PUBLIC HOUSING OPERATING COST STUDY

HARVARD UNIVERSITY
GRADUATE SCHOOL OF DESIGN

Final Report

June 6, 2003

Prepared for the U.S. Department of Housing and Urban Development

Prepared Under a Cooperative Agreement with:

Office of Public and Indian Housing
U.S. Department of Housing and Urban Development
Cooperative Agreement K-PIH-99156

Authorized by:

Conference Report of the 1999 HUD Appropriations Bill
United States Congress

Public Housing Operating Cost Study Staff:

James G. Stockard, Jr., Principal Investigator
Gregory A. Byrne, Project Director
Kevin Day, Senior Research Analyst
Gretchen A. Maneval, Senior Research Analyst
Lora A. Nielsen, Project Coordinator
Katherine James, Staff Assistant

Cost Study Senior Advisors:

Phillip L. Clay, Senior Protocol Advisor
Jeffrey K. Lines, Senior Public Housing Advisor
Georgia Murray, Senior Private Housing Advisor

Acknowledgements:

The following individuals have made particularly valuable contributions to the Cost Study:

Glenn French of G.L. French & Associates
Leonard Jones of JMA Consultants
Jill Khadduri, James Wallace, Rhiannon Patterson, and Ken Lam of Abt Associates, Inc.
Paul Lambert of Lambert Advisory
Eric Richelson of Richelson Enterprises
Jan Shapin of Jan Shapin and Associates
Judith Weber of Viva Consulting
Charles S. Wilkins of The Compass Group, LLC

The following individuals have also made significant contributions to the Cost Study:

Wim Bos, Thomas P. Costello, Yves Dyoko, Reese Fayde of Reese Fayde & Associates, Robert E. Given, Jr. of Altman Management Company, Joan C. Howell of the Public Housing Management Institute, Eugene Jones, Langley C. Keyes of MIT, Casimir Kolaski of Kolaski Housing Advisors, Inc., Richard Moore and James K. Stephenson of Stephenson and Moore, Inc., Edward H. Marchant, Rebecca Matheny, Art Milligan of A.S.M. Development Group, Inc., Miguel Morales of M.A.C. Computer Consulting, Inc., John F. Washek of Edgemere Consulting Corporation, Ned Epstein and Eleanor White of Housing Partners, Inc., Anker Heegard and Linda Ose of The Compass Group, LLC, Karlynne Tucker-Scaggs of Advanta Management Group, Nathaniel Nichols of The Corcoran Companies, Mark Kellenbeck of Kellenbeck Property Management, Kathleen Lin of Blinking Light, Claudia Brodie of McCormack Baron Management Services, Inc., Robert F. Prettyman of Mercy Services Corporation, LLC, James Jameson and David Landers of Systems Engineering and Management Corporation, Ken Talle of Thies and Talle, Paul Votto of Westbrook Management, Robert D. Cruz of Washington Economics Group.

GSD would also like to recognize the assistance of the following groups:

Research Working Group members: Sheila Crowley, Thomas Deller, Steven Fischer, Andrea Hartt, Dushaw Hockett, Phil Holman, Mamie Jackson, Joy Johnson, Larry Loyd, Betsey Martens, Anthony O'Leary, Mary Rone, J. Richard Parker II, William Steinmann, Paulette Turner, Edward Williams, Alexander White, and the many guests who attended the meetings to offer their insights.

Industry Advocacy organizations, with special thanks to Timothy Kaiser and Ted Van Dyke of PHADA, Sunia Zaterman, Debbie Gross and Marlene Kalenak of CLPHA, and Christine Siksa and Jonathan Zimmerman of NAHRO.

Thanks to the following organizations for providing the study with supplemental cost data:

The National Apartment Association, especially Douglas Culkin, Barbara Vassallo and Bob Sheehan, the Apartment Investment and Management Company, Equity Residential, especially Fred Tuomi, the Rural Housing Services of the Department of Agriculture, especially Cynthia Reese-Foxworth and Larry Anderson.

GSD would further like to express its appreciation to the following public housing authorities for their time and assistance:

Altoona Housing Authority (PA), Akron Housing Authority (OH), Anne Arundel Housing Authority (MD), Athens Housing Authority (GA), Boulder City Housing Authority (CO), City of Reno Housing Authority (NV), Dayton Housing Authority (OH), Gloucester Housing Authority (MA), Hampton Redevelopment and Housing Authority (VA), Housing Authority of the City of Baltimore (MD), Houston Housing Authority (TX), Jacksonville Housing Authority (FL), Jamestown Housing Authority (RI), Kansas City Housing Authority (KS), Kingston Housing Authority (NY), Laurinburg Housing Authority (NC), Los Angeles Housing Authority (CA), Marble Falls Housing Authority (TX), Norfolk Housing Authority (VA), Phoenix Housing Authority, Pinellas County Housing Authority, Portland Housing Authority (OR), Providence Housing Authority (RI), San Antonio Housing Authority, Springfield, MA Housing Authority, as well as the many housing authorities who participated in field test site visits.

The Cost Study would also like to thank GSD Dean Peter Rowe and the GSD staff, with particular thanks to Russell Sanna, GSD Associate Dean for Administration and External Relations, for his creative and unwavering support.

Finally, GSD would like to thank the many members from HUD's Offices of Public and Indian Housing, as well as the Office of Policy, Development and Research, particularly Stephen Sprague and Regina McGill, for their assistance with many aspects of this project.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Nationally, there are approximately 1.2 million units of public housing, administered by nearly 3,200 public housing authorities (PHAs). Total operating expenses run about $5.8 billion annually, of which $3.5 billion is funded through federal operating subsidies and the remainder is covered by rental income.

When Congress passed the Quality Housing and Work Responsibility Act (QHWRA) in 1997, it called for the establishment of two new funds for public housing – a Capital Fund and an Operating Fund – that would replace, respectively, the Comprehensive Grant Program (CGP) and the Performance Funding System (PFS). Congress then directed HUD to initiate negotiated rulemaking with affected industry groups in order to determine how the monies from those funds would be distributed.

The Operating Fund "Neg-Reg" committee met in 1999. Other than minor adjustments[1], the committee was unable to come to a resolution on a new formula, primarily due to a lack of data on what it **should** cost to run good quality public housing. As a result, the Conference Report of the 1999 HUD Appropriations bill provided funds to conduct a study to determine the cost to operate well-run public housing and directed HUD to contract with Harvard University's Graduate School of Design (GSD) for completion of that study. GSD signed a Cooperation Agreement with HUD and began work in May of 2000.

This document serves as the final report of the Public Housing Operating Cost Study.

STUDY APPROACH

GSD chose a "benchmark" or "proxy" approach to this study, wherein the estimated non-utility costs of operating each public housing property would be anchored to the verifiable costs of operating other federally-assisted housing governed by similar regulations. These benchmark costs would then be adjusted, as appropriate, for differences in property characteristics, operating regulations, and other factors that might be unique to public housing. Two reasons drove this benchmark approach:

- First, public housing authorities (PHAs) spend what the existing operating formula has given them for 25 years, regardless of whether it is too much or too little. Consequently, it would have been circular to study current spending in order to determine what PHAs should spend. Such research would only lead back to the original formula.

[1] See *Discussion of Research Issues and Initial Recommendations for Review, Appendix C, April 2001*. Changes included such items as a new $25 per unit add-on for resident participation and a one-time permanent adjustment for flood insurance costs for affected PHAs.

- Second, as an industry, and contrary to conventional real estate, PHAs maintain records of expenditures at the agency level and not on a property basis. Without reliable property-level data on operating costs, it would be impossible to identify cost factors based on property characteristics, such as number of bedrooms per unit, age of property, location, etc.

The benchmark database used for this study includes the inventory of multifamily rental housing whose mortgages are insured by the Federal Housing Administration (FHA). The FHA database had a number of advantages over other sources:

- The FHA database includes a comparable number of units (1.5 million FHA, 1.2 million public housing), in a similar number of properties (14,000 vs.14,000), and serving similar residents. Although public housing is older, has more bedrooms per unit, and is more often located in higher poverty neighborhoods, there appeared to be sufficient FHA properties with these special characteristics to determine the effects of those relationships.

- Approximately 1.0 million of the FHA units are "assisted", which means that they operate under a regulatory regimen that is surprisingly close to that of public housing.[2]

- Owners of FHA-insured properties must submit to HUD independently audited annual financial statements on a property-specific basis. Since many of the factors that drive operating costs are property-specific, e.g., unit size, location, age, etc., the availability of reliable data on this basis was vital to the study.

Utilizing this FHA database, GSD ran a series of statistical analyses (regressions) to find out what elements of a property – e.g., building type, age, bedroom mix, location, etc. – drive operating costs. The coefficients derived from this analysis were combined into a "cost model" that estimated what it should cost to run each property in the public housing stock. By adding the properties of a particular PHA together, GSD was then able to estimate the operating cost for the PHA as a whole.

GSD then conducted extensive "field testing", comparing the model-produced estimates of costs with the costs of various privately-managed public housing and with budget-based estimates of costs prepared by property management experts. GSD also conducted case studies to estimate possible additional costs that a housing authority might incur, above the FHA benchmark, on account of two other factors:

1. PHAs are subject to a few regulations that the FHA stock is not. For example, PHAs must allow for pets in family housing and must give residents an opportunity for a formal grievance in the case of adverse agency action; and

[2] While GSD used both assisted and unassisted properties for understanding various cost relationships, the cost model, when applied to public housing, assumes public housing is fully assisted.

2. PHAs are public bodies (as opposed to the for-profit and non-profit entities that administer assisted housing) and may encounter costs unique to that status. For example, some PHAs are subject to certain state purchasing requirements that are not applicable to other operators of assisted housing.

Finally, GSD conducted a separate research effort in four communities to evaluate the feasibility of implementing a benchmarking system for public housing utility funding.

FINDINGS/RECOMMENDATIONS

1. **Benchmarking using the FHA inventory is recommended for establishing non-utility expense levels for public housing.** It has the following key advantages over other possible methods:

   — It is based on real market experience of a comparable inventory,
   — It is based on standardized audited numbers that reflect recent market conditions and cost relationships (in contrast to the PFS, which freezes cost relationships of the mid-1970s),
   — It is property-based rather than agency-based, and
   — It can become a platform for broader reforms of the public housing system.

2. **Based on this FHA benchmark, and supported by field testing, non-utility expense levels for public housing should be increased by 5% in the aggregate above current formula amounts.** 38% of PHAs would remain within +/- 10% of current formula amounts. Only 6% would have their expense levels reduced by more than 10% while 28% would have their formula amounts increased by more than 20%. These estimates presume a cost structure for public housing that is substantially equivalent to non-profit operators of assisted housing.

3. **At least half of the recommended increase in formula amounts should be funded with PHA receipts that are currently excluded from operating subsidy calculations (late fees, vending revenue, investment income, etc.).** These contributions would still represent less than one-third of what PHAs currently earn or receive in investment/other income and that is excluded from subsidy determinations.

4. **In the short term, HUD should retain the current "rolling-base" system for public housing utility funding. Over the long-term, HUD should collect utility consumption data on a property-by-property basis for both public and FHA housing, forming the basis of a utility benchmarking system.** Utilities account for about 22% of the $5.8 billion that is spent annually to operate public housing. Under the rolling-base system, PHAs are reimbursed for utility costs based on the average consumption over the past three years, multiplied by current rates. PHAs share in 75% of the savings if consumption drops relative to the rolling-base, pay

75% of the added costs when consumption exceeds the rolling-base, and are held harmless for changes in utility rates. Under this system, there is no monitoring by HUD of consumption levels. HUD could readily adapt its utility subsidy calculation forms, and related processes, to capture property-specific utility consumption.

5. **The major argument for keeping the current funding approach, as opposed to benchmarking, is that public housing is different. The thrust of this report is that, from a purely regulatory standpoint, public housing is not that different. But where it is, it should be changed.** GSD identified some 14 operating regulations that are unique to public housing; however, through case study examination, GSD found the cost impact of these different regulations to be quite small, or about 1-2% of non-utility operating costs for most of the agencies studied. Further, GSD believes that these "additional" public housing costs are substantially offset by "unique" requirements imposed on operators of assisted housing. While their overall regulatory cost impact is small, modifying public housing's regulatory environment to make it more like other assisted housing would go a long way to eliminating an unnecessary source of distinction, one perceived to be much greater than actually found. Included with this report are recommended changes that would minimize or eliminate the regulatory differences between public and assisted housing.

6. **HUD should require property-based budgeting, accounting and management, consistent with practices in private industry.** Public housing has existed since its inception in isolation from the rest of the housing development and management world. This isolation has led to an unhealthy reliance on HUD as its measure of performance (please the funder) instead of reliance on consumer preference and market value (please the client, maximize return). Case studies call attention to the organizational distortions, with major cost implications, of years of a system that has been immune to market forces and administered from HUD with an agency performance focus rather than a property performance focus. PHAs operate like public agencies and not like real estate businesses, managing under extremely centralized arrangements that run counter to good business practice. Resources are not being used effectively because this condition is not addressed. While HUD has nominally required project based-accounting for PHAs, few do so. Absent federal reforms, real change in operating behavior, leading to real economies and enhancement in operating performance, will rest on individual cases of local talent and enlightened communities. A major feature of the recommended formula is that an agency, instead of getting one number for ten properties, would get ten numbers, one for each property. The agency would then prepare budgets for each, which HUD would track separately.

7. **With respect to the amount and kinds of resident services and programs for low-income residents that are needed to affect well-run housing, the research indicates that there is no correct answer.** Implied in the benchmark is a level of resident services that is normal and customary in FHA assisted housing, the

precise amount of which cannot be determined (the FHA chart of accounts does not distinguish these resident services from other administrative costs). PHAs currently spend on average around $8 PUM on tenant services in the operating budget, a figure that is likely close to the amount that non-profits spend (and likely a factor in the difference in costs the study identifies between for-profits and non-profits). PHAs that feel they need more funding for social services can work with local service providers to get more services, or engage in activities that generate funds to subsidize services, or save money in their operating budget through economies of operation. Congress, of course, could add to this amount if it so chose through funding an additional increment if it sought specific outcomes or objectives outside of property management.

8. **The conversion of public housing to a development-based subsidy and financing program would complement both the formula changes and management reforms advanced here, particularly in transitioning to property-based management.** Beyond the obvious benefit of addressing public housing's extensive capital needs, a development-based debt-financing program, substantially equivalent to the Public Housing Reinvestment Initiative (PHRI) program proposed in HUD's 2004 budget, would require PHAs to adopt stronger property-based management programs.[3]

9. **A shift to a property-based model for public housing must be accompanied by major changes in how HUD manages and evaluates PHAs.** In short, HUD too must become more property-focused. In contrast to other housing entities that engage in asset management of assisted housing (FHA, state housing finance agencies, tax syndicators, etc.), there is no oversight by HUD of public housing properties, per-se. HUD does not review on an annual or otherwise regular basis the performance of individual properties with respect to physical condition, occupancy levels, rent collections, expenditures, etc. While HUD requires the submission of much of this data, information is provided, with the exception of the physical inspection score, only on a PHA-wide basis. HUD evaluates public housing organizations, not properties. Changes needed in HUD's business processes to bring about a stronger real estate focus will be as large as the changes needed in public housing's management practices, and will take several years to implement.

ORGANIZATION OF REPORT

The remainder of this document is divided into seven chapters, along with various supporting appendices.

[3] See also, *Final Draft, Report on Debt Financing of Public Housing Capital Improvements, November 1, 2001.*

- Chapter 1, Model Development, describes development of the cost model, the resulting variables and their coefficients, and the precision and accuracy of model predictions.

- Chapter 2, Model Estimates, explains how the model gets applied to generate property- and agency-level estimates, the distributional effects on PHAs relative to current funding, and the impacts on federal operating subsidies.

- Chapter 3, The Public Housing Regulatory Environment, discusses the findings from the case study research on the cost impacts of public housing's different operating regulations.

- Chapter 4, The Public Housing Operating Environment, reviews the results of the case study research on public housing's different operating environment.

- Chapter 5, Field Testing, reviews the results of both GSD's survey of the operating costs of various privately managed public housing properties and budget-based estimates prepared by third-party experts. The results are then compared with model estimates, along with considerations for model adjustments.

- Chapter 6, Utilities, reviews GSD's feasibility analysis of developing a benchmarking system for public housing utility funding.

- Chapter 7, Program Reforms, discusses broader reforms of the public housing system that would complement the proposed operating cost formula.

RELATED PUBLICATIONS

In connection with this study, GSD previously published the following documents:

- *Operating Expense Analysis: Mitchell Lama Program, New York City Properties, Final Draft, January 8, 2001,*
- *Discussion of Research Issues and Initial Recommendations for Review, April 2001,*
- *Draft Research Design, July 9, 2001,*
- *Report on Debt Financing of Public Housing Capital Improvements, November 1, 2001,*
- *Report on Pilot Case Studies and Recommended Final Case Study Approach, January 9, 2002, and*
- *Benchmarking Public Housing Utility Funding to Private Norms: A Feasibility Study, Draft, March 22, 2002.*

The above documents, as well as this final report, can be obtained through the study's web-site (www.gsd.harvard.edu/phocs) and will remain available for at least one year from the date of this publication.

CHAPTER 1
Model Development

This chapter provides an overview of the development of the cost model, describes the resulting variables and their coefficients, and discusses the statistical precision and predictive accuracy of the model. Finally, it reviews the issue of public housing asset management and its relationship to the cost model.

OVERVIEW

Appendix A contains a detailed discussion of the development of the cost model, including the various statistical techniques and tests employed by GSD. A non-technical summary of this model development process follows:

- The model is based on financial data from approximately 17,000 properties, representing about 1.5 million units, with mortgages insured through FHA, i.e., the "FHA database."[4] Approximately two-thirds of these units are "assisted" under various federal subsidy programs and one-third are "unassisted" (properties that do not receive subsidies and respond to market forces that affect income and expenses).

