deductions are made.*

If the Government does not provide a range or a refrigerator, deduct the amount shown above.

If the Government provides 2 or more ranges or refrigerators, add the amounts shown above for each appliance furnished in excess of one range and one refrigerator.

VII. ADMINISTRATIVE ADJUSTMENTS

Once the MBRR is established, certain adjustments (e.g. for isolation and amenity deficiencies) are authorized by OMB Circular A-45. These administrative adjustments are established by OMB and are not derived from regional surveys conducted by the Quarters Operations Office.

The administrative adjustments contained in OMB Circular A-45, and described below, are not authorized for dormitories, bunkhouses, or transient quarters. This is because the rental rates for those housing classes are administratively established, through extensions of the principle of comparability, and are not based directly upon market comparability.

A. SITE AMENITY ADJUSTMENTS

Living conditions at some Government housing sites are not always the same as those found in the survey communities. In the communities surveyed, the amenities discussed below (and in OMB Circular A-45) are generally present and their contributory value is included in the contract rent and in the quarters MBRRs determined from the tables in this report. Thus, if any amenity listed below is present at the quarters site, no positive adjustment is made for that amenity because its presence has already accounted for in the MBRR. However, the lack of an amenity discussed below represents a less desirable condition that should be reflected as a **negative** percentage adjustment to the quarters MBRR or CPI-adjusted MBRR (CPI-MBRR), whichever is applicable.

1. **Reliability and adequacy of water supply**. The water delivery system at the quarters site should provide potable water (free of significant discoloration or odor) and adequate pressure at usual outlets. If the water delivery system at the quarters site does not meet these conditions, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

2. **Reliability and adequacy of electric service**. Electric service at the quarters site must equal or exceed a 100-ampere power system, and should provide 24-hour service under **normal** conditions. When evaluating the electric service, housing managers are reminded that OMB Circular A-45 recognizes that occasional temporary power outages are considered to be "**normal**" conditions. Furthermore, if an adequate back-up generator is available, then the electric service amenity will be considered to be reliable and adequate regardless of the reliability of the primary power source. When electric service is inadequate and unreliable, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

3. **Reliability and adequacy of fuel for heating, cooling and cooking.** There should be sufficient fuel storage capacity to meet prevailing weather conditions and needs. Where electricity is used as the heating, cooling or cooking "fuel," an adjustment can only be made when a deduction has been made for deficient electric service (see paragraph VII.A.2, above). If the fuel delivery/storage system is inadequate, 3 percent should be deducted from the MBRR or the CPI-MBRR, whichever is applicable.

4. **Reliability and adequacy of police protection**. Law enforcement personnel, including Government employees with law enforcement authority, should be available on a 24-hour basis. OMB Circular A-45 defines "**availability**" as the ability of law enforcement officers to respond to

emergencies at the quarters site as quickly as a law enforcement officer in the nearest established community could respond to an emergency in the nearest established community.

OMB Circular A-45 further provides that where part-time officers serve the quarters site, the fact that the officers are part-time does not necessarily mean that they are less available than officers in the nearest established community. The important point is that the availability determination must be based on comparative response times (quarters site vs. the nearest established community) – not the employment conditions of the officers serving the quarters site.

Finally, OMB Circular A-45 provides that gaps in availability due to temporary illness or injury, use of annual leave, temporary duties, training, or other short absences, do not render law enforcement personnel "unavailable" at the quarters site.

If, after applying these guidelines, it is determined that the law enforcement protection at the quarters site is unreliable and inadequate in comparison to the reliability and adequacy of law enforcement protection in the nearest established community, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

5. **Fire insurance availability or reliability and adequacy of fire protection**. Fire insurance should be available (for the quarters) with the premium charge based upon a rating equal to the rating available to comparable housing located in the nearest established community. Alternatively, adequate equipment, an adequate supply of water (or fire retardant chemical), and trained personnel should be available on a 24-hour basis to meet foreseeable emergencies. OMB Circular A-45 provides that **if either element is present (adequate insurance or an adequate fire fighting capability), no adjustment is authorized**. If both elements are missing, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

6. **Reliability and adequacy of sanitation service**. An adequately functioning sewage disposal system and a solid waste disposal system should be available. OMB Circular A-45 considers septic, cesspool or other systems adequate even though they may require periodic maintenance, as long as they are usable during periods of occupancy. If the sanitation service at the quarters site is unreliable or inadequate, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

