that survey, employees were asked to provide their residential zip codes. OPM used this information to refine community selection.

Two types of changes were made. In areas with relatively large concentrations of Federal employees and sufficient housing data, OPM selected communities to reflect the areas where Federal employees typically lived. On Oahu, for example, these changes generally resulted in the selection of communities within or close to Honolulu proper. In other areas where concentrations of Federal employees were not as evident or where obtaining a sufficient quantity of housing data had been difficult in previous surveys, OPM expanded the survey community to cover a larger area. For example, the entire island was surveyed for housing in Guam, Kauai, Maui, St. Croix, and St. Thomas.

The updated list of communities is provided in Appendix 9. These are the communities in which house sales and rental rates were collected. The communities were also used to determine the normal shopping radius and the outlets at which prices were collected.

1.2.3 Historical Housing Data

A third change was the incorporation of historical housing data to reflect not only the prices paid for recent home purchases but also for homes purchased in prior years. Appendix 10 shows the home market values, interest rates, and annual principal and interest payments for each area by year and income level. Appendix 11 shows how the principal and interest payments were combined using weights based on the percent of Federal employees presumed to have purchased their homes in each given year. The weights were derived from the results of the 1992 Federal Employee Housing and Living Patterns Survey.

1.3 Pricing Period

The prices were collected in the allowance areas and in the Washington, D.C., area in August 1994. As with the previous surveys, the prices of some items—those dependent upon the pricing of other items—were collected slightly later (i.e., in September and October 1994) In addition, individual item prices not meeting OPM's quality control procedures were resurveyed in October and used to verify or replace the original prices.

As was done in previous surveys, JFA included some catalog sales in its survey. Only catalogs that sell merchandise in both the allowance areas and the Washington, D.C. area were used. To ensure consistent seasonal catalog pricing, JFA used spring/summer catalogs for the catalog items surveyed.

2. The COLA Model

2.1 Measurement of Living-Cost Differences

A common and widely accepted way to measure living-cost differences between and among locations is to select representative items that people purchase in these locations and to calculate the respective cost differences, combining them according to their importance to one another (as measured by relative percentage of expenditures). The COLA model applies this methodology to compare the living costs in each of the allowance areas with the living costs in the Washington, DC, area.

Moving from this basic concept to computing comparative living costs between each allowance area and the Washington, DC, area involves five main steps:

Step 1: Identify the segment of the population for which the analysis is targeted (i.e., the target population).

Step 2: Estimate how these people spend their money.

Step 3: Select items to represent the types of expenditures people usually make and outlets at which people typically make purchases.

Step 4: Conduct pricing surveys of the selected items in each area.

Step 5: Analyze cost ratios for the selected items and aggregate them according to the relative importance of each item.

2.2 Step 1: Identifying the Target Population

The study estimates living-cost differences for nonmilitary Federal employees who have annual base salaries between approximately $12,000 and $87,000, the range of the General Schedule. Because living costs may vary depending on an employee's income level, living costs are analyzed at three income levels.

2.2.1 Federal Salaries

To determine the appropriate income levels, OPM analyzed the 1994 distribution of salaries for all General Schedule employees in all of the allowance areas combined. OPM divided this distribution into three groups of equal size and identified the median salary in each of the groups. These values were then rounded to the nearest $100 to produce the three representative income levels of $20,800, $31,500, and $48,300.

The study analyzes living costs at each of these three income levels. The results are three sets of estimated expenditures for each allowance area and for the Washington, D.C., area. To combine these estimated expenditures into a single overall index for the area, JFA used employment weights provided by OPM.

2.2.2 Federal Employment Weights

As with the income levels, the OPM employment weights were derived from the distribution of General Schedule employees by salary level. Using the salary parameters identified in the income analysis described above, OPM determined the number of General Schedule employees in each salary group in each allowance area. Using a moving average similar to that used with the CES data (see section 1.2.1), OPM combined these data with the same type of information for the previous two years and calculated the percent of the General Schedule workforce in each income group in each area. These percentages were the weights that JFA used.

In addition, OPM provided General Schedule employment weights to combine data in the three allowance areas in which two separate locations are surveyed. Those allowance areas are: Hawaii County, Hawaii; Puerto Rico; and the U.S. Virgin Islands. These areas are described in greater detail in section 2.5.6.1.

For these areas, OPM identified the number of General Schedule employees associated with each survey location and then combined this information with similar information from the previous two years again using a moving average. The employment counts were converted to percentages representing the proportion of the General Schedule population represented by each of the survey locations. JFA used the percentages as weights to combine the survey data from each survey area.

Appendix 2 shows the General Schedule employment distributions and how the percentage weights were derived.

2.3 Step 2: Estimating How People Spend Their Money

2.3.1 Consumer Expenditure Survey (CES)

Expenditure patterns for employees for all areas, including the Washington, D.C., area, are based on national data from the CES. OPM obtained from the Bureau of Labor Statistics ''prepublished'' CES results for 1988, 1991, and 1992. As discussed in section 1.2.1, these three years of CES data were combined using a moving average.

CES data are used in two ways: to identify appropriate items for survey