- From this FHA database, GSD dropped the following observations:

  — Properties that did not have at least two of the three most recent years of operating cost data. Because of single-year variations in operating costs, GSD determined that only properties with at least two years of data would be included. The three most recent years of data available are '98, '99, and '00. Data from '98 and '99 were trended forward to 2000.
  — The bottom 5% of properties by physical condition (properties that had a physical inspection score of 53 or less). HUD's Real Estate Assessment Center (REAC) conducts a physical assessment of all FHA-insured properties once annually. This inspection is the same for "assisted" as it is for "unassisted"; it is also the same inspection for public housing.
  — Properties that had more than 60% fluctuations in operating expenses from year to year. These properties either had irregular expenses, or may have contained errors, and were excluded from the analysis.
  — Properties missing other key data, including building age, number of units, or other characteristics needed for the model.

[4] See April 2001, *Discussion of Research Issues and Initial Recommendations for Review*, Appendix E, for a comparison of multifamily data sources evaluated during the reconnaissance phase. Among other reasons, the FHA database was chosen for this study because of its size, extensive geographic coverage, and because of tenant and property characteristics that are most similar to public housing.

— Properties with operating costs of less than $135 PUM or more than $650 PUM. GSD visited many public housing and assisted properties as part of the Study, and met with many different property management professionals, and determined that properties above or below these levels were clearly outside the normal range of property operating expenses (see Chapter 4 for further discussion of field testing).

- Owners of properties with FHA insurance are required to submit an annual statement of operating receipts and expenditures utilizing HUD-Form 92410 (available on the PHOCS website). HUD Form 92410 groups operating costs into four main categories (Administrative, Utilities, Operating and Maintenance, Taxes and Insurance). To make comparisons to public housing, GSD excluded from the operating costs of these FHA properties the costs of utilities and real estate taxes.

- With this database of FHA-insured properties, GSD then performed a series of statistical analyses that tested more than two hundred different combinations of property characteristics that might potentially affect costs, from building type (high-rise, garden, row, etc.) to the average number of bedrooms per unit.[5] Many of these possible cost drivers were identified through industry focus groups.

- For statistical testing purposes, 25% of the FHA database was used as a "hold-out" sample.

- From this statistical analysis emerged ten statistically significant cost drivers or "variables", from property age to number of bedrooms per unit. These variables and their accompanying coefficients are discussed in the next section of this chapter.[6]

- The model includes four main "application" rules:

  — GSD identified that it costs more to operate properties with Section 8 assistance tied to the units than unassisted properties, and that fully assisted properties cost more than partially assisted properties. In applying the model to public housing, GSD treats public housing as 100% assisted, resulting in a 6% increase over unassisted properties.

  — In FHA housing, there are three ownership types: for-profit, limited dividend, and non-profit. In applying the cost model to public housing, GSD assigned to public housing the non-profit ownership type, based on

[5] The statistical model used to estimate the operating costs was a log linear model, using ordinary least squares regression. See Appendix A.

[6] There were two additional variables that were used to control for the effects of differences within the FHA database that do not apply to public housing. These are whether or not a property receives mortgage subsidy, and a proxy for the quality or desirability of the property (as measured by the ratio of the rent to the local Fair Market Rent). See Appendix A.

the reasoning that PHAs are more like non-profits than for-profits (see Chapters 3 and 4). However, the model coefficient for non-profit is 12% higher than for-profit (meaning that, all other variables held constant, non-profit ownership was associated with 12% higher costs), which raises legitimate policy concerns. OMB Circular A-76, Performance of Commercial Activities, utilizes a 10% savings in personnel costs as a threshold for determining when in-house activities should be contracted out. While A-76 applies to federal, and not local, agencies, it provides relevant precedent. Also, as discussed in Chapter 5, field testing strongly suggests a somewhat upward bias in the model in terms of estimated costs. On both grounds, GSD has set the non-profit coefficient at 10%. This action brings the model estimates closer in line to the field testing results, and also conforms to the philosophy that publicly-managed services should cost not more than 10% of what it would cost private enterprises.

— To receive its own geographic coefficient, a metropolitan area had to have at least 25 for-profit properties. GSD chose to base the geographic coefficient on for-profit properties since these properties would be less likely to have their operating costs influenced, higher or lower, by the effects of a subsidy program. Metropolitan areas that did not have at least 25 for-profit properties were then grouped into a statewide or census region pool. Similarly, if there were at least 25 FHA rural properties in a state, then that state received a separate rural coefficient; if not, the state was combined with other states in the census region. There are a total of 46 MSAs with enough properties to generate individual coefficients.[7]

— GSD found that operating costs for unassisted properties were sensitive to rent levels charged, with higher costs associated with properties with higher market rents and lower costs with properties with lower market rents. In application, the model is based on the costs (and implied service levels) of rental properties with median rent levels.

- GSD conducted extensive field testing of the model, where it compared the model's results with both the actual experience of various privately-managed public housing and with budgets prepared by property management experts. This field testing also targeted certain special property types – scattered site public housing, very old public housing, large public housing properties, etc. As a result of that field testing, GSD made one out-of-model adjustment. GSD found that the

[7] Metropolitan areas without their own geographic estimate but within a larger Consolidated Metropolitan Statistical Area (CMSA) received a post model adjustment to account for being part of the CMSA (GSD assigned a geographic coefficient equal to the average of the core CMSA and the statewide metropolitan estimate). Additionally, there are a few areas with insufficient properties to accurately estimate geographic coefficients that cannot be grouped into a Census Division because there is no Census Division or the market is significantly removed from the rest of the Division. The treatment of these special market areas is discussed in Attachment A. Further, as required under GSD's Cooperative Agreement, a separate analysis was performed for Puerto Rico, found in Attachment B.

model produced values at the extremes that were considered too low or too high, respectively, for well-managed public housing (see Chapter 4). The lower range of the model was brought up by introducing a national floor of $200 PUM for senior properties and $215 PUM for family properties. The upper end of the model was brought down by introducing a ceiling of $420 PUM ($480 for New York City) and also by reducing model estimates of more than $325 PUM by 4%. (All figures are presented in 2000 dollars.) GSD did not find evidence to support other adjustments based on property characteristics such as scattered site housing or large properties.

MODEL VARIABLES AND THEIR ASSOCIATED COEFFICIENTS

As indicated above, the model produces ten variables, or determinants of costs, each with a separate "coefficient." The coefficient indicates the variable's unique impact on costs (holding all the others constant). Table 1.1 lists each of the variables and their related coefficients, with the exception of the geographic variables, which are shown separately in Table 1.2 at the end of this chapter. All coefficients are rounded to the nearest whole number. A narrative discussion of each variable follows:

- **Geographic variable**. The geographic variable is the largest in the model, with coefficients that range from a high of +42% for New York City to a low of -30% in many rural areas (relative to the reference area of Cleveland, OH), indicating that costs vary substantially from metropolitan area to metropolitan area. (Many PHAs located in these low-coefficient areas had their geographic coefficients, essentially, raised as a result of the senior and family floors.) These variations in costs between geographic areas are likely due to differences such as wage rates, housing market conditions, the difficulty of doing business in different types of communities, the quality of local public services and infrastructure, and, perhaps, management functions that could differ across areas, such as trash removal.

- **Central City Variable**. In addition to which metropolitan area a property is located in, the model also shows that it makes a difference whether a property is located within what the Census defines as the "central city." Properties with central city location have costs that are 3% higher than other properties within the same metropolitan area.[8]

- **Clientele Variable**. The model shows that the clientele that a property serves also affects costs, with "family" properties costing 6% more than "senior" properties, all other variables held constant.

[8] Central city is defined by the Office of Management and Budget as the largest consolidated city or incorporated place, and in some cases, one or more additional cities or incorporated places, in each metropolitan statistical area.

- **Property Size Variable**. The model shows that there is a small economy of size within the FHA database. Properties with 150 or more units were found to be 1% less expensive to operate than properties of smaller size.

- **Building Type Variable**. The model shows that building type had only a minor impact on costs. High-rises, garden, and walk-up properties were all found to operate for essentially the same cost, whereas detached or semi-detached properties are associated with costs that are 2% lower.

- **Bedroom Mix Variable**. The number of bedrooms per unit has a major impact on costs. A two-bedroom unit was found to cost 18% more than a one-bedroom unit. Three- and four-bedroom units costs 38% and 49% more, respectively, than one-bedrooms.

- **Percent Assisted Variable**. Costs vary in accordance with the number of subsidized units at the property, with "100% assisted" properties costing 6% more than unassisted properties.

- **Property Age Variable**. Costs vary with the age of the property or date when the property was most recently rehabilitated/refinanced. Properties more than 26 years old show operating costs that are 10% higher than properties of less than 10 years of age.

- **Neighborhood Poverty Variable**. Costs vary with the incidence of neighborhood poverty, with properties in census tracts with a poverty rate over 40% resulting in a 7% increase in costs over those located in census tracts with a poverty rate under 20%.

- **Ownership Type Variable**. Costs vary according to the ownership type, with for-profit owners having costs that are 8% lower than limited-dividend owners and 12% less than non-profits (10% applied).

Table 1.1: Cost Model Variables and Coefficients (excl. geographic coefficients)

SIZE			BUILDING TYPE	
0 – 150 units	0%		Walkup/Garden	0%
> 150 units	-1%		Detached/Semi-detached	-2%
			Row/Townhouse	0%
AGE			High-Rise/Mixed	0%
0 – 8 years	0%			
9 years	0%		OCCUPANCY	
10 years	1%		Family Property	0%
11 years	1%		Senior Property	-6%
12 years	1%			
13 years	1%		LOCATION	
14 years	2%		Rural	0%
			Metropolitan:	
15 years	2%		non-Central City	0%
			Metropolitan:	
16 years	2%		Central city	3%
17 years	3%			
			NEIGHBORHOOD POVERTY	
18 years	3%		RATE	
19 years	4%		0% - 20%	0%
20 years	4%		20% - 30%	2%
21 years	5%		30% - 40%	4%
22 years	6%		Poverty rate > 40%	7%
23 years	7%			
24 years	7%		PERCENT ASSISTED	
25 years	8%		0%	0%
26 years	9%		0 - 20%	2%
27 years	9%		21 - 80%	2%
28 years	10%		81 - 99%	5%
29 years	10%		100%	6%
30 or more years	10%			
			OWNERSHIP TYPE	
UNIT SIZE			Non-Profit	10%
Percent of 2 BR Units	18%		For Profit	0%
Percent of 3 BR Units	38%		Limited Dividend	8%
Percent of 4 or more BR Units	49%			

Note: The model also includes an adjustment for the property rent level (the effect of which is to benchmark public housing operating costs equal to properties renting between 90% - 110% of FMR). For further information, please see Appendix A.

ACCURACY OF MODEL PREDICTIONS

The model uses an extremely large database in which to predict the operating cost of each public housing property. Indeed, it is the largest database available for this purpose, considering the variables needed to reflect the property characteristics and locations that drive operating costs. Still, all models have limitations. This section summarizes key points about the accuracy of the model predictions. Appendix A provides a more detailed discussion of the statistical tests performed on the model and their results.

- Because of the large size of the database, it was possible to preserve a "hold out" sample and use it to test how well the model predicts costs on a sample of data that was not used for model development. GSD found that 95% percent of observations in the "hold-out sample" fell within the forecast interval around the model-predicted values. This means that the model does an excellent job of predicting the costs of other multifamily rental properties and not simply the costs of the properties on which the model was based. This is important, because the model is to be applied to yet another set of properties, public housing.

- The average Confidence Interval around model predictions is + / - 12 percent (or $28).[9] The confidence interval is a measure of forecast accuracy. It represents the margin of error around cost model predictions. It means that, for a property with an estimated model cost of $300, the estimate could fall between $264 and $336.

- The model produces an "R-squared," or R^2, of .53, which means that the model explains 53% of the variation in costs in the FHA data, a result quite typical for models based on cross-sectional data. Another 47% of the property-to-property variation in FHA operating costs is not explained. Some of the unexplained variation may be the result of property characteristics not captured in the database. However, the database included most of the property characteristics believed by operators of multifamily rental housing to influence costs. Therefore, much of the unexplained variation is likely a function of choices made by owners and managers (regardless of the characteristics of the property) on such issues as how to carry out management functions, the level of housing services to provide to residents, and how to treat non-recurring expenses for accounting purposes.

In order to provide an external test of whether the model-predicted costs, reflecting these average choices of FHA property managers, were reasonable and led to adequate estimates of operating expenses, GSD conducted extensive field testing (Chapter 5). GSD compared model estimates for public housing properties with both the actual costs of privately-managed public housing and budget-based estimates of costs of public housing properties prepared by property management experts. It was the result of that field testing that led GSD to raise the lowest model estimates and decrease the highest model estimates. With these adjustments, GSD believes that the model produces an estimate of the cost to operate well-run public that is reasonable for most public housing properties.

Other concerns relating to the variables in the model and the way in which they were applied are noted below:

[9] Please see Appendix A: Statistical Tests of the Cost Model for further details on the predictive accuracy of our model.

- Geographic coefficients. The geographic coefficients were constructed based on for-profit properties in each market area. Cross-area comparisons of costs among for-profit properties were viewed as a better gauge of geographic variations in costs than comparisons of costs among limited-dividend or non-profit properties, whose costs may be influenced by the constraints of a government program. Concern has been raised that this method might give too much weight to properties with characteristics that differ from public housing. More than half of the for-profit properties are unassisted, and unassisted properties tend to have smaller bedroom sizes and to be located in less impacted neighborhoods than assisted properties and public housing. The field testing suggests that this concern is unwarranted, indicating that the model coefficients for number of bedrooms and type of locations, which are based on all properties regardless of ownership, do a good job of reflecting the costs associated with these characteristics.

- Security expenditures. Concerns have also been expressed that either the method of determining the geographic coefficient, or the use of neighborhood poverty as an indicator of social distress, might not adequately capture the costs of security in central city public housing. Again, the field testing is instructive here. The field tests, which included many old, family public housing developments in major cities, indicated that the model estimates were sufficient to provide reasonable security measures. At the same time, it should be noted that through the course of the case studies and the field testing, GSD observed PHA security practices that were often less cost-effective than those found among typical operators of assisted housing. The field test budgets were prepared using these more cost-effective security measures. For example, a number of the very large PHAs employed in-house police forces, whereas the field testers would have addressed crime and security through stronger on-site management (and lease enforcement), more targeted security patrols, and better use of available security hardware.

- Census boundaries. As with any application of a set of decision rules to geographical areas, there sometimes will be sharp shifts in formula estimates across census boundaries, particularly between metropolitan and rural areas. GSD undertook an extensive effort to review the reasonableness of estimates produced within geographic areas for such anomalies and regrouped the geographic variables to overcome the anomalies to the extent possible.

- Effect of modernized public housing on costs. Properties that are more than 25 years old receive a 10% age coefficient. Some portion of the public housing inventory, however, has been "modernized" and, rightfully, should have lower costs (lower than otherwise similar properties). Unfortunately, the public housing database does not contain any information on the extent of property-specific capital improvements. As discussed near the end of Chapter 2, GSD believes that HUD could develop a protocol for determining "modernized"

properties and, utilizing its field office staff, denote properties accordingly, which would result in lower estimates for these affected properties.

The limitations of cost benchmarks produced by a model must be understood in the context of what they are designed to replace. All of the problems associated with the application of a formula are present for the current Allowable Expense Levels (AELs) of the public housing operating subsidy system. Furthermore, that system does not have the advantage of the model estimates produced by GSD, because it is not based on an external body of experience in operating and managing multifamily rental housing. On balance, GSD believes that the FHA-based model produces fair and reasonable estimates of operating costs within which public housing properties can be operated effectively. Notwithstanding the above, there may be some properties for which the model produces an estimate that is not sufficiently reasonable to maintain well-run public housing, or there may be special circumstances (such as unusual site conditions) that would require an adjustment to the model estimate. To address these cases, which should be limited in number, HUD might consider an appeals process. Under such a process, HUD may want to require petitioning PHAs to demonstrate, through an analysis of suitably comparable properties, that the model has underestimated amounts. However, HUD should also reserve the right to examine all properties within a petitioning PHA, as model underestimates in one property may be balanced out by model overestimates in another property. Additionally, HUD may also wish to examine a PHA's true fiscal hardship by also analyzing its other public housing income in considering any model adjustment.[10]

Over time, consistent with the related program reforms that are also included with this report requiring PHAs to maintain true project-based accounting systems, HUD will have an improved ability to evaluate the appropriateness of the model and make comparisons to actual PHA spending.

ASSET MANAGEMENT

GSD did not include in the cost model any amount to compensate PHAs for what might be regarded as "asset management" functions, defined here as owner responsibilities that are separate and distinct from property management. The rationale for this action includes:

- There is no uniform understanding/definition of tasks.
- It is believed that some of these asset management tasks are likely already included in the benchmark as part of the reported operating costs of FHA housing.

[10] Nationally, PHAs currently report $11 PUM in investment income and $16 PUM in other income. *Report of Revenues and Expenses by PHA Size, HUD/REAC, February 5, 2003.*

- Most of the asset management tasks undertaken by PHAs are funded through the Capital Fund, including long-term capital planning; other typical asset management tasks, such as acquiring new properties, re-positioning properties within the market, and selling properties, are almost never undertaken by PHAs in the current environment. On the rare occasion when they are, they tend to be performed by staff fully funded through the Capital Fund.

- To the extent that public housing moves away from the current capital program to a system of development-based capital financing, asset management costs would be funded through annual cash flows, as is currently the case with private operators.

A more thorough discussion of asset management and its relationship to the cost study is found in Appendix C.