7. **Reliability and adequacy of telephone service**. Access to commercial telephone facilities should be available on a 24-hour basis. Deductions (except as provided below) are not allowed for occasional temporary interruptions of telephone service. OMB Circular A-45 allows specific deductions for various levels of service and privacy. These are explained below.

   a. The MBRR or CPI-MBRR (whichever is applicable) should be reduced by 3 percent if telephone service is not available within the quarters or within 100 yards of the quarters.

   b. The MBRR or CPI-MBRR (whichever is applicable) should be reduced by 2 percent if there is no telephone service within the quarters, but telephone service (either private or party line) is available within 100 yards of the quarters.

c. The MBRR or CPI-MBRR (whichever is applicable) should be reduced by 1 percent if telephone service is available in the employee's quarters, but the service is not a private line and/or the service is not accessible on a 24-hour per day basis.

8. **Noise and odors**. If there are frequent disturbing or offensive noises and/or odors at the quarters site, 3 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

9. **Miscellaneous improvements**. One or more of the following improvements should be available at the quarters site: paved roads/streets, sidewalks or street lights. If any one of these improvements is present, no deduction is authorized. If all three of these improvements are missing (i.e., there are no paved roads/streets **and** there are no sidewalks **and** there are no street lights), 1 percent should be deducted from the MBRR or CPI-MBRR, whichever is applicable.

B. ISOLATION ADJUSTMENT

In some cases, Government quarters are located far from the nearest established community (see paragraph IX.C for the OMB's definition of "established community"). In addition, different modes of transportation (travel categories) may serve to further isolate the quarters from the nearest established community. In situations where the quarters location and the travel categories meet the requirements contained in OMB Circular A-45, an isolation adjustment should be applied. To determine whether an isolation adjustment applies, and the amount of the adjustment (if one does apply), you should follow the steps in the Isolation Adjustment Computation Schedule, shown on the following page. This schedule is a (modified) reproduction of the appendix to OMB Circular A-45, and is included in this report for illustrative purposes only. Therefore, you should use the form prescribed by your agency or bureau when documenting the isolation adjustment.

Isolation Adjustment Computation

- *Step 1.* Determine the one-way distance in miles (from the quarters to the nearest established community) for each category of transportation listed in Figure 1. Enter mileage(s) in the appropriated block(s) under Column B.

- *Step 2.* Multiply mileage figures entered in Column B by point values listed in Column A for each affected category of transportation to produce one-way points for each category. Add 29 points to the category 4 subtotal and 27 points to the category 5 subtotal to reflect relative differences in cost or time by use of these modes of travel.

- *Step 3.* Add all categories of one-way points in Column C to produce one-way points. (The total must exceed 30 points or there is no adjustment for isolation.)

Figure 1

	Column A		Column B			Column C
Category of Travel	Point Value		One-way Miles			One-way Points
(1) Paved road or rail	1.0	X	____	=		____
(2) Unpaved but improved road	1.5	X	____	=		____
(3) Unimproved road	2.0	X	____	=		____
(4) Water, snowmobile, pack animal, foot or other special purpose conveyance	2.5	X	____	=	____+29	____
(5) Air	4.0	X	____	=	____+27	____
TOTAL ONE-WAY POINTS				=		____

- *Step 4.* Calculate the Isolation Adjustment Factor (IAF) using the following OMB formula: Multiply 2 (to reflect round-trip points) by 4 (to reflect number of trips per month) and then multiply by GSA's current automobile allowance per mile as of the last day of September of each year. For example, the GSA mileage allowance, as of September 30, 2005, was $0.485 per mile, resulting in an IAF of $3.90 per point.

ISOLATION ADJUSTMENT FACTOR = 3.90

- *Step 5.* Multiply total adjusted points by the Isolation Adjustment Factor to produce the monthly adjustment for isolation (rounded to the nearest whole dollar).

MONTHLY ADJUSTMENT = _____

C. LOSS OF PRIVACY

Some quarters occupants are subject to a loss of privacy during non-duty hours by virtue of **public visits which occur several times daily**. In other cases, quarters occupants may be **inhibited from enjoying the full range of activities normally associated with living in private rental housing** (such as where restrictions are imposed on activities in quarters at national cemeteries, or where quarters are in view of prison inmates). In such cases, OMB Circular A-45 allows a deduction from the MBRR or CPI-MBRR (whichever is applicable) of up to 10 percent. OMB Circular A-45 instructs housing managers to establish proportional adjustments to reflect situations of less frequency or seriousness in their impact upon privacy or usage, or to reflect seasonal variations.