Table 1.2: Geographic Coefficients
(Please see key at bottom of table for "Source" column)

Area Name	State	Coeff	Source
Anchorage	AK	13%	0
Rural (non-metropolitan)	AK	13%	
Anniston	AL	-18%	0
Auburn-Opelika	AL	-18%	0
Decatur	AL	-18%	0
Dothan	AL	-18%	0
Florence	AL	-18%	0
Gadsden	AL	-18%	0
Huntsville	AL	-18%	0
Montgomery	AL	-18%	0
Tuscaloosa	AL	-18%	0
Birmingham	AL	-12%	1
Mobile	AL	-13%	1
Rural (non-metropolitan)	AL	-30%	
Fayetteville-Springdale-Rogers	AR	-12%	0
Fort Smith	AR	-12%	0
Jonesboro	AR	-12%	0
Pine Bluff	AR	-12%	0
Little Rock-North Little Rock	AR	-11%	1
Rural (non-metropolitan)	AR	-25%	
Flagstaff	AZ	-16%	0
Yuma	AZ	-16%	0
Phoenix-Mesa	AZ	0%	1
Tucson	AZ	-8%	1
Rural (non-metropolitan)	AZ	-19%	
Riverside-San Bernardino	CA	9%	0*
Ventura	CA	9%	0*
Yolo	CA	2%	0*
Oakland	CA	30%	1*
San Jose	CA	30%	1*
Santa Cruz-Watsonville	CA	30%	1*
Santa Rosa	CA	30%	1*
Vallejo-Fairfield-Napa	CA	30%	1*
Los Angeles-Long Beach	CA	13%	1
Orange County	CA	16%	1
Sacramento	CA	0%	1
San Francisco	CA	30%	1
Bakersfield	CA	4%	0
Chico-Paradise	CA	4%	0
Fresno	CA	4%	0
Merced	CA	4%	0
Modesto	CA	4%	0
Redding	CA	4%	0
Salinas	CA	4%	0

Area Name	State	Coeff	Source
San Diego	CA	4%	0
San Luis Obispo-Atascadero-Paso Robles	CA	4%	0
Santa Barbara-Santa Maria-Lompoc	CA	4%	0
Stockton-Lodi	CA	4%	0
Visalia-Tulare-Porterville	CA	4%	0
Yuba City	CA	4%	0
Rural (non-metropolitan)	CA	-15%	
Boulder-Longmont	CO	1%	0*
Greeley	CO	1%	0*
Denver	CO	7%	1
Colorado Springs	CO	-4%	0
Fort Collins-Loveland	CO	-4%	0
Grand Junction	CO	-4%	0
Pueblo	CO	-4%	0
Rural (non-metropolitan)	CO	-19%	
Bridgeport	CT	31%	1*
Danbury	CT	31%	1*
New Haven-Meriden	CT	31%	1*
Stamford-Norwalk	CT	31%	1*
Waterbury	CT	31%	1*
Hartford	CT	19%	0
New London-Norwich	CT	19%	0
Rural (non-metropolitan)	CT	12%	
Washington	DC	30%	1
Wilmington-Newark	DE	3%	0*
Dover	DE	-15%	0
Rural (non-metropolitan)	DE	-19%	
Fort Lauderdale	FL	12%	1*
Miami	FL	12%	1*
Daytona Beach	FL	4%	0
Fort Myers-Cape Coral	FL	4%	0
Fort Pierce-Port St Lucie	FL	4%	0
Fort Walton Beach	FL	4%	0
Gainesville	FL	4%	0
Jacksonville	FL	4%	0
Lakeland-Winter Haven	FL	4%	0
Melbourne-Titusville-Palm Bay	FL	4%	0
Naples	FL	4%	0
Ocala	FL	4%	0
Orlando	FL	4%	0
Panama City	FL	4%	0
Pensacola	FL	4%	0
Punta Gorda	FL	4%	0

Area Name	State	Coeff	Source
Sarasota-Bradenton	FL	4%	0
Tallahassee	FL	4%	0
Tampa-St Petersburg-Clearwater	FL	4%	0
West Palm Beach-Boca Raton	FL	4%	0
Rural (non-metropolitan)	FL	-16%	
Albany	GA	-12%	0
Athens	GA	-12%	0
Augusta-Aiken	GA	-12%	0
Columbus	GA	-12%	0
Macon	GA	-12%	0
Savannah	GA	-12%	0
Atlanta	GA	10%	1
Rural (non-metropolitan)	GA	-16%	
Honolulu	HI	21%	0
Rural (non-metropolitan)	HI	11%	
Cedar Rapids	IA	-18%	0
Davenport-Moline-Rock Island	IA	-18%	0
Des Moines	IA	-18%	0
Dubuque	IA	-18%	0
Iowa City	IA	-18%	0
Sioux City	IA	-18%	0
Waterloo-Cedar Falls	IA	-18%	0
Rural (non-metropolitan)	IA	-30%	
Boise City	ID	-16%	0
Pocatello	ID	-16%	0
Rural (non-metropolitan)	ID	-19%	
Kankakee	IL	4%	0*
Chicago	IL	20%	1
Bloomington-Normal	IL	-11%	0
Champaign-Urbana	IL	-11%	0
Decatur	IL	-11%	0
Peoria-Pekin	IL	-11%	0
Rockford	IL	-11%	0
Springfield	IL	-11%	0
Rural (non-metropolitan)	IL	-20%	
Gary	IN	4%	0*
Bloomington	IN	-11%	0
Elkhart-Goshen	IN	-11%	0
Evansville-Henderson	IN	-11%	0
Fort Wayne	IN	-11%	0
Kokomo	IN	-11%	0
Lafayette	IN	-11%	0
Muncie	IN	-11%	0
South Bend	IN	-11%	0
Terre Haute	IN	-11%	0
Indianapolis	IN	-5%	1
Rural (non-metropolitan)	IN	-20%	
Lawrence	KS	-18%	0
Topeka	KS	-18%	0
Wichita	KS	-18%	0
Rural (non-metropolitan)	KS	-30%	
Owensboro	KY	-18%	0
Lexington	KY	-13%	1
Louisville	KY	-12%	1
Rural (non-metropolitan)	KY	-30%	
Alexandria	LA	-12%	0
Baton Rouge	LA	-12%	0
Houma	LA	-12%	0
Lafayette	LA	-12%	0
Lake Charles	LA	-12%	0
Monroe	LA	-12%	0
New Orleans	LA	-12%	0
Shreveport-Bossier City	LA	-12%	0
Rural (non-metropolitan)	LA	-25%	
Brockton	MA	19%	0
Fitchburg-Leominster	MA	19%	0
Lawrence	MA	19%	0
Lowell	MA	19%	0
New Bedford	MA	19%	0
Worcester	MA	19%	0
Boston	MA	33%	1
Barnstable-Yarmouth	MA	19%	0
Pittsfield	MA	19%	0
Springfield	MA	19%	0
Rural (non-metropolitan)	MA	12%	
Hagerstown	MD	6%	0*
Baltimore	MD	5%	1
Cumberland	MD	-15%	0
Rural (non-metropolitan)	MD	-19%	
Bangor	ME	12%	0
Lewiston-Auburn	ME	12%	0
Portland	ME	12%	0
Rural (non-metropolitan)	ME	12%	
Ann Arbor	MI	-2%	0*
Flint	MI	-2%	0*
Detroit	MI	7%	1
Benton Harbor	MI	-11%	0
Grand Rapids-Muskegon-Holland	MI	-11%	0
Jackson	MI	-11%	0
Kalamazoo-Battle Creek	MI	-11%	0
Lansing-East Lansing	MI	-11%	0
Saginaw-Bay City-Midland	MI	-11%	0
Rural (non-metropolitan)	MI	-20%	
Duluth-Superior	MN	-18%	0
Rochester	MN	-18%	0

Area Name	State	Coeff	Source
St Cloud	MN	-18%	0
Minneapolis-St Paul	MN	6%	1
Rural (non-metropolitan)	MN	-30%	
Columbia	MO	-18%	0
Joplin	MO	-18%	0
St Joseph	MO	-18%	0
Springfield	MO	-18%	0
Kansas City	MO	-5%	1
St Louis	MO	-9%	1
Rural (non-metropolitan)	MO	-30%	
Biloxi-Gulfport-Pascagoula	MS	-18%	0
Hattiesburg	MS	-18%	0
Jackson	MS	-18%	0
Rural (non-metropolitan)	MS	-30%	
Billings	MT	-16%	0
Great Falls	MT	-16%	0
Missoula	MT	-16%	0
Rural (non-metropolitan)	MT	-19%	
Asheville	NC	-8%	0
Fayetteville	NC	-8%	0
Goldsboro	NC	-8%	0
Greenville	NC	-8%	0
Hickory-Morganton-Lenoir	NC	-8%	0
Jacksonville	NC	-8%	0
Rocky Mount	NC	-8%	0
Wilmington	NC	-8%	0
Charlotte-Gastonia-Rock Hill	NC	-4%	1
Greensboro--Winston-Salem--High Point	NC	-6%	1
Raleigh-Durham-Chapel Hill	NC	5%	1
Rural (non-metropolitan)	NC	-19%	
Bismarck	ND	-18%	0
Fargo-Moorhead	ND	-18%	0
Grand Forks	ND	-18%	0
Rural (non-metropolitan)	ND	-30%	
Lincoln	NE	-18%	0
Omaha	NE	-18%	0
Rural (non-metropolitan)	NE	-30%	
Manchester	NH	12%	1*
Nashua	NH	12%	1*
Portsmouth-Rochester	NH	22%	0*
Rural (non-metropolitan)	NH	12%	
Atlantic-Cape May	NJ	7%	0*
Vineland-Millville-Bridgeton	NJ	7%	0*
Bergen-Passaic	NJ	31%	1*
Jersey City	NJ	31%	1*
Middlesex-Somerset-Hunterdon	NJ	31%	1*
Monmouth-Ocean	NJ	31%	1*

Area Name	State	Coeff	Source
Newark	NJ	31%	1*
Trenton	NJ	31%	1*
Rural (non-metropolitan)	NJ	-11%	
Albuquerque	NM	-16%	0
Las Cruces	NM	-16%	0
Santa Fe	NM	-16%	0
Rural (non-metropolitan)	NM	-19%	
Reno	NV	-16%	0
Las Vegas	NV	8%	1
Rural (non-metropolitan)	NV	-19%	
Dutchess County	NY	31%	1*
Nassau-Suffolk	NY	31%	1*
Newburgh	NY	31%	1*
New York	NY	42%	1
Albany-Schenectady-Troy	NY	-7%	0
Binghamton	NY	-7%	0
Buffalo-Niagara Falls	NY	-7%	0
Elmira	NY	-7%	0
Glens Falls	NY	-7%	0
Jamestown	NY	-7%	0
Rochester	NY	-7%	0
Syracuse	NY	-7%	0
Utica-Rome	NY	-7%	0
Rural (non-metropolitan)	NY	-11%	
Cleveland-Lorain-Elyria	OH	0%	1
Hamilton-Middletown	OH	-10%	0*
Akron	OH	-6%	0*
Cincinnati	OH	-9%	1
Canton-Massillon	OH	-11%	0
Lima	OH	-11%	0
Mansfield	OH	-11%	0
Steubenville-Weirton	OH	-11%	0
Youngstown-Warren	OH	-11%	0
Columbus	OH	-10%	1
Dayton-Springfield	OH	-9%	1
Toledo	OH	-14%	1
Rural (non-metropolitan)	OH	-20%	
Enid	OK	-12%	0
Lawton	OK	-12%	0
Oklahoma City	OK	-12%	0
Tulsa	OK	-12%	0
Rural (non-metropolitan)	OK	-25%	
Salem	OR	-10%	0*
Portland-Vancouver	OR	-6%	1
Corvallis	OR	-15%	0
Eugene-Springfield	OR	-15%	0
Medford-Ashland	OR	-15%	0
Rural (non-metropolitan)	OR	-15%	

Area Name	State	Coeff	Source
Philadelphia	PA	21%	1
Allentown-Bethlehem-Easton	PA	-7%	0
Altoona	PA	-7%	0
Erie	PA	-7%	0
Harrisburg-Lebanon-Carlisle	PA	-7%	0
Johnstown	PA	-7%	0
Lancaster	PA	-7%	0
Reading	PA	-7%	0
Scranton--Wilkes-Barre--Hazleton	PA	-7%	0
Sharon	PA	-7%	0
State College	PA	-7%	0
Williamsport	PA	-7%	0
York	PA	-7%	0
Pittsburgh	PA	-5%	1
Rural (non-metropolitan)	PA	-11%	
Providence-Fall River-Warwick	RI	19%	0
Rural (non-metropolitan)	RI	12%	
Charleston-North Charleston	SC	-8%	0
Columbia	SC	-8%	0
Florence	SC	-8%	0
Greenville-Spartanburg-Anderson	SC	-8%	0
Myrtle Beach	SC	-8%	0
Sumter	SC	-8%	0
Rural (non-metropolitan)	SC	-16%	
Rapid City	SD	-18%	0
Sioux Falls	SD	-18%	0
Rural (non-metropolitan)	SD	-30%	
Chattanooga	TN	-18%	0
Clarksville-Hopkinsville	TN	-18%	0
Jackson	TN	-18%	0
Johnson City-Kingsport-Bristol	TN	-18%	0
Memphis	TN	-18%	0
Knoxville	TN	-15%	1
Nashville	TN	2%	1
Rural (non-metropolitan)	TN	-30%	
Brazoria	TX	-7%	0*
Fort Worth-Arlington	TX	-3%	0*
Galveston-Texas City	TX	-7%	0*
Dallas	TX	6%	1
Houston	TX	-2%	1
Abilene	TX	-12%	0
Amarillo	TX	-12%	0
Austin-San Marcos	TX	-12%	0
Beaumont-Port Arthur	TX	-12%	0
Brownsville-Harlingen-San Benito	TX	-12%	0
Bryan-College Station	TX	-12%	0

Area Name	State	Coeff	Source
Corpus Christi	TX	-12%	0
El Paso	TX	-12%	0
Killeen-Temple	TX	-12%	0
Laredo	TX	-12%	0
Longview-Marshall	TX	-12%	0
Lubbock	TX	-12%	0
McAllen-Edinburg-Mission	TX	-12%	0
Odessa-Midland	TX	-12%	0
San Angelo	TX	-12%	0
San Antonio	TX	-12%	0
Sherman-Denison	TX	-12%	0
Texarkana	TX	-12%	0
Tyler	TX	-12%	0
Victoria	TX	-12%	0
Waco	TX	-12%	0
Wichita Falls	TX	-12%	0
Rural (non-metropolitan)	TX	-25%	
Provo-Orem	UT	-16%	0
Salt Lake City-Ogden	UT	-5%	1
Rural (non-metropolitan)	UT	-19%	
Charlottesville	VA	-15%	0
Danville	VA	-15%	0
Lynchburg	VA	-15%	0
Roanoke	VA	-15%	0
Norfolk-Virginia Beach-Newport News	VA	-10%	1
Richmond-Petersburg	VA	-1%	1
Rural (non-metropolitan)	VA	-19%	
Burlington	VT	12%	0
Rural (non-metropolitan)	VT	12%	
Bremerton	WA	-7%	0*
Olympia	WA	-7%	0*
Tacoma	WA	-7%	0*
Seattle-Bellevue-Everett	WA	1%	1
Bellingham	WA	-15%	0
Richland-Kennewick-Pasco	WA	-15%	0
Spokane	WA	-15%	0
Yakima	WA	-15%	0
Rural (non-metropolitan)	WA	-15%	
Kenosha	WI	4%	0*
Racine	WI	-7%	0*
Milwaukee-Waukesha	WI	-4%	1
Appleton-Oshkosh-Neenah	WI	-11%	0
Eau Claire	WI	-11%	0
Green Bay	WI	-11%	0
Janesville-Beloit	WI	-11%	0
La Crosse	WI	-11%	0
Madison	WI	-11%	0

Area Name	State	Coeff	Source
Sheboygan	WI	-11%	0
Wausau	WI	-11%	0
Rural (non-metropolitan)	WI	-20%	
Charleston	WV	-15%	0
Huntington-Ashland	WV	-15%	0
Parkersburg-Marietta	WV	-15%	0
Wheeling	WV	-15%	0
Rural (non-metropolitan)	WV	-16%	
Casper	WY	-16%	0
Cheyenne	WY	-16%	0
Rural (non-metropolitan)	WY	-19%	

Key to 'Source' Column:
0 – represents an area without enough for-profit properties to generate its own coefficient. Coefficient based either on a statewide or census-wide grouping.
0* - represents an area without enough properties to get its own coefficient but gets an average of statewide metro coefficient and the coefficient for the primary area in the CMSA
1 – represents an area with enough for-profit properties to generate its own coefficient
1* - Represents area where coefficient is aggregated to the CMSA level, with the exception of New York, where NYC retains its own estimate and the balance of the CMSA gets a separate estimate.
No entry – represents rural areas

CHAPTER 2
Model Estimates

This chapter explains (1) how the model gets applied to generate estimated operating costs for each public housing property and for each PHA, (2) the distributional effects on PHAs relative to current funding, and (3) the estimated impact of the model on federal operating subsidy requirements.

Please note that the model estimates the costs to operate well-run public housing, exclusive of utilities and real estate taxes:

- For a discussion of utility funding, please see Chapter 5.

- PHAs are exempt from real estate taxes but instead make a Payment in Lieu of Taxes (PILOT). A PHA's PILOT payment equals 10 percent of rent less utilities, although some municipalities waive the PILOT. Because a PHA's PILOT depends on its unique mix of utility costs and rent payments, under the proposed methodology each PHA would receive its cost model estimate, plus its respective PILOT payment. Nationally, PHAs pay approximately $87 million in PILOT payments, which represents about 2% of public housing's non-utility operating costs.

- Model estimates are generated for calendar year 2000 and are compared with PHA Allowable Expense Levels, or AELs, for 2000.[11] Under the PFS, the AEL represents a PHA's non-utility expense level, prior to any special "add-ons", which, nationally, account for about another 5% of the combined AELs. As noted later in this chapter, at least two-thirds of these add-ons (such as funding for audit costs) would be eliminated since the costs associated with them are already included in the FHA benchmark cost. Hence, the AELs are a good proxy for comparison with the model-predicted amounts in that, nationally, the cost of PILOT payments are almost equal to the cost of add-ons that GSD recommends be eliminated. At any individual PHA, however, the actual impact may be different.[12]

For the remainder of this document, the term "model-predicted amount" or "model-estimate" is intended to mean the recommended expense level for each property,

[11] There is a slight lag is fiscal years. PHA 2000 fiscal years includes PHAs with the following fiscal years: Janauary 1, 2000-December 31, 2000, April 2000-March 31, 2001, July 1-2000-June 20, 2001, and October 1, 2000-September 30, 2001.

[12] The 2000 AELs also reflect the Interim Operating Fund Formula changes as a result of the Neg-Reg adjustments (while these rules did not go into effect until 2001, the amounts shown reflect what these amounts would have been had they been in effect). Technically, these 2000 AELs were what was assigned to PHAs in preparing their 2001 PFS worksheets, prior to applying the 2001 inflation factor.

excluding taxes and utilities. These amounts are expressed in "per-unit-monthly" figures, or PUMs.

MODEL APPLICATION

Background: Understanding reference categories

For every variable in the model, there is a reference category. For example, for the neighborhood poverty rate variable, the included categories (for which coefficients are presented) are: 20% - 30% poverty rate; 30% - 40% poverty rate; and greater than 40% poverty rate. The reference or baseline category is 0% – 20% poverty rate. Thus, the coefficient on the variable "20% - 30% poverty rate", which is 2 percent, can be interpreted as follows: "The PUM cost to run a property in a neighborhood with a 20% - 30% poverty rate is two percent higher than the PUM cost to run a property in the reference neighborhood." This is why, for each variable, one of the categories is omitted from the model: it is the reference category against which you compare the other categories. Similarly, consider the Clientele variable. The reference category (omitted from the model) is "Family Property." The variable in the model is "Senior Property", and the coefficient on that variable is – 6%. This coefficient can be interpreted as follows: "The PUM cost to run a Senior Property is six percent lower than the PUM cost to run a property in the reference category (i.e., a family property)."

Within each set of categories (for example, among age categories, or among clientele categories) it does not matter which category is set as the reference. For example, if Senior Properties were set as the reference instead of Family Properties, then the coefficient on Family Properties would be + 6 percent, but the interpretation (and model predicted costs) would be the same. The interpretation of the Family Property coefficient would be: "The PUM cost to run a Family Property is six percent higher than the PUM cost to run a property in the reference category (i.e., a senior property)." It should be clear that the choice of which category is set as the reference makes no difference to the model results. Whether one says that "family properties cost 6 percent more than senior properties" or "senior properties cost six percent less than family properties", the cost implications are identical.

The following are the reference categories in the model:

- For property size, the reference category is less than 150 units.
- For property age, the reference category is less than 16 years old.
- For the distribution of unit sizes, the reference category is a property with all one-bedroom units.
- For building type, the reference category is walkup-type properties.
- For central City/Suburb location, the reference category is Central City location.
- For neighborhood poverty rate, the reference category is a neighborhood with a poverty rate less than 20 percent.

- For percent Section 8 assisted, the reference category is zero percent assisted.
- For ownership type, the reference category is for-profit ownership.
- For geographic location, GSD selected metropolitan Cleveland as the reference category. GSD chose Cleveland because its costs are close to average national housing costs, making the interpretation of the other geographic area coefficients easier.

Applying the Model

The cost to operate a property with the exact set of baseline characteristics described above is $178 PUM, i.e., a property in Cleveland, OH, with the indicated reference categories. The natural log of this baseline property, also known as the model intercept, is 5.18, which, as shown, will be used below to calculate model estimates for all other properties.

With the above as background, there are four steps to generating a model estimate for any individual public housing property.[13]

- One, add the sum of the nine coefficients described in Chapter 1 (all except ownership type) to the model intercept of 5.18.

- Two, take the exponent of that sum.[14]

- Three, multiply the result by 110% to reflect the non-profit adjustment.

- Four, apply the floor and ceiling rules. The floor is $200 for a senior property and $215 for a family property. The ceiling is $420 ($480 for New York City). Estimates greater than $325 are reduced by 4%, with the exception of New York City.

The above steps will generate a model estimate for each public housing property for 2000.

Table 2.1 illustrates how the model works for Turner Courts, an actual public housing property in Dallas, TX. Turner Courts is a 294-unit family property that is 48 years old, has an average of 2.39 bedrooms per unit, and is located in a neighborhood with a poverty rate over 40% in the central city (Dallas) of the Metropolitan Statistical Area. The building type is walk-up/garden.

[13] This calculation yields a close estimate of the model predicted number. Technically, there is an additional step wherein the model corrects for the semi-log transformation by adding one half of the root mean error squared to the coefficients before taking the exponent. This small calibration step typically results in not more than a few dollars difference from the somewhat simplified four-step process described.
[14] This can be accomplished in an Excel spreadsheet with the formula: =EXP(*sum of coefficients*).

Table 2.1: Calculation of Model Estimate for Turner Courts in Dallas, TX

Coefficient	Percentage
1. Dallas, TX Metro Adjustment	6%
2. Size: > 150 units	-1%
3. Age: 48 years	10%
4. Unit Size:	
• 46% 2 BR (0.46 x 18%)	8%
• 25% 3 BR (.25 x 38%)	10%
• 15% 4+ BR (.15 x 49%)	7%
5. Walkup/Garden	0%
6. Family	0%
7. Central City	3%
8. Poverty Rate: 40%+	7%
9. Percent Assisted: 100%	6%
10. Non-profit	10%
Sum of Adjustments	66%
Estimated PUM (exponent of 5.18 plus .66) times 1.10	**$345**
Minimum	**$215**
Maximum	**$420**
Final Model-Predicted Amount (since the model result is greater than $325, it is reduced by 4%)	**$331**
Estimated Annual Operating Budget (PUM x 294 units x 12) (excl. utilities and real estate taxes)	**$1,167,768**

The sum of the coefficients for Turner Courts is .66. This amount is added to the model intercept of 5.18, for a total of 5.84. The predicted operating cost is the exponent of this ($e^{5.84}$), which results in an estimated operating cost of the property of $345. However, because the property's model estimate falls between $325 PUM and $420 PUM, the final estimate is reduced by 4%, for a final model generated amount of $331 PUM. The total annual cost to operate the property, therefore, is estimated as $1,167,768 ($331 x 12 months x 294 units). The actual amount of subsidy received by the agency would depend on the property's rental income and utility expenses.[15]

[15] Under the PFS, a PHA's operating subsidy is calculated, essentially, by subtracting estimated rental income from the allowable utility and non-utility expense levels. Thus, PHAs with otherwise similar characteristics will receive different amounts of subsidies depending on levels of rental income.

If Turner Courts were located in Newark, NJ, for example, the model estimate would be approximately $83 PUM higher (25%), reflecting the higher geographic coefficient for Newark (31% versus 6%). Similarly, if Turner Courts were located in a census tract with less than 20% poverty, it would have its model estimate reduced by 7%.

Appendix D compares model estimates for each PHA with current AELs, listed alphabetically, by state. These agency-wide estimates are simply the unit weighted averages for each property. Appendix E shows the model estimates for each public housing property, also listed alphabetically, by state and PHA. Properties are listed along with their respective model variables, the preliminary model estimate, and the final model estimate after application of the floor and ceiling rules. All amounts shown are for 2000.

Model estimates should be viewed in the context of the following:

- As noted in the beginning of this chapter, PHAs are currently entitled to various add-ons under PFS that would be eliminated under the cost model. While these particular add-ons, cumulatively, represent just 3% of non-utility expenditures, the amount received by individual PHAs can vary. The figures presented in Appendix C and D, comparing model-predicted amounts with current AELs, do not take into consideration existing add-ons.

- Model estimates also do not include PILOT payments, which would be added to each agency's model estimate.

- There are a number of public housing properties that are currently "distressed" as a result of social, physical, and/or management problems; however, there is nothing that identifies distressed properties in the public housing database. GSD was tasked with the responsibility of determining the cost to operate well-run public housing. The model does not attempt to estimate the operating cost of these distressed properties. Distressed properties, therefore, are assigned the same model-predicted amount as non-distressed properties.[16]

DISTRIBUTIONAL EFFECTS

Applied to public housing, the model produces a national unit weighted average of $297 PUM for 2000, which compares with a unit-weighted average of $242 PUM for the properties in the FHA sample and $283 PUM in AELs under the PFS (Figure 2.1). In other words, because public housing has property characteristics that are identified with higher costs (older, located in higher cost areas and higher poverty rate census tracts, more bedrooms per unit, etc.), the model generates estimates for public housing that are

[16] Further, GSD believes that the focus should be less on determining the cost to operate these distressed properties than correcting the source of that distress.

23% higher than the actual mean for FHA properties. It also suggests that expense levels should be about 5% higher than currently provided under the PFS.

Figure 2.1: Nationwide Average Operating Costs, PUMs (2000)

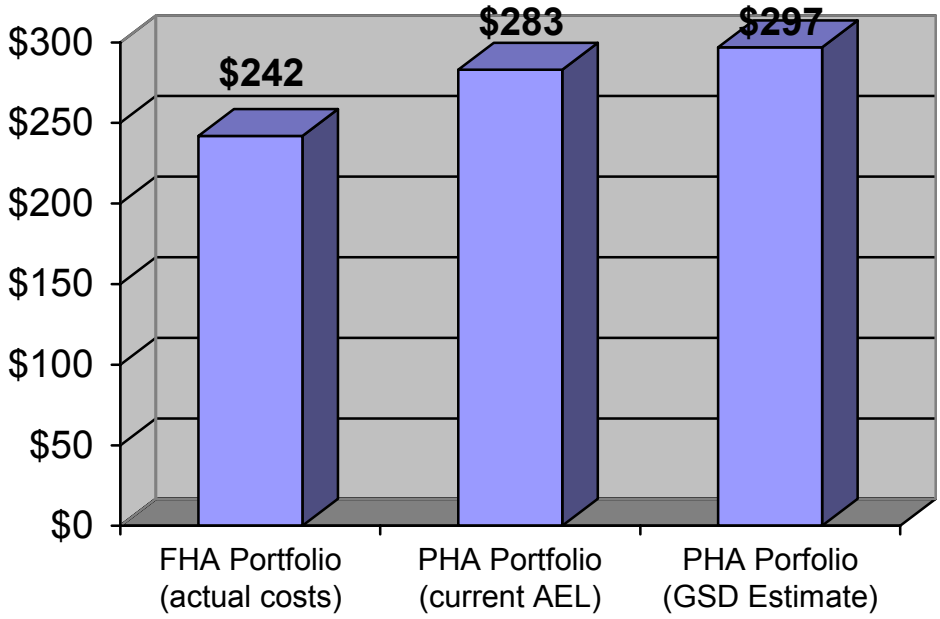


Table 2.2 compares the model-predicted estimates for Fiscal Year 2000 (FY00) with the FY00 Allowable Expense Levels (AELs) for public housing under the Operating Fund, broken down by PHA size.[17] (An agency-specific AEL is the sum of the model-produced estimates for each property, using a unit-weighted average.). For each PHA size grouping, with the exception of the largest grouping, the model produces a higher average operating cost figure than current funding levels: 10% for Very Small agencies, 19% for Small agencies, 16% for Medium agencies, 6% for Large agencies, and -3% for Very Large agencies. (The smaller agencies had their AELs increased as a result of the work of the Neg-Reg Committee; otherwise, their rate of increase would have been similar to the Small and Medium size groups.) Excluding Puerto Rico (+69%), New York (-10%), and Chicago (-26%), however, the remaining Very Large agencies will have levels increased 3% and the increase for the nation is raised from 5% to 10%.[18]

[17] Tabulations do not include 27 agencies (4,072 units) with missing AELs (0.3% of the entire public housing portfolio). Additionally, GSD could not estimate costs for 909 properties, representing 40,998 units, because of missing variables in the HUD public housing database. Based on the characteristics of the PHAs where these missing properties were located, the overall results would not be appreciatively affected; however, individual PHAs may be impacted. Finally, unit counts are per HUD's 7/31/01 count of units under Annual Contributions Contracts.

[18] The Chicago Housing Authority (CHA) is a Moving-to-Work (MTW) demonstration site. MTW agencies have their subsidies calculated slightly differently than other PHAs and no longer use AELs. The AEL shown for Chicago, reported by HUD, may be higher than what might otherwise represent the CHA's AEL if it were no longer in the MTW demonstration. Other MTW agencies may be similarly affected (up to 30 agencies).

Table 2.2: AEL vs. Cost Model Operating Estimates by HA Size, PUMs

PHA Category	PHA Total Units	2000 AEL	2000 Model Estimate	% Diff.
< 250 units	201,526	$219	$240	10%
250 to 499 units	144,580	$214	$255	19%
500 to 1,249 units	184,264	$236	$273	16%
1,250 units to 6,599 units	318,375	$271	$287	6%
6,600 or more units	338,938	$384	$371	-3%
National Total	1,187,683	$283	$297	5%

The model also narrows the distribution of AELs among agencies (Table 2.3). Existing PHA AELs range from a low of $139 PUM to a high of $648 PUM. Under the model, agency-level AELs would range from $200 to $447 PUM. Property-specific AELs under the model range from $200 to $480 PUM (since PFS does not generate property-specific AELs, there is no comparable PFS range).

Table 2.3: National Distribution of Cost Model Estimates vs. AEL, PUMs

	Agency-wide		Property-specific	
	Current AEL	Predicted Cost	Current AEL	Predicted Cost
Minimum	$139	$200	n/a	$200
25th pct	$195	$215	n/a	$218
Median	$224	$232	n/a	$257
Mean	$242	$243	n/a	$268
75th pct	$267	$262	n/a	$299
Max	$648	$447	n/a	$480

As shown in Table 2.4, 76% of PHAs (and 62% of units) have a cost model estimate that is the same or higher than the current AEL, and the cost model predicts operating costs that are 20% higher than AELs for nearly half of those agencies (28% of all agencies, and 31% of units). 17% of agencies (30% of all units) have up to a 10% lower estimate and another 6% (7% of units) have estimates that are more than 10% lower.

Table 2.4: Differences in PHA Operating Costs: Cost Model Estimate vs. AEL

Cost Estimate Difference from AEL	Number of Agencies	% of Agencies	Number of Units	% of Units
More than 20% lower	52	2%	53,385	4%
20% to 10% lower	192	4%	39,944	3%
10% to 0% lower	534	17%	359,423	30%
0% to 10% higher	672	21%	189,963	16%
10% to 20% higher	839	27%	172,974	15%
More than 20% higher	890	28%	371,762	31%
Total	3,127	100%	1,187,451	100%

* Because of rounding, individual items may not add up to 100%.

ESTIMATED IMPACTS ON SUBSIDY LEVELS

To generate 2002 model estimates, GSD inflated the 2000 model estimates by 2.25% a year, compounded, representing the national inflation factor in those years for the PFS. Amounts were also inflated by an aging factor, known as the "small delta", of 0.5% annually.[19] Approximately $130 million in existing add-ons under the PFS would be eliminated since these items are already included in the FHA benchmark. However, approximately $101 million in PILOT payments must be added to the cost model since the model estimates do not include taxes.

Table 2.5 compares actual subsidy requirements in Federal Fiscal Year 2002, the most recent year for which actual data is available, with the recommended cost model. In FFY02, total operating requirements under the Operating Fund were $5.85 billion. Of that amount, $2.31 billion was paid for with local PHA income (mostly rent) and $3.54 billion was funded with federal operating subsidy.

[19] Under the PFS, each agency's AEL is increased, in addition to the assigned inflation rate, by 0.5% to reflect the "aging" of the public housing stock. This amount would be substantially equivalent to what would occur under the proposed cost model since properties would see an increase in their age coefficient each year until they reached 26 years. Approximately 40% of the public housing inventory is less than 26 years old.