D. EXCESSIVE OR INADEQUATE SIZE

Quarters occupants are sometimes provided dwellings that are excessively large or small for their needs. This may be because the range and variety of quarters available at an installation may be much less than that which is available in private rental markets. In such cases, OMB Circular A-45 allows a deduction from the MBRR or the CPI-MBRR (whichever is applicable) of up to 10 percent. The Circular instructs that the deduction should be in direct proportion to the degree of excess or inadequacy, and that the deduction must not continue beyond one month after suitable quarters are made available. Before this adjustment is applied, local housing managers should consult with managers within their agencies or bureaus to determine whether other alternatives (such as closing off rooms and other excess space) would offer a more suitable means of adjustment.

E. LIMITATIONS TO ADMINISTRATIVE ADJUSTMENTS

Administrative adjustments cannot be applied without limit. OMB Circular A-45 provides that the MBRR or CPI-MBRR cannot be reduced by more than 50 percent unless an isolation is authorized and applied. For quarters which receive an isolation adjustment, the MBRR or CPI-MBRR may not be reduced by more than 60 percent. These limitations do not apply to excessive heating or cooling adjustments, which are described in paragraph IX.A of this report.

VIII. CONSUMER PRICE INDEX (CPI) ADJUSTMENTS

OMB Circular A-45 requires annual verification and adjustment (when necessary) of the following rental components that are presented in this report: (1) the Monthly Base Rental Rates (MBRRs); (2) the charges for related facilities (utilities, appliances, furnishings and services); and (3) the Isolation Adjustment Factor (IAF). These verifications and adjustments are to be made in each interim year between baseline regional surveys.

Generally, OMB Circular A-45 specifies that these changes are to be based upon September index levels of specified components of the Consumer Price Index (CPI), and the GSA temporary duty mileage allowance in effect as of September 30 of each year. These changes must be implemented at the beginning of the first pay period in March of each following year.

The Quarters Operations Office is responsible for determining the amounts of these changes, and for providing QMIS Program participants with the information, the software, and the instructions needed to implement the required changes. This information is usually distributed to each National Quarters Officer in November of each year. National, regional or installation quarters managers (as required by your agency or bureau) are responsible for implementing these annual rental adjustments.

IX. OTHER OMB CIRCULAR A-45 RENT CONSIDERATIONS

A. EXCESSIVE HEATING OR COOLING COSTS

OMB Circular A-45 authorizes a deduction from the Monthly Base Rental Rate (MBRR) or the Consumer Price Index-adjusted Monthly Base Rental Rate (CPI-MBRR), whichever is applicable, when quarters are unusually costly to heat or cool. This adjustment is allowed only when: (1) the excessive heating or cooling costs are due to the poor design of the quarters or the lack of adequate insulation/weather-proofing; and (2) when the energy/fuel used for heating and/or cooling is metered. This adjustment will vary from quarters to quarters, but is the difference between the actual heating and/or cooling costs paid by the quarters occupant and 125 percent of the cost of heating and/or cooling a comparable (but adequately constructed and insulated) dwelling located in the same climate zone. For more information on this adjustment, you should consult your agency or bureau policies.

B. INCREMENTAL ADJUSTMENTS

New baseline regional surveys or annual CPI adjustments may occasionally increase quarters rents by more than 25 percent. When this occurs, OMB Circular A-45 allows housing managers to impose the increase incrementally over a period of not more than one year. The Circular also requires that such increases must be applied in equal increments on at least a quarterly basis.

C. ESTABLISHED COMMUNITY

OMB Circular A-45 has established the following minimum standards for use in determining which population centers (cities, towns, etc.) may be used as "established communities" when determining quarters rents.

1. An established community must have a year-round population of 1,500 or more (**5,000 or more in Alaska**). The population determinations must be based upon the most recently conducted decennial census.

2. An established community must have at least one doctor and one dentist, who are available to all quarters occupants on a non-emergency basis.

3. An established community must have a private rental market with housing available to the general public. This requirement excludes communities on military posts, Indian reservations and other Government installations which may meet the other criteria contained in paragraphs IX.C.1 and C.2 above.