Table 2.5: Comparison of HUD PFS '02 Estimates with Cost Model

No.	Item	HUD PFS '02 Requirements	Cost Model, '02	Note
1	Non-utility Expense Levels	$4,256,015,423	$4,502,310,740	Based on 1,196,297 units receiving funding in FFY 2002, exclusive of agencies receiving audit-only costs. GSD cost model estimate of $297 PUM for '00 inflated at a rate of 2.25% for '01 and '02. Figures also include annual adjustment of 0.5% for "small delta."
2	PILOT Payments	$0	$101,076,242	Current funding includes amounts for PILOT payments; Harvard model excludes PILOT. PILOT calculated as 10% of rent less utilities (Assumes full payment of PILOT – some PHAs currently have PILOT waived.)
3	Add-ons included in the benchmark	$12,050,000	$0	These "add-ons" would be eliminated because they represent costs already contained in the FHA benchmark. For example, PHAs currently receive an add-on for their annual audit. Audit costs are included in the FHA benchmark.
	Audit	$53,294,403	$0	
	FICA/Unemployment	$11,676,236	$0	
	Other approved law changes	$17,639,897	$0	
	Unit reconfigurations	$8,424,844	$0	
	Non-dwelling units	$27,256,750	$0	
	Resident participation	$130,342,130	$0	
	Subtotal			
4	Add-ons outside the benchmark			These "add-ons" represent discretionary HUD programs or initiatives and not reimbursements for expenses already incurred by operators of FHA housing. For scoring purposes, GSD assumes these initiatives would be continued.
	Family Self Sufficiency	$9,418,475	$9,418,475	
	Funding to audit-only eligible PHAs	$300,946	$300,946	
	Energy add-on for loan amortization	$1,132,904	$1,132,904	
	Long-term vacancy units	$3,368,483	$3,368,483	
	Transition Funding	$449,819	$449,819	
	Phase down for demolitions	$40,506,177	$40,506,177	
	Deprogrammed units	$15,989,720	$15,989,720	
	Other adjustments	$17,615,772	$17,615772	
	Subtotal	$88,782,296	$88,782,296	
5	Utilities	$1,271,302,356	$1,271,302,356	This amount reflects actual PHA utility expenditures. The model does not affect these expenditures.
6	Utility Adjustments	$101,028,349	$101,028,349	These amounts represent payments to PHAs for changes in the "rolling base" or utility rates. The model does not affect these adjustments.
7	Total Requirements (lines 1 through 6)	$5,847,470,553	$6,064,499,983	
8	Total PHA Income	$2,308,092,292	$2,308,092,292	This is the income reported by PHAs for the purposes of calculating operating subsidy (actual income is higher; does not include "other" or "investment" income).
9	Operating Subsidy (line 7 minus line 8)	$3,539,378,262	$3,756,407,691	
10	Increase in Subsidy		$217,029,429	

As shown in Table 2.5, total operating requirements under the cost model are estimated to be $6.06 billion, resulting in the need for $3.76 billion in operating subsidies, or a $217 million increase in subsidy.[20]

To this amount, GSD recommends the following adjustments:

- **Modernized public housing.** As noted earlier, the public housing database does not identify which public housing properties have been comprehensively modernized. A modernized property should have the cost structure of a property that is relatively new. There is an 8% difference in costs between a property that is 15 years old (2% coefficient) and one that is 26 years old (10% coefficient). Probably on the order of 15-20% of the public housing portfolio has been comprehensively modernized in recent years and should not be treated, per the cost model, as 26 year-old properties. (About 60% of the public housing inventory is more than 25 years old.) Although recognizing that there is no uniform definition of a comprehensively modernized property, GSD believes that HUD can, through field office surveys, both identify properties that have been modernized and adopt a reasonable standard of "comprehensive modernization" (at least to the level that the property is more like a 15 year old building/system than a 26 year-old property). Savings could run $25-$50 million.

- **"Young-disabled" Properties**. In keeping with observations in Chapter 4, GSD believes that the regulations governing the admission of "young-disabled" in elderly public housing properties should be the same as that for assisted housing, where, practically, there is a 10% cap on admissions of young-disabled. Although the results were mixed – some PHAs reported no extra costs serving this population and others (though less successfully able to demonstrate) believed that costs were higher. While GSD still cannot explain why many agencies do not apply for "senior-only" designation under public housing rules, even if it is somewhat more cumbersome than found in assisted housing, it seems reasonable that public housing senior properties that have since taken on a high percentage of "young-disabled" should benefit from the "family" as opposed to "senior" property coefficient, a 6% differential. As is the case with the modernization adjustment, the public housing database cannot identify which or how many properties would be affected. However, the estimated impact might be on the order of $20 million annually.

- **PHA receipts**. The 1998 QHWRA allowed PHAs to retain all non-dwelling revenue, which would no longer be offset against operating subsidy. In 2002, PHAs reported $150 million in investment income and $230 million in other income.[21] In total, these amounts exceed the subsidy impact from the model. (PHAs are also permitted to use Capital Funds for operating items and it is believed that not less than $150 million of Capital Funds is spent annually for such purposes.) GSD recommends that at least $100 million (of the $380 million)

[20] The data source for HUD's 2002 operating subsidy requirements is different than the one contained in Table 2.2, which accounts for the slightly different estimates.
[21] *Report of Revenue and Expenses by PHA Size, HUD/REAC, February 5, 2003.*

from these local revenues that are not offset against subsidy in the PFS be used to fund the estimated increase in formula levels, or about one-half of the overall increase. While it seems prudent to use these local receipts to pay for operating costs, it also seems appropriate that PHAs should have an incentive to be entrepreneurial and therefore should not be asked to contribute all of their investment/other income (the intent of the QHWRA legislation).[22] At $100 million, this amounts to about $7 PUM nationally. Within the FHA database, the mean income from laundry receipts, vending income, and tenant charges alone was $7 PUM (with a median of $5 PUM). It appears that $7 PUM is an amount that a typical PHA could easily achieve, still leaving sufficient incentives to be entrepreneurial.[23]

The three above-mentioned adjustments would reduce the increased subsidy requirements to $112 million, representing a 3% increase in subsidy.

GSD 2002 Subsidy Requirements	$3,756,407,691
Less: Actual HUD 2002 PFS Subsidy Requirements	$3,539,378,262
Difference	$217,029,429
Subtract: Modernization (lower range of estimate)	($25,000,000)
Subtract: Local Receipts	($100,000,000)
Add: Young-disabled adjustment	$20,000,000
Net Federal Fiscal Impact	$112,029,429
Percentage Impact	3%

[22] In 2002, PHAs reported public housing operating reserves of approximately $2.8 billion (Source: *Operating Reserve Summary, HUD/REAC, November, 2002*), or about $2,500/unit. These levels help explain the $130 million in investment income. GSD is hesitant to "score" more of this income in that these "operating" reserves could be transformed into real "replacement reserves." It makes sense that PHAs should maintain working capital equal to about two months of operating costs (around $500 million). Much of the balance could represent the initial contribution into a replacement reserve account for each property, the investment income from which would be retained in those accounts to offset future costs of replacement items, as is customary with such accounts.

[23] For administrative simplicity, GSD would also favor a system that simply "imputes" an amount that all properties are expected to contribute and eliminate the need for year-end reconciliations. For example, if the imputed amount were $7 PUM, PHAs that earned more than that amount would not need to contribute any additional funds if actual revenues were higher. Conversely, PHAs that generated less than those amounts would not be reimbursed with federal subsidies given that these levels appear attainable to the average operator.

CHAPTER 3
The Public Housing Regulatory Environment

In this chapter GSD examines the cost impact from public housing's unique operating regulations. In the next chapter, The Public Housing Operating Environment, GSD examines the collective set of local constraints, expectations, and mandates, outside of any federal regulatory requirement, that also drive costs. While the two chapters will discuss findings for each factor separately, conclusions with respect to what magnitude of add-on to the benchmark derived formula is warranted will fall at the end of the operating environment chapter since the two items are so closely linked.

The term regulation is used throughout this document to refer to formal requirements imposed on operators of public or assisted housing, whether purely administrative in nature or the result of legislation.

CONTEXT

One of the major factors in adopting a benchmark approach to this study was the fact that the main body of regulations governing public and FHA assisted housing are quite similar. With some exceptions, explained below, operators of public and assisted housing must abide by the same rules with respect to who is eligible, what preferences are provided for admission, how rent is calculated[24], and the type of lease that must be used. PHAs and assisted operators must also comply with the same fair housing, equal opportunity, and environmental laws.

Within this fairly uniform regulatory framework, GSD identified 14 operating rules/ regulations that are unique to public housing – from the requirement to admit pets in family housing to the need to offer residents a formal grievance whenever the PHA initiates legal action.[25] This list was published for comment on GSD's web-site and discussed at numerous public meetings and, today, represents the consensus of two years of consideration by experienced actors throughout the affordable housing field.

Operators of assisted housing also have "unique" requirement of their own, although fewer of them. These include:

[24] As more fully explained in this chapter, there are certain different income "exclusions" provided in public housing, and a slightly different minimum rent provision, but the definition of income, the allowable deductions, and the percentages to apply to determine the rent payment are essentially the same.

[25] In addition to these 14 differences, PHAs are required to provide residents with a 14-day notice in the event of non-payment of rent. Although assisted housing does not have the same 14-day requirement, assisted operators must provide residents with a 10-day period in which to request an informal hearing before which any formal action can begin. (Public housing must also provide "formal" grievances but those grievances can be provided during the 14-day period.) Hence, the difference here is a matter of four days. Consequently, GSD did not consider this a material difference. Still, as discussed in Appendix H, GSD recommends this regulation be uniform between public and assisted housing.

- The need to provide property-specific financial reporting (as opposed to agency-specific) and, depending on the program, the need to request HUD approval for project-specific rent increases;

- The need to request HUD permission for use of replacement reserve funds for non-routine items (and frequently the need to demonstrate lowest-responsible bids for items of a larger nature);

- The need to prepare annual audited financial statements for each property by a qualified and independent third-party; and

- The need to conduct an "interim" reexamination (to effect a change in rent) whenever a resident's income increases by more than $40 per month (there is no such requirement in public housing; PHAs are only required to recertify incomes on an annual basis).

CASE STUDY PARTICIPATION

In an attempt to estimate the cost of these unique regulatory requirements, GSD conducted formal case studies of ten PHAs.[26] These same PHAs were also used to observe public housing's unique operating environment, the subject taken up in Chapter 3. The agencies participating in the case study research had scores on their Public Housing Assessment System (PHAS) of 87 (out of 100) or higher on the Management Operations component.[27] Effort was made to include agencies of differing size and geographic location. However, because the 18 PHAs that are categorized as Very Large (more than 6,600 units) account for around 31% of the public housing program, GSD included at least three such Very Large PHAs in the case study research. Table 3.1 lists the participating agencies.

[26] In addition to these ten formal sites, GSD conducted 14 "informal" or "pilot" case studies. This earlier research was intended to inform the protocol for the formal case studies. While less precise in their data gathering, these pilot case studies resulted in similar observations and findings.

[27] Source: REAC Data Warehouse, July 2, 2002. The PHAS system includes four components: Financial, Physical, Resident Survey and Management Operations. The scores, weights, and protocols used for the three components have been the subject of extensive industry debate and, until recently, the scores for many of these components have been advisory. The indicators comprising the Management Operations Component, however, have been more widely accepted. Consequently, GSD chose to use only the Management Operations component for agency selection. A PHA receives a maximum score of 30 under the Management Operations component. The values shown in Table 2.1 have been adjusted to reflect a 100-point scale.

Table 3.1: Case Study Agencies

Agency	Units	Size Group	MASS Score
Gloucester, MA, Housing Authority	78	Small	97
Kingston, NY, Housing Authority	131	Small	100
Laurinburg, NC, Housing Authority	492	Medium	100
Pinellas County, FL, Housing Authority	595	Medium	87
Housing Commission of Anne Arundel, MD	1,022	Medium	100
Phoenix, AZ, Housing Authority	2,554	Large	97
Dayton, OH, Housing Authority	4,018	Large	87
San Antonio, TX, Housing Authority	6,839	Very Large	87
Los Angeles, CA, Housing Authority	7.457	Very Large	97
Housing Authority of Baltimore City, MD	13.699	Very Large	87

CASE STUDY APPROACH

Each case study agency received a data collection and interview guide, indicating the data that would be requested and the types of questions that would be asked to identify the costs of these different regulations. GSD generally sent two-and three-person research teams to each agency. For the smaller agencies, the site visits lasted two days and for the larger agencies the site visits lasted three days. There was also significant post-visit data collection and follow-up with each agency.

For each unique operating regulation, GSD recorded how each of the case study agencies had implemented those regulations and attempted to obtain any supporting cost data. Particular attention was paid to what might be considered reasonable implementation of the spirit of the regulation versus local choices regarding implementation that might go beyond any federal mandate.

Reasonable efforts were made to obtain supporting cost data, although it should be noted that PHAs would not normally be expected to keep cost data in these specific categories. PHAs do not maintain expense records, for example, of what it costs each year to hold formal grievance hearings or prepare an Annual Plan. For many of the regulatory differences, the case study agencies simply reported that there was no material cost impact. A particular regulation might be "annoying" or be viewed as providing little value or benefit, but was inconsequential in terms of cost. In other instances, there might be no reasonable way for the PHA to isolate the exact costs. In these cases, agency staff and GSD would then develop a set of assumptions that could lead to an estimate for that item. The few instances where agreement could not be reached between GSD and the agency are so noted in the case study field notes.

GSD also undertook a companion survey of at least one non-profit owner of assisted housing in each case study area. The intent of the non-profit survey was to provide a means to interpret findings on both sets of PHA case study questions in order to weigh whether PHAs have "more" organizational and regulatory costs than typical housing non-profits in their community. The case study agency was asked to suggest a non-profit comparable and, where feasible, this organization was contacted and surveyed. In

instances where the PHA was unable to identify a comparable, GSD used its own sources to identify a suitable comparable. Most of the non-profit surveys were conducted by telephone, although in two instances the interviews were conducted on site. See Appendix C for a more detailed description of methodology and findings from the non-profit survey.

FINDINGS

Table 2.2 includes a summary chart of the estimated costs associated with implementing public housing's different regulatory requirements, observed across the case study agencies. The costs generally ranged from about $1 PUM to $4 PUM, or about 1-2% of the non-utility operating budget, although one small agency had costs of $19 PUM, or 6% of non-utility operating costs.

Table 2.2: Estimated Costs of Public Housing's Unique Regulatory Requirements Among Case Study Agencies

	Anne Arundel	Baltimore	Dayton	Gloucester	Kingston	Laurinburg	Los Angeles	Phoenix	Pinellas County	San Antonio
1. Cooperation with Welfare Agency	$0.00	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.17	$0.00
2. Deconcentration	$0.00	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
3. Grievance Policy	$0.00	$0.30	$0.04	$1.44	$1.46	$0.00	$.07	$0.21	$0.00	$0.04
4. Pet in Family Housing	$0.00	$1.05	$0.13	$2.67	$1.59	$0.00	$0.00	$0.03	$0.17	$0.00
5. Rent Rules	$0.00	$0.15	$0.83	$0.32	$0.19	$0.30	$0.00	$0.42	$0.32	$0.00
6. Section 3	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.01
7. Section 12(a) Wage Rates	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
8. Procurement	$0.00	$0.50	$0.07	$0.00	$0.00	$0.00	$0.63	$0.00	$0.00	$0.03
9. Waiting lists	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
10. PHAS	$0.00	$0.62	$0.03	$0.00	$1.84	$0.37	$.33	$0.66	$1.22	$0.15
11. Annual Unit Inspections	$0.83	$0.00	$0.45	$5.56	$0.00	$1.67	$0.93	$0.83	$0.00	$0.00
12. Annual Plan	$0.53	$0.46	$0.47	$0.00	$0.82	$1.73	$.88	$1.33	$0.51	$0.26
13. Resident Participation Requirements	$0.00	$0.00	$0.00	$8.55	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
14. Young-disabled in Elderly Buildings	$0.00	Not able to estimate cost	$0.00	$0.00	$0.38	Not able to estimate cost	$0.00	$0.31	$0.64	$0.00
TOTALS	**$1.36**	**$3.07**	**$2.03**	**$18.54**	**$6.28**	**$4.06**	**$2.74**	**$3.79**	**$3.04**	**$0.49**

A discussion of each regulation follows, beginning with those regulations that were least consequential in terms of costs.

Cooperation Agreement with Welfare Agency

PHAs must execute a "cooperation agreement" with the local welfare agency. Most agencies reported no ongoing cost of implementing this requirement. Indeed, most felt it was simply good business practice.

Deconcentration Requirements

PHAs must analyze their housing stock each year to determine if there are large disparities in resident incomes among their properties. Based on that data, PHAs may be required to adopt remedial actions. Most agencies reported no material cost with implementing this requirement. The rule only applies to family properties, few of which appear to fall outside the established income range. Further, the remedial steps that must be taken when a property falls outside the established income range generally involved changes in admissions preferences that were not viewed as burdensome.

Grievance Policy

While private operators of assisted housing must provide tenants with an informal hearing within 10-days of notice of adverse action taken against the resident, public housing must offer a formal grievance hearing. The rules require that this hearing be conducted by someone who was not directly involved in initiating the disciplinary action. A PHA can appoint one person to handle these grievances or a panel. PHAs adopted quite different means of implementing this requirement, from assigning this responsibility to the director of property management to paying for an administrative law judge. While the costs were slightly higher in the more complex arrangements, GSD found that this requirement did not result in material costs. In fact, most agencies had only a few formal grievances a year, if any.

In the non-profit survey, none of the organizations had a formal grievance policy comparable to that required of PHAs, but all had written eviction procedures. In general, GSD found that in the non-profit survey evictions were rarely used as a means to address tenant problems and grievances occurred only occasionally.

Pets in Family Housing

While operators of both public and assisted housing must allow pets in elderly housing, only public housing must admit pets in family housing. Universally, PHAs found this regulation objectionable because it overruled local decision-making. That said, the cost impact (at least in the short term) was generally found to be inconsequential.

In adopting regulations to implement this legislative requirement, HUD has allowed PHAs wide latitude in adopting pet policies. In most of the agencies visited, the PHAs had established pet policies with height and weight limits and requiring pet deposits, inoculation, leash laws, and even monthly pet fees. These strict, yet reasonable, requirements appear to have the effect of limiting the number of families willing to register a pet to the more serious pet owners, who in turn might be expected to be more

responsible caretakers. In the case studies, GSD found that, typically, not more than one or two percent of the families actually registered pets.

Some PHAs did report significant concerns with illegal pets, but this problem existed before the on-set of the regulation – and continues today.

Rent Rules

Generally, residents of public and assisted housing pay 30% of their income for rent, with standardized definitions of what is treated as income for rent-calculation purposes across all HUD subsidized housing programs. As result of the 1998 QHWRA, however, there are four "special" rent provisions for public housing. The cost of implementing these four special provisions ranged from no discernable cost to minor.

- Imputed welfare income. Residents of public housing who lose their benefits under the Temporary Assistance to Needy Families (TANF) program because of failure to comply with program rules must have their rent calculated as if they continued to obtain those benefits, i.e., their welfare income gets "imputed." GSD found that only a small fraction of families met this requirement and the cost of implementing the rule was inconsequential. Just as with any source of income, the family must provide a verification evidencing the loss of welfare benefit.

- Minimum rents. Operators of assisted housing must impose a $25 minimum rent. In public housing, a PHA can adopt a minimum rent between $0 and $50; however, for any minimum rent above $0, PHAs must provide residents with a hardship exemption. Many of the PHAs studied avoided the need for a hardship exemption by imposing the $0 minimum rent. Others reported minimal implementation costs.

- Annual Choice in Rents. In public housing, residents have a choice of paying rent based on a percentage of income or a "flat rent" based on the market value of the unit. Those choosing the latter further have the choice of continuing to pay that flat rent and not have their incomes reexamined for three years. While some differences were noted in implementation, most agencies found this requirement to have no material cost impact. Given the option of paying a lower rent or not having to be recertified, apparently few residents will choose the latter. The setting of flat rents – based on the market value of the unit – is a new requirement for public housing but GSD does not believe that this task deserves any add-on since other operators of assisted housing must also know the market value of their units in order to establish rent increases, etc.

- Income disregards. Of the four "special" rent provisions, this one was the greatest source of anxiety. A PHA is required to disregard 100% of a family's earned income for 12 months, and 50% for 12 of the next working months, if the family was previously unemployed or receiving TANF benefits. This disregard applies for up to 48 months, during which the disregard can stop-and-start-and-stop again. Overall, a tiny number of residents qualified for this requirement. Some agencies

regarded the implementation costs to be inconsequential, and others found it quite burdensome. (Apart from any implementation costs, many agencies found the regulation objectionable in that it applied only to a certain class of residents – those previously unemployed or on TANF – and not applicable to working households who simply saw their earnings improve.)

As a whole, the burden of these "unique" public housing rent rules are at least offset by the requirement in assisted housing to conduct interim reexaminations whenever a resident's income increases by more than $40 per month. Managers of assisted housing report that this requirement adds significantly to the administrative demands at a property.

Section 3 of the Housing Act of 1968 (Section 3)

Section 3 requires that PHAs provide opportunities for low-income residents, and low-income businesses, in all agency hiring and contracting opportunities. (It was unclear, even after discussions with HUD staff, if and when Section 3 applies to operators of assisted housing; as a result, GSD assumed that it did not and that only PHAs had this requirement.) In the smaller and medium-sized agencies, with one exception, Section 3 was found to have no material impact on costs. Most PHAs routinely include announcements in newsletters and flyers to residents about agency and contractor hiring opportunities and require similar announcements in their general advertisements as well as in their bid documents. This practice serves to produce an ample flow of resident applications for jobs for which residents might reasonably be considered qualified. Most agencies surveyed had significant numbers or residents and former residents among their employees.

In the larger agencies surveyed, however, the implementation cost of Section 3 varied. First, there was much confusion regarding the applicability of Section 3, whether it represented a goal or a quota, and what types of reports and certifications were required of participating contractors. Second, some of the larger agencies had established formal Section 3 and MBE/WBE programs, which went well beyond the requirements of the HUD regulations, and which were mainly targeted to their capital programs. These local programs were typically staffed and therefore generated significant costs to implement, although, again, these staff costs were mostly borne by the capital budget.

The non-profits surveyed (with the exception those non-profits specializing in elderly/handicapped properties) also had resident hiring objectives deriving from their mission. They met their need by the low- or no-cost methods employed by the smaller PHAs surveyed.

HUD-Determined Maintenance Wage Rates

In accordance with Section 12(a) of the 1937 Housing Act, PHAs must pay not less than "HUD-determined" maintenance wages. There are no such wage requirements for operators of assisted housing. (Except for this Section 12(a) provision, HUD does not prescribe what PHAs should pay staff. Compensation levels are entirely a local choice.)

Potentially, this requirement could create added costs if PHAs were required to (1) pay wages that are higher than they normally would have paid (and that are higher than assisted operators) and (2) adopt burdensome monitoring practices to assure contractor compliance (in that these regulations also apply to when PHAs contract for routine and non-routine maintenance work). Like Section 3, this regulation could benefit from much needed clarification in that it is not uniformly understood and no final regulations or handbook instructions have ever been issued.

Overall, this regulation had no material cost impact in all but a few agencies: First, many of the agencies had collective bargaining agreements that HUD sanctions as the "prevailing wage"; in the remaining agencies, the PHA's wage rates were in each instance higher than the HUD-determined wage rates. Second, PHAs do little contracting for maintenance services out of the operating budget (which is the only budget considered in this study), preferring to do most such work in-house.

Procurement

Federal regulations require that "formal" purchase procedures be used for all purchases of $100,000 or greater, which implies public advertising. This requirement has virtually no impact on smaller and medium sized agencies, where there is typically no single procurement item in the operating budget that exceeds those levels. Even in the large agencies, the number of purchases that exceeded the small purchase limit was on the order of five or ten a year. It was only in Baltimore, the largest case study agency, where the number of purchases in the operating budget above $100,000 reached 34.

GSD did find a significant cost of procurement in some agencies, but it had to do with the cost of a centralized procurement system. The non-profits surveyed—some of them quite large—all used a procurement system typical of private operators, in which all but the largest items were handled at the property level on a direct purchase from local or approved vendors, without the need for a central warehouse or central tracking of purchases.

Waiting Lists

For years, PHAs were required to maintain central waiting lists. This has rightly been considered an administrative expense not borne by assisted housing operators. However, the 1998 QHWRA provided the freedom to adopt site-based waiting list systems. This new freedom, however, also required that PHAs adopt certain practices to assure furtherance of fair housing goals.[28] GSD attempted to identify the marginal cost of the special PHA requirements associated with moving to a site based waiting list system.

[28] These "special" requirements for administering a site-based waiting list include: (1) the PHA must provide all applicants with complete information about all sites, including location, number, size and type of units, amenities, etc., (2) the PHA must have a system for regular review to examine any changes in racial/ethnic make-up, and (3) at least every three years the PHA must use independent testers or some other method approved by HUD to ensure that applicants are not treated differently based on race/ethnicity and that no patterns or practices of discrimination exist.

In the case studies, GSD identified no cost from the site-based waiting list requirements because no agency had adopted a complete site-based waiting list system. For smaller agencies with small properties in small geographic areas, maintaining a central waiting list (typically, at the largest property) can be more economical. In larger agencies, where one would assume that a centralized waiting list would be burdensome, there remains significant reluctance to implement site-based waiting lists. Two of the larger agencies were or recently had been subject to consent decrees that arose from past practices related to racial concentration; these consent decrees either required the PHA to maintain some residue of a centralized system or served to increase their reluctance to initiate a site-based system. Others, who had no such history, offered the following reasons: perceived resistance or potential "strings" that would be placed upon them by HUD, concerns over ability to fill hard-to-lease developments if residents were offered real choices, and fear that properties would become racially identifiable (although many already were racially identifiable).[29]

Unit Inspections

While operators of federally assisted housing are required to conduct move-in and move-out inspections, there is no formal requirement to conduct annual unit inspections. In public housing, a PHA must conduct an annual unit inspection and this inspection must be done in accordance with the Uniform Physical Condition Standards (UPCS). PHAs must then prepare work orders for all items failing those unit inspections, the response times on which PHAs are graded upon under the Public Housing Assessment System (PHAS).

As with most operators of assisted housing, virtually all the PHAs studied indicated that conducting annual unit inspections was "good business", regardless of any formal requirement. Indeed, professional housing management training programs include instruction on annual unit inspections. One can assume, therefore, that the actual requirement to conduct a unit inspection is not something that causes a cost difference between public and privately assisted housing. The issue is whether the UPCS inspection imposes a lengthier, more burdensome inspection requirement than routinely performed as "good practice."

The experience of the case study agencies was split – about half reported that the UPCS inspection requirement did not result in any real additional cost to the agency and another half reported that these inspections resulted in an extra 15-45 minutes per inspection, with modest additional follow-up costs in preparing the work orders. In the cases where PHAs reported modest additional costs, those costs were estimated at around $0.43 PUM to $1.00 PUM.

Since the adoption of PHAS and the requirement for UPCS-based inspections, a number of private contractors have offered to provide these inspection services for PHAs. These

[29] Following the case studies, GSD held discussions with a large agency in the Midwest that has implemented site based waiting lists (there is no centralized application intake or referral process) and that reports no additional costs associated with maintaining this system.

contractors will perform the annual unit inspection, prepare the inspection reports, and provide a computer tape/file with all the necessary summary reports and required work orders. These contract services are generally provided for under $1 PUM.

It should be noted that a number of PHAs have, since adoption of PHAS, created centralized inspection and inspection-related repair departments. These organizational arrangements have grown out of concern for both the uniform application of the UPCS standards and the desire to improve their physical REAC inspection score. One PHA's centralized inspection/inspection repair department had a direct cost of more than $24 PUM. GSD did not find it appropriate to include the cost of these centralized inspection arrangements. Centralizing unit inspections is an organizational choice, not a federal requirement. Further, the desire on the part of an agency to achieve a higher PHAS score is admirable, but not something that should be federally reimbursed.

Public Housing Assessment System

HUD grades the operational performance of PHAs in accordance with the Public Housing Assessment System (PHAS). These assessments are conducted by HUD's Real Estate Assessment Center (REAC), which also oversees FHA assisted housing. There are four components to PHAS: an annual Physical Inspection (conducted by REAC), a Resident Satisfaction Survey (also conducted by REAC), Management Operations, and Financial.

- Physical Condition Indicator. Both public and assisted housing are inspected by REAC using the same protocol, but there are some subtle differences in implementation, including: (1) the scoring of inspections for public housing (of late) include only Units and Systems whereas the inspections for assisted housing also include Common Areas, Site, and Building Exterior; (2) beginning in November 2002, assisted properties scoring below 60 get referred to the Departmental Enforcement Center (DEC), whereas previously only assisted properties scoring below 30 were referred to DEC (and other low-scoring properties were referred to the field offices); (3) assisted properties have 60 days to correct Exigent Health and Safety deficiencies, after which a new inspection is ordered, a requirement not now present in public housing; and (4) the inspection frequencies are slightly different. GSD has treated this REAC inspection requirement to be essentially the same. It should be noted, however, that many of the PHAs studied went to great lengths to prepare for these annual physical reviews in order to improve their scores. GSD does not regard these preparation costs as something that should be factored into the analysis since assisted housing operators operate under the same inspection system.

- Financial Condition Indicator. PHAs must submit a year-end "Financial Data Schedule" that shows the financial position for each program the PHA administers. This report is submitted electronically, from which REAC analyzes certain financial ratios and assigns to each PHA a score. While, prior to PHAS, PHAs had never before been required to submit an agency-wide financial report, the information contained on the FDS is simply the summation of the year-end financial status of each program. Assisted operators (including non-profits) also

have to submit a year-end financial report, but it is an individual report on each property (in a variety of subsidy programs), which probably costs the same or more than the one agency-wide filing PHAs are required to do under PHAS.

All agencies reported initial costs in converting their financial reporting systems to accommodate the format of the FDS. Presently, though, only a small number of agencies reported anything more than quite modest efforts to prepare the necessary FDS annually. In the initial years, PHAs reported extensive problems in filing their electronic reports. No PHA reported any transmission problems at the current time.

It is worth noting that there was great dismay over how REAC assigns a PHA a particular score under the financial indicator and the weights and measures used. While these concerns may be valid, they are not an item of cost. Also, similar concerns regarding the review of financial data exists in other assisted housing programs.

A final factor in reporting these costs is the relatively high cost of information technology (IT) systems in PHAs generally. With a high cost IT system, the marginal cost of producing financial and management information goes up accordingly. IT costs are discussed more fully in the next chapter.

- Management Operations Indicator. PHAs are measured on six sub-indicators: turnaround time, Capital Fund obligation and expenditure rates as well as physical condition of the work, work order response times, the annual inspection of units and systems, and security and economic self-sufficiency[30]. Most agencies indicated that these sub-indicators were essentially the same ones that they would otherwise use to monitor/measure internal performance or required little extra effort to compile (the security and economic self-sufficiency measures are particularly unobtrusive). While the process involved in reporting these measures to HUD is slightly more formal than internal good management practices found in the assisted housing world, the average reported cost of PHAS in total, including Financial, Management Operations and the Resident Survey, was generally under $1.00 PUM.

- Resident Service and Satisfaction Indicator. REAC conducts an annual survey of residents at each PHA. This survey is conducted by an independent contractor at no cost to the PHA. PHAs are required to provide notice to residents to facilitate response to this survey. While there is some cost noted for this task, cost is minimal. What is not a minimal cost, in some agencies, are the efforts some agencies extend to improve the resident survey scores. For example, a number of agencies report that they conduct pre-survey meetings "to obtain higher response

[30] The economic self-sufficiency sub-indicator only tracks economic self-sufficiency programs for which an agency receives separate HUD funding and does not obligate the PHA to spend monies on programs for which it does not receive funds.

rates." GSD has noted these extra costs but generally does not view them as a federal responsibility.[31]

Annual Plan

The cost of preparing the Annual Plan, like some elements of the PHAS, falls disproportionately on smaller agencies because the task is essentially the same regardless of the size of the portfolio. In addition, some agencies "made more" of the process than others. All the agencies surveyed felt that the benefit of the Annual Plan preparation was limited and that the form prescribed by HUD did not lend itself to either effective public communication or internal strategic planning. That said, some attempted to make it a broader planning exercise, either internally or as a means to communicate with residents. Consequently, costs attributed to this varied and GSD attempted to weight how much was strictly a HUD compliance cost vs. agency choice. Costs associated with the Annual Plan, making an allowance for strategic planning that otherwise would be performed, and excluding, to the extent practical, costs associated with the Capital Fund and Section 8 elements of the Annual Plan, were typically under $1 PUM, with one outlier at $8.55 PUM.

Resident Participation Requirements

Public housing has slightly more formal requirements regarding tenant participation. PHAs must consult with residents in preparing their Annual Plan and in making changes to certain agency policies (which are then often changed in the course of the year and require an amendment to the Plan). PHAs must also have one member of their board who is a resident, and is generally (with exceptions) elected. Taken by themselves, these requirements are not cause for any significant additional cost. Regarding the Annual Plan, the rules require only consultation and do not provide residents with decision-making authority. With regard to board participation, non-profit operators of assisted housing typically include low income representatives on their boards and may include tenants (although in most cases these representatives are not elected).

The more expensive resident participation costs GSD found among PHAs in the case studies had to do with the practice of organizing and supporting the continued operation of resident councils. HUD regulations set forth the conditions under which a PHA must recognize a resident council (or councils), provide safeguards to those councils and detail the responsibilities the PHA must undertake to insure free elections. For this HUD has recently adopted a rule that permits PHAs to apply for an additional $25 PUY (per unit per year) for both the PHA oversight costs and for direct support to resident councils. Nevertheless, among the PHAs surveyed, a significant number spent considerable staff time, and often had central office units devoted to, the creation and sustaining of active resident councils. GSD considered this a local choice and did not include such costs in the regulatory score-sheet; however, it is noteworthy that, among the non-profits surveyed, all placed a high value on resident satisfaction, most had a property

[31] REAC conducted two pilot resident surveys of assisted housing in 2001 and 2002, reaching about 112,000 units each year. It is not certain whether this pilot will be expanded.

management philosophy that valued resident organization, but none had a practice of organizing and sustaining organized, elected resident bodies. Instead, the non-profits relied on informal means to engage residents at the property level, with a considerable degree of success. More than one non-profit director or property manager said they had tried elected, formal organizations in the past and found them to be counter productive, driving away the well-motivated and reliable residents.

An issue here is whether the goal of HUD is to effect well-run public housing or to organize and sustain resident councils. As indicated previously, good quality housing is often synonymous with effective resident participation. But effective resident participation can take many forms and be achieved in many different ways. HUD should not, it seems, dictate or direct how to achieve that desired state, which it influences by establishing uniform by-laws for resident councils wishing to receive agency funding. Rather, the focus should be placed on performance and PHAs should be left free to seek solutions that best meet their needs.

A final note is that PHA staff support for resident participation systems tends to overlap, organizationally, with the oversight and provision of social services. This cost element is discussed in the next chapter.

Young-Disabled in Elderly Buildings

PHAs are required, except when they receive special designation, to admit applicants who qualify as disabled but who are not 62 years of age or older ("young-disabled"). This requirement is somewhat different in assisted housing, where properties are divided into, essentially, two groups.[32] In the first group (so-called Section 651 properties), the owner can elect to have a preference for elderly over young-disabled and can limit the percentage of young-disabled households to the lesser of 10% of the units or the actual percentage that existed in 1992. Another group (so-called Section 658 properties) can fully restrict admission to the young-disabled. The first group includes mostly the "newer" assisted housing properties and the second group mostly includes the "older" assisted housing properties, but also Section 202 Housing for the Elderly.

HUD's notice allowing PHAs to apply to designate elderly buildings as senior-only is not restrictive and, indeed, states that "the above requirements…must be read in the context of the Congressional intent to streamline the designation process and to provide limited HUD review."[33]

Among the case study agencies, one did not have any elderly units. Of the remaining nine, only three had actually applied for senior-only designation. Of the nine that had elderly properties, three indicated that there were no or minimal additional costs of serving mixed-populations in their communities, three reported moderate additional costs, and three reported that the costs were significant.

[32] These requirements can be found in Title VI (d) of the Housing and Community Development Act of 1992.
[33] PIH Notice 97-12, March 12, 1997.

In Baltimore, for example, the agency's reported costs of serving these mixed-population buildings, as opposed to senior-only buildings, was estimated at more than $30 PUM per elderly building, although the largest source of that cost was security and it was difficult to determine if the agency would indeed reduce those security costs if it served just a senior-only population. The agency also had not applied for senior-only designation.

In the course of its field testing, GSD encountered several examples where a property with high percentages of young-disabled appeared to have significantly higher costs (see Jefferson Square in Memphis). In these cases, the properties were more like assisted living or "shelter plus care" facilities than independent living. Separating management costs from service costs is difficult when the population mix reaches the level normally funded through special needs housing and it is outside this attempt to calculate these costs. (See further discussion of service costs in the next chapter.)

Several case study agencies also either did not apply for senior-only designation, or that received senior-only designation but then changed back to mixed-population, because of leasing and marketing concerns. At these PHAs, the PHA felt that the only way to fill a particular building would be to serve the young-disabled, either because of a soft rental market or other physical limitations with the property (say, apartment sizes that were substantially smaller than market norms). In these circumstances, it does not appear that it is the "regulation" that is driving costs but market non-competitiveness. These properties either need to be restructured or converted to some form of assisted-living.

In all, it seems that PHAs should apply for designation if they desire to serve seniors-only, as is permitted by regulation. However, there are certain buildings that, because of past history of regulations, have populations that are service-needy and should be eligible for additional funding if the PHA chooses to apply for those funds and serve that population. It would further seem that, presented in that manner, the number of properties would be limited and that the differences between public and assisted housing would be much the same. Hopefully, this process would require more deliberate decisions regarding properties that are not competitive in the market.

COMMENT

It is commonly believed that the regulatory environment between public and assisted housing is quite different.[34] Particularly since the passage of the 1998 QHWRA, that is less the case. Both programs have the same, or essentially the same, eligibility rules, admissions preferences, rent formulas, lease, etc. There are some specific regulatory differences, but both their number and cost impact is not large. Much more significant, in terms of costs, is the local operating environment, taken up in the next chapter.

[34] Inarguably, public housing often "feels" much different to private operators of public housing than the differences in regulations would dictate. GSD surmises that there may be two factors at work here. First, the method of funding and the types of financial reporting are quite different from conventional real estate. Second, as described more fully in the next chapter, locally (and, at times, nationally) public housing is perceived less as a "real estate" enterprise as much as it is perceived as a "social services" program.

While there are not a lot of regulatory differences that are mandatory, there are many more activities that PHAs have been "encouraged" by HUD to undertake and that could lead them to higher spending, especially in the area of resident programs and self-sufficiency. Action by HUD to clarify that the first responsibility of PHAs is the care of the real estate would help in this regard.

It should also be noted that the focus of this study is on the "operations" of public housing and does not consider concerns that PHAs may have with regulations governing the administration of the Capital Fund or the Section 8 program. To the extent that those programs have burdensome regulations – and GSD makes no opinion on that matter – those related costs should not be hitting the operating budget.

Virtually all of the case study agencies made note of the added burden of electronic reporting requirements. Essentially, there are three areas where PHAs must submit data electronically to HUD: the year-end PHAS report, the Annual Plan, and resident recertification data, which is known as PIC in public housing and TRACS in assisted housing. While many complained about submission problems relating to PHAS and the Annual Plan in the initial year or two, few reported problems of late. (Most offered advice not to submit at the last minute, where there is more usage and, hence, the system is slower.) As for PIC, HUD has had a problem with this system, which has had repeated "bad patches" and been down frequently. A new version of the system has been up and running for about the past 10-12 months and, except for one brief period, appears to be working fine. GSD assumes that HUD has, or will, fix the problems of PIC. It should be further noted that the actual task of submitting PIC data is not a complicated one. It does not require large, complex IT systems. The concern of the PHAs is simply the transmission problems at HUD's end.

While the overall findings are that the regulatory differences are not great between public and assisted housing, there are a number of regulations that could and should be simplified and/or clarified. Appendix H makes recommendations to that effect.

CHAPTER 4
The Public Housing Operating Environment

In considering how to apply the cost model to public housing, GSD reasoned that public housing should be treated as non-profit in terms of ownership type. PHAs and non-profits are governed by community or local boards, have broader missions, are more public in their business relationships, are likely to be more inclusive in their business relationships with residents and in the provision of services, and do not have the same bottom-line focus as for-profit owners.

Still, many public housing industry representatives have argued that PHAs face even greater local pressures and constraints, and are shaped by even greater expectations, than the "typical" non-profit (referred throughout as public housing's operating environment) and, therefore, should an adjustment beyond the statistical applied 10% differential between non-profits and for-profits. Ten specific areas of concern included:

- Employee compensation,
- Organization and work rules,
- Resident programs,
- Information technology,
- Security,
- Population housed,
- Legal,
- Local mandates,
- Responsiveness, and
- Other public entity costs.

GSD used the case study process to better understand the local context under which PHAs operate and, ultimately, to evaluate the appropriateness of the decision rule assigning to public housing the non-profit ownership status under the model. GSD did not, however, attempt to capture costs in the same detailed fashion as was done for the differences in regulations. One would not expect, for example, PHAs or non-profits to maintain accounting records showing the precise cost of work rules or "public responsiveness." Indeed, there may be a compounding effect (resulting from multiple factors) that may be hard to isolate. The case studies were an opportunity for the agencies to comment on where they felt they experienced unique costs (the source), the magnitude of those costs, and the extent to which they felt that they had no control over those costs.

OBSERVATIONS

Summarized below are GSD's observations from the case study research and the non-profit survey with respect to public housing's local operating environment, by the ten topical areas.

Employee Compensation

For each of the case study agencies, GSD contacted at least one respected for-profit operator of assisted housing in the local market to compare the PHA's wage and benefit levels with prevailing practice for what would be considered on-site management and maintenance personnel.[35] GSD also included employee benefits in its non-profit survey.[36] Several caveats pertain: Even within the same company, wages at the property level can vary for a number of reasons, including the size/complexity of the property and longevity in the job. Also, this survey was admittedly based on a small sample (of both PHAs and private operators).

With the above limitations noted, the data gathered revealed that five of the ten agencies paid wages that were roughly comparable to prevailing practices, one agency paid wages that were modestly higher than the market, and four paid wages that were substantially higher than the market (at least 15-20% higher). However, salary rates do not take into consideration job responsibilities (higher for property managers in the non profit and for profit sector) or the amount of leave time or length of workday, which were also generally more beneficial in the PHAs.

While wages were closer to the market in most agencies, benefit levels were often substantially higher. For the purposes here, employee benefits include payroll taxes, state/federal unemployment insurance, health insurance, retirement, and disability insurance, but not workers compensation.[37] For the private operators, employee benefits, as a percentage of total labor costs, were generally in the 22-28% range. For the ten case study agencies, employee benefits were generally in the 28-38% range. In other words, the upper end of the private operators intersected with the lower range of the public sector. Payroll taxes and unemployment insurance cost about 10% of payroll and are more-or-less the same for all entities.

The higher employee benefit costs paid by PHAs can be attributed to the following:

- PHAs tend to pay all, or a greater share of, health benefit plans.
- The health benefit plans are often more generous.

[35] These positions were typically classified as the housing manager, assistant housing manager, and clerk, as well as the maintenance supervisor, technician/mechanic, and laborer/janitor. In some PHAs, these positions were provided centrally. GSD did not attempt to compare wages/benefits for skilled tradespersons because private operators infrequently employ such personnel, relying instead on contractual services when needed. Further, GSD did not attempt to compare compensation levels for supervisory/corporate staff, in part because of the increasing complexity of such an analysis and in part because it would be harder to line up comparable job classifications.

[36] GSD did not ask the non-profits for wage information for the reason that they might be less knowledgeable about general market conditions, particularly if they were a smaller operator.

[37] While some may not consider payroll taxes and unemployment insurance a "benefit", these amounts are often lumped together with more traditional benefits (retirement, health, disability) on summary financial statements and, therefore, their inclusion allowed for ease of comparison.

- PHAs pay higher retirement benefits. In for-profit assisted housing, it would be common for a firm to offer 401 (k) benefits to employees, sometimes with a match up to 3% of salary and sometimes without a match. In public housing, it would be more common for the PHA to contribute in the range of 7% of salary for all permanent employees, although there were some agencies that paid upwards of 17%.

- Employee participation rates in the private sector are lower for health and retirement programs. In the private sector, where an employee must contribute a significant share of the monthly health premium, employee participation levels are much lower. The same is true for participation in retirement plans.

In some cases, PHAs were required to offer certain benefits because they were either part of a state/local public retirement/benefit system or because of special state legislation affecting public housing.

As part of its non-profit survey, GSD found that benefit levels for non-profits were frequently higher than the for-profits but still less than the PHAs, mostly in the area of retirement benefits; however, it should also be noted that three of the eight non-profits surveyed used for-profit property management companies, so their wage and fringe rates were in the range found in the for profit property management sector.

The fiscal impact from public housing's higher fringe benefits, over and above the FHA non-profit benchmark, might be on the order of $3-$9 PUM for a typical property, or around 1-3% of the non-utility budget. This estimate is based on the following assumptions: an average PHA fringe load of 34%, an average non-profit fringe load of 30%, and average payroll costs of around 25-33% of non-utility operating expenses (as demonstrated through the field testing). The impact on PHAs with much higher fringe benefits would obviously be greater.

Federal regulations do not prescribe any compensation rates (wages or fringes) above the Section 12(a) maintenance wage rate minimums that were found to have no cost impact in the PHA case studies. (As a reminder, GSD found that in all cases either the wages/benefits that the PHA established were higher than the HUD-determined rates or that HUD had sanctioned the PHA's collectively-bargained rates as the official HUD-determined rates.) All of the agencies indicated that they frequently surveyed, and tried to remain competitive with, local government practice with respect to employee compensation. A few indicated that they tried to remain slightly below local government levels. Only one agency indicated that it also tried to remain competitive with wages in the private apartment sector. For the most part, the agencies felt that, as public entities, they could not be expected to match private market levels. GSD does not feel that even when state and local practices (either by custom or by statute) result in higher than private operator levels of wages and benefits that that is necessarily a cost to be included in a federal operating formula. Even when local or state benefit packages are mandated, PHAs are free to compete with lower wages to offset the higher benefits.

Organization and Work rules

Except in the smaller agencies, where there is less "organization" overall, GSD observed, relative to private operators of assisted, that PHAs:

- Have more complicated organizations and more complicated work rules,
- Are more process-driven,
- Organize around compliance and control, and
- Are less focused on the real estate.

The most often-cited reason why PHAs chose these more process-oriented, centralized arrangements was concern over "control" and the possible damage to an agency's image as a result of employee error or fraud. Some agencies were attempting to "decentralize" their operations, although progress appeared minor. Only one of the larger agencies had a fairly evolved site-based management system.

Not surprisingly, central administrative costs for the agencies studied were quite high relative to their private sector counterparts. Indeed, several agencies had contracted with private management companies (either for public housing or non-public housing) for some of their assets and, in those circumstances, the agencies' centralized administrative costs were at least two or three times higher than the management fees charged by the private firms.

Few agencies felt that, as public entities, they could institute the same kinds of property-based management systems found in assisted housing.

Resident Programs

The provision for resident programs is often cited by public housing representatives as one of the significant cost differences between public and assisted housing. As noted in the previous chapter, at a staffing level, the oversight and coordination of resident programs often overlaps with the management of resident participation systems. This is so in the non-profits surveyed as well. In the case study sample, the amount and type of resident programs provided (and paid for out of operating funds) varied widely from almost nothing to as much as $34 PUM, although seven of the ten agencies had expenditures of less than $4.50 PUM. Nationally, PHAs spend an average of about $8 PUM on tenant services expenses in the operating budget.

All of the PHAs agreed that spending anything from operations was a local choice not a Federal mandate but felt that some level of services are often needed to ensure good management and a good living environment. GSD agrees. The survey of the non-profits is illuminating. Among the eight non-profits surveyed (see Appendix C), six had significant missions to provide services beyond housing, with the range of services provided as great as within any PHA. However, only a limited amount of operating

funds was spent in any organization in the survey.[38] The non-profit with the greatest amount of services funded out of operations spent $10 PUM, but this amount represented only 1/6 of the cost of the services provided by that agency, with the rest funded through other sources. Other non-profits in the survey (including the one noted above) had a variety of ways to fund services, from seeking and getting contributed services, to fundraising, grantsmanship, internal support from other cost centers, allocation of profits, etc.

GSD concludes from this research that, while services are important, funding significant amounts from the operating formula is neither appropriate nor wise. In a very real sense, for very low income populations, service needs are limitless. The only way to cap costs to operations is to make some judgment in the formula of the amount allotted to fund services and then leave it to the local operator to figure out what additional is necessary and how to provide it. Unfortunately, GSD cannot determine the amount that FHA operators incur in resident programs. There is no line item in the FHA chart of accounts similar to that found in public housing. Even if there were, it is common for some housing management staff to also assist with programs, making it difficult to isolate true "service" or "program" costs. However, GSD can be clear that the FHA benchmark includes the average response of operators of assisted housing in providing services/programs.

Information Technology

GSD prepared a survey for each of the case study agencies to complete that itemized their IT costs, both capital and routine, and showed how those costs were spread (allocated) across different housing programs. GSD also polled several private operators of assisted housing to determine their IT spending practices. Based on these surveys and interviews, GSD finds that, relative to private operators of assisted housing, PHAs have (1) much more elaborate IT systems and (2) much higher IT costs. When comparing the IT systems of PHAs to those found in the management companies of assisted housing, GSD found that PHA systems are generally bigger, more complicated, and require more manpower to support. In contrast, assisted housing systems are more simple and require little, if any, support or maintenance. While PHAs allocate a large percentage of their funding to the implementation of complex computer systems to achieve what they described as "maximum connectivity, reliability, and speed", the world of assisted housing simplifies their operations to reduce or eliminate the need for such complex systems.

GSD's surveys would lead one to conclude that private operators might incur somewhat less than $1.50-$3.00 PUM in on-going central IT costs whereas PHAs frequently spend upwards of $8-$10 PUM or higher.

The PHAs often cited two reasons for their higher IT spending: first, that these higher costs were related to the more extensive public housing reporting requirements and,

[38] The field testers (see Chapter 5) tended to include more on service coordination than found in the non-profit survey.

second, that PHAs needed more elaborate systems in order to be more "responsive" to the public.

Table 4.1 compares major operational functions in public and assisted housing that are IT-sensitive and the degree to which those functions are affected by public housing-specific regulations. As the table makes clear, there are few areas where automation is actually required by HUD. Any property management organization, for example, needs to be able to track the status of its units or its rent collection activity. Depending on the size of the property or organization, these tasks can be handled manually or by simple spreadsheet programs. As any organization grows in size, there are benefits to automation. Hence, a property management organization of 500 units is likely to have an automated system to track rent collections rather than a peg-board system. That said, while HUD may require the PHA to report rent collection statistics in a slightly different manner than in private housing, virtually any software package in assisted housing that handles rent collections could also produce the required statistic for public housing. The same can be said for financial management systems, which is the largest part of any property management software. There is nothing so unique about public housing financial reporting that requires PHAs to spend two to four times as much as a typical private operator of assisted housing. Standardized property management software packages would require only modest modifications to reflect the public housing chart of accounts.

Table 4.1: IT Functional Areas influenced by Unique Public Housing Requirements

Area	Extent to which Influenced by Unique Public Housing Requirements	Comment
1. Rent Collection Systems	Minor	All property management organizations need systems for tracking rent collections. PHAs are required to report ratios in somewhat unique fashion, but software programs available to private operators can easily be modified to provide these statistics.
2. Vacancy Tracking	Minor	Ditto.
3. Waiting List	Minor	Eligibility and preference systems are the same. Requirements can be more extensive if PHAs maintain centralized waiting lists.
4. Financial Management and Reporting (budget, general ledger, accounts payable, inventory, payroll, etc.)	Minor	Chart of accounts only slightly different in public and assisted housing. PHAs must submit year-end Financial Data Schedule, but virtually any financial software package is sufficient.
5. Tenant Recertifications	Minor	Tenants in both public and assisted housing must be recertified annually (using the HUD-Form 50058 for public housing and 50059 for assisted housing). The process and calculations are substantially the same. The results from these recertifications must then be electronically submitted to HUD. The process for electronic submission, PIC for public housing and TRACS for assisted housing, are also essentially the same, although the PIC system has had greater transmission problems in the past several years.
6. General Office Networks (LANs, WANs, etc).	None	There is nothing uniquely regulatory that would effect how a PHA configures its office networks. However, it should be noted that PHAs tended to have much more expensive network arrangements, particularly between site offices and the central office, than private operators.
7. Personnel/Payroll	None	There is nothing uniquely regulatory that would effect a PHA's personnel/payroll systems.
8. Work Orders	Modest	There are many work order software programs for conventional operators. Minor modifications would be necessary to report statistics according to PHAS requirements. The "extra" burden is not in the form of the software system, per se, but in the fact that PHAs may be expected to generate more formal work orders through their inspections.
9. Annual Unit Inspections	Minor	PHAs must report on the number of unit inspections completed. Such reporting can be done on standard electronic spreadsheet programs.
10. Resident Services	None	As part of PHAS, PHAs must report on progress in meeting certain grant-funded goals. There is no IT requirement involved.
11. Security	None	As part of PHAS, PHAs must demonstrate that they track crime. Most PHAs do this through simple spreadsheet applications.
12. Annual Plan	Minor	PHAs are required to submit through the internet their Annual Plan template. This submission places no burden in terms of type of IT systems required of a PHA.
13. REAC Submission	Minor	Ditto.

While PHAs must submit electronically an Annual Plan (there is no comparable requirement in assisted housing), this document itself requires no IT system to speak of and can be filed, essentially, from any modem. The same is true for the annual PHAS report. The PHAS report is merely a roll-up of agency-wide data and requires only access to a modem.

The only two areas where higher IT spending can be directly attributed to unique public housing regulations are annual recertifications and work orders. With respect to recertifications, PHAs must electronically submit this data to HUD each month. For the past two years, HUD has been upgrading its "PIC" system that receives these transmissions, and that system has been plagued with problems. In the past, PIC was known for suffering from frequent down-time and slow response. In addition, the database was difficult to query and the user interface was not user friendly. Users often reported that connectivity was inconsistent and not fully secured. Most of these problems have been addressed by HUD, which has improved site availability and response times. PIC coaches are more familiar with the system and better able to help. HUD has also improved the user interface and increased the transmission window. For the past 10-12 months, PHA confidence in the accuracy of the data has grown. Although the implementation has not been smooth, the system seems to be stable.

With respect to work orders, PHAs are required, because of PHAS, to inspect each unit annually under UPCS. They are also required to track work orders received/generated from their own inspections (not required in assisted housing). Still, work order systems are relatively inexpensive software modules and should not be the cause of the higher IT spending observed by PHAs.[39]

The higher IT spending in public housing appears to be much more a factor of more complex organizational structures and the reluctance on the part of PHAs to delegate responsibility and authority to site-based personnel. A large PHA, for example, that chooses to maintain a central work order system, a central maintenance department, a central warehouse, and a central purchasing department would add enormously to the demand for IT. Consider just the matter of central purchasing. The site manager must create a "purchase requisition", or PR, whenever in need of a certain service. That PR then must be authorized by various levels in the organization – not just the regional supervisor, but also frequently the "budget office." When the PR is finally approved, an assigned buyer in the purchasing department will place the order and convert the PR into a "purchase order", or PO. After providing the service, the vendor typically sends the accounting department an invoice, which then must be sent to the site for verification and for copy of the receiving ticket before payment can be made. Contrast this elaborate process with a traditional site-based management system. In the case of the latter, when a property needs a specific good or service, the site manager gets three or more quotes (oral or written, depending on the amount of the purchase) from different vendors, selects the most responsive bid, issues a PO directly with the vendor, and sends the paperwork to accounting for payment after the service has been delivered and an invoice received.

One can easily imagine the elaborate systems required to track central maintenance or a central warehousing functions. (In private housing, there is almost never a central warehouse because the goods/services are delivered directly to the site.)

[39] A solution to this "difference" would be to eliminate the requirement of PHA reporting of work order response times and allow the REAC inspections to predominate, as is the case in assisted housing. See Appendix H.

Population Housed

Many public housing industry representatives have argued that FHA assisted housing is an inappropriate benchmark because the resident population in public housing is substantially more disadvantaged than found in assisted housing, resulting in higher costs. HUD's demographic statistics that compare public and assisted housing do not support this notion. The income levels in public housing are substantially the same as the income levels in assisted housing. The eligibility rules are also the same.

None of the case study agencies reported adopting admission practices that would result in the admission of residents that would be in any way more disadvantaged than other operators of assisted housing (other than in the situation where an agency chose not to apply for senior-only designation). In fact, most of the agencies were attempting to achieve, through admissions preferences, a greater mix of incomes in public housing. Also, no agency indicated that they had adopted lower standards of behavior. Some, in fact, were very proud of their quite strict admissions practices.

While not articulated or observed from the case study agencies, some other public housing groups have suggested that, as public entities, PHAs may be under pressure to admit more families that might not otherwise meet their screening criteria. If that were, indeed, the case, it would not seem like an appropriate cause for additional federal reimbursement.

The above said, two agencies felt quite strongly that they served a resident profile that was substantially more disadvantaged than other local operators of assisted housing. GSD did not have the means to substantiate/repudiate this claim.

Security Costs

Like the information gathered on services, security costs in the case studies varied from none to considerable. This is consistent with what is found in the FHA database. Some locations and some types of properties require security (in some measure) and this is reflected in the cost structure that is incorporated within the FHA benchmark. Some of the studied agencies seemed to have security costs that were above what would be typical within the FHA database for similar types of properties in similar locations. Some, but not all, of the larger agencies tended to have centralized security arrangements, which GSD deemed to be less cost-effective than security systems that were property-based.

Legal Costs

It is frequently presented that PHAs have much higher legal costs than private operators of assisted housing, a function, purportedly, of the fact that PHAs are more inviting targets or are perceived differently in the court system.

For the majority of the agencies studied, legal costs were not noticeably higher than what one would expect among private operators of assisted housing. Most indicated that

evicting low-income residents was often a difficult process (less so for non-payment of rent; more so for other causes), but such is often the case in assisted housing.

A few agencies had in-house legal staff, which would be unusual in assisted housing (those services are typically contracted out).

Local mandates

While lots of discussion was devoted to local mandates when GSD was developing the protocol for the case studies with interest groups, GSD found no examples of significant local mandates in the case studies other than the issue of locally-mandated fringe benefits (see above under Employee Compensation) or wage rates (uniquely Massachusetts).

Two mandates that were found, but had no significant cost impact, were: a state law requiring formal purchasing for items over $25,000 and a state law requiring admissions preference for veterans.

GSD finds that it is impossible to cost this item with any precision but thinks the overall impact is small (though perhaps larger in individual cases.)

Responsiveness

Many agencies felt that they had to be more "responsive" than private operators, dictating higher levels of service or greater processes. Often, response to this line of questioning was in defensive terms—that the city council or the PHA commission demanded certain things in terms of information or quick response, and that expensive administrative systems were necessary to insure compliance. GSD field researchers did not find this argument convincing. Like the question of spending money to insure high scores from HUD, expensive but superficial quick fixes in lieu of system-wide improvement in operations quality would seem a poor federal investment. Indeed, GSD believes that typical PHA organizational patterns have the result of reduced responsiveness (see discussion under Organization and Work Rules).

Other Public Entity Costs

In part because this was such an amorphous category, GSD's questioning elicited little in the way of response from most agencies. Some agencies saw little or no difference with non-profit operators and saw that, just as private operators might spend a portion of their time doing "public service" as "good business", so too did the PHA have extra-curricular tasks/responsibilities.

In other agencies, there appears to be a huge public entity cost, reflected in much higher overhead and extremely sluggish organizations but little evidence of any particular "cause" of such organizational inefficiency.

Few agencies reported any significant additional cost (beyond what a non-profit would incur) as a result of "board processes." Most had monthly meetings, which lasted not

more than two hours. A small number of agencies, however, reported either extensive board processes, particularly in the area of procurement, or the need to publicly advertise for board meetings. In the area of procurement, there is no federal requirement that Boards approve any procurement notices or awards; those functions can (and, in GSD's view, should) be delegated to agency staff, which is the norm for non-profit boards. Nor is there any federal requirement for formal advertisement of board meetings.

RECOMMENDATION

GSD does not recommend any additional add-on beyond the application of the non-profit designation for purposes of formula benchmarking for either regulations or local operating environment. GSD believes that the decision to apply non-profit cost structure serves as a reasonable proxy for public housing's marginal additional regulatory burden and its differing local operating environment. Factors that contribute to this finding/recommendation include:

- The overall impact of the "unique" regulations was generally on the order of 1-2% of the non-utility budget; however, operators of assisted housing also had "unique" requirements that may substantially erase that differential, particularly the requirement for property-specific audits.[40] Also, it appears that the non-profit differential might include certain mission tasks that, while less formal, closely match some of public housing's unique regulations, such as tenant participation, grievances, resident hiring, etc.

- Local operating conditions and costs (beyond the real estate costs covered in the model) are uneven. There is no universal adjustment that could be applied in all or most cases. In some communities, the local operating environment resulted in significant additional costs and in other cases it appeared to add next to nothing.

- Many of the items that industry representatives would like to see included as an add-on for the local operating environment cannot be precisely captured and, hence, could not easily be factored into a formula.

- Providing an add-on for each-and-every local mandate would eliminate any incentive for localities to place the burden for payment on the level of government creating the mandate.

- Many of these locally-induced costs are often presented as if the PHA had no control over them. GSD does not believe that to be the case. PHAs can, for example, overcome their reluctance to establish strong property-based management systems (standard industry practice in assisted housing) or they can

[40] In 2000, the median "audit" expense in the FHA database was $6 PUM and the average was $8 PUM, which compares with the average public housing audit expenses of just under $2 PUM. Hence, this differential alone substantially offsets the "unique" regulatory costs of public housing.

also contract for property management services from firms that have better cost structures.

- Many PHAs feel that they are "stuck" with collective bargaining or locally-mandated benefit structures. To the extent that PHAs are paying higher than market benefits, they should look to reconcile their pay levels so that their overall compensation package is consistent with local practice. Or, they may choose to pay higher wages/benefits if they feel that it results in higher productivity.

While GSD does not believe that any additional add-on (beyond the 10% adjustment in the model treating public housing as non-profit) is appropriate, many of the local operating environment conditions can complicate and add to the task of delivering well-run public housing. GSD further believes that the current operating funding system, which funds public housing organizations and not public housing properties, makes it easier for interest groups of all types to make claims on the organization for funding and special status. For these reasons, it would be beneficial if HUD were to:

- Move more in the direction of project-based budgeting, management, and even funding of public housing.

- Make clear that the primary mission of public housing is property/asset management. The signals that HUD sends are important. While not formally required, HUD has encouraged PHAs to venture far outside the field of property management to areas of resident training, economic development, and other non-traditional real estate management ventures. These encouragements have emboldened interest groups to redirect scarce resources away from the primary task of property management.

- Give greater focus to the performance of the assets and not to the PHA as an organization in its monitoring systems of public housing.

These latter themes are taken up in more detail in Chapter 7.

CHAPTER 5
Field Testing

As a way of evaluating the reasonableness of the model's estimates for public housing, GSD conducted two forms of "field testing."[41]

- One, GSD compared predicted amounts with the costs of various privately-managed public housing developments.

- Two, GSD employed third-party experts to prepare budgets for selected public housing properties, also comparing those results with model estimates.

In this chapter, GSD reviews how this field testing was completed, analyzes the results, and discusses accompanying considerations for model adjustments.

PRIVATELY MANAGED PUBLIC HOUSING

Although PHAs generally do not maintain property-based accounting systems, making it difficult to compare model-predicted values with current costs, one exception is the case where PHAs have contracted for property management services. In these instances, the private property manager must provide property-based financial reports as a condition of the management contract. The experience of private management is not wide; nationally, it is estimated that about 8-10% of the stock is managed by contract, although much of that is found in three agencies (Puerto Rico, Chicago, and Atlanta).

GSD examined 21 privately-managed public housing properties in 12 different agencies. In all but two of these cases, GSD conducted site visits to the properties and conferred with the agency and the management company. In the two cases where site visits were not conducted, interviews were conducted by phone.

There are different models of private management in use in public housing. In some cases the PHA delegates full or near-full responsibility to the private firm for managing the property on a day-to-day basis. In other cases, the PHA may continue to retain certain functions in-house, including wait list administration, security, or rent collections. Or, the PHA may incur certain costs that are not allocated to the property, the most common of which is property and liability insurance. Additionally, the expenditures of a particular privately-managed property might not reflect actual property needs if the private manager was not provided with sufficient funds to operate. In examining each of the privately managed sites under this field testing, GSD imputed values where costs/responsibilities were not properly reflected in the financial statements of the

[41] GSD also completed a survey of operating costs on 28 mixed-financed properties, contained in Appendix J. While the results are presented for informational purposes, there are a variety of reasons, outlined in the appendix, why these mixed-financed properties may be a less-comparable test.

property or where it appeared that the resources available to the property were not sufficient to provide well-run housing. Hence, many times the field test estimates were higher than actual expenditures.

Table 5.1 compares the field test results for all 21 privately management properties with model-predicted amounts.[42] (Appendix G contains detailed narrative reports on 13 of these privately-managed field test sites.[43]) Properties noted with an asterisk (*) represent properties with more than one project number; in these instances, model estimates, as well as property characteristics, reflect combined amounts. Similarly, properties noted with a double-asterisk (**) represent properties that were missing variables in the public housing database provided to GSD; consequently, model estimates are based on similar properties.

Table 5.1: Private Management Field Test Results, PUMs

PHA	State	Property Name	Units	Average Bedrooms per Unit	Building Type	Family or Senior	Age # Yrs	Model Estimate	Field Test Estimate	% Variation from FT
Atlanta	GA	Marian Apartments	240	1	High-Rise	Senior	20	$239	$240	0%
Atlanta	GA	Bankhead Courts	386	3.12	Garden	Family	30	$398	$335	18%
Baltimore	MD	Poe Homes	298	1.54	Rowhouse	Family	60	$307	$219	40%
Baltimore	MD	Scattered Sites*	368	2.8	Scattered	Family	40+	$359	$300	19%
Boston	MA	Patricia White	225	1.04	High-Rise	Senior	23	$311	$269	16%
Boston	MA	Commonwealth*	392	2.08	Garden	Family	55	$386	$329	17%
Camden	NJ	McGuire Gardens**	253	2.39	Garden	Family	40+	$398	$309	28%
Chicago	IL	Scattered Sites*	2,424	30	Scattered	Family	Various	$414	$316	30%
Chicago	IL	Armour Square	198	1.00	High-Rise	Senior	30	$304	$280	9%
Haddon Township	NJ	Rohrer Towers	100	0.59	High-Rise	Senior	31	$284	$250	14%
Kansas City	MO	Scattered Sites*	280	2.88	Scattered	Family	Various	$327	$310	5%
Kansas City	MO	Riverview Gardens**	232	2.04	Garden	Family	48	$307	$225	36%
Miami	FL	Gwen Cherry*	297	2.93	Walk-up	Family	23	$393	$270	44%
Miami	FL	Pine Island/Naranja*	344	2.61	Garden	Senior	20	$359	$235	51%
Mount Holly	NC	Holly Hills	47	2.6	Garden	Family	15	$285	$220	30%
Pleasanton	CA	Kottinger Place	50	0.42	Garden	Senior	27	$314	$227	38%
San Bernardino	CA	Scattered Sites (Mgmt Cluster 94)**	193	2.5	Mixed	Family	19	$314	$249	26%
San Bernardino	CA	Wilson St. (Mgmt Cluster 93)	376	2.5	Garden	Family	48	$368	$225	61%
Washington, DC	DC	Sibley Plaza	246	1.64	High-rise	Family	32	$367	$330	11%
Washington, DC	DC	Regency House	160	0.24	High-rise	Senior	31	$304	$264	15%
Winter Park	FL	The Meadows and Tranquil Terraces	171	1.87	Mixed	Mixed	25	$298	$244	22%

[42] Model estimates have been increased, as appropriate, by 2.25% per year to match the year for which the field test data was obtained. For example, the costs for Patricia White are for fiscal-year ending ’02; hence, the model estimate was increased by 2.25% for ’01 and 2.25% for ’02, matching the national inflation rates for the PFS in those years. Also, model estimates are shown before application of any floors/ceilings (see end of chapter).

[43] While not included in this report, GSD also examined various PHA-owned properties that were not public housing but were privately managed. These properties shared similar results, i.e., model estimates were somewhat higher than actual costs.

Of the 21 properties surveyed, all had costs that were less than or equal to the model, with many substantially less than the model.[44] In examining the costs of these properties, GSD did not include agency overhead or contract monitoring costs, which in some cases were quite insignificant and in other cases, in terms of what the agencies reported, quite substantial.

Importantly, a number of the private management field test sites included old properties as well as scattered site properties, areas of particular concern to industry groups. The model estimates were all more than adequate for these classes of properties. Also, while the private management survey did not include any very large properties (more than 400 units), other than scattered sites, GSD did include several large properties in the budget-based field tests (see below).[45] Further, GSD's previous examination of the Mitchell Lama program in New York City, which includes a substantial number of very large properties, did not evidence any diseconomy of scale, which was a concern put forward by various public housing industry groups.[46]

There are a number of both elderly and family "archetypes" within this private management survey. For example, the Chicago Housing Authority currently has about 9,500 elderly high-rise units, all of which are under private management (Armour Square is representative of these properties). The agency assigns to each firm (in 2002) about $290 PUM in non-utility funding, of which at least $40 PUM is to be used for non-routine funds. In comparison, the cost model predicts (for 2002) operating costs for these properties of between $286-$313 PUM. Other elderly private management sites in Boston, Washington, DC, and suburban New Jersey show that the PUM cost of operating a senior high-rise property in higher cost markets often runs in the mid to high $200s, slightly less than the model estimates.

The 392-unit Commonwealth development in Boston is also archetype, one of a renovated family development (although renovated over 18 years ago) in a high-cost market. Although this property was observed to be extremely well-managed, additional resources were estimated to be needed to maintain the property, with its increasing age since last modernization, to the same high standard. Hence, another $52 PUM was imputed, bringing the field test estimate to $329 PUM, still less than the model estimate of $386 PUM.

It should be noted that these private managers are also responsible for compliance with appropriate public housing regulations. Hence, a family property would be required to comply with the public housing pet regulation, Section 3, income disregards, etc.,

[44] GSD also visited the San Diego County Housing Authority and its private management program. However, these properties had high levels of capital items included in the operating expenses, which distorted routine operating costs. GSD did not, then, include San Diego in the sample.

[45] The agency with the greatest number of extremely large properties under private management is Chicago. Essentially all of these properties, however, are distressed, pending either demolition or reconstruction. The agency allocates to these properties on the order of $325 PUM, which includes $40 PUM targeted for extraordinary maintenance, although the agency frequently needs to supplement the extraordinary maintenance budget.

[46] See *Operating Expense Analysis: Mitchell Lama Program, New York City Properties, Final Draft, January 8, 2001.*

providing a secondary source of estimating the cost impact from public housing's different regulations. As a rule, the private managers did not indicate that these "unique" regulations resulted in any significant additional costs as compared with managing other assisted housing. In fact, it was often the local (non-federal) requirements that were placed on firms that were noted as cost drivers, including reporting systems, procurement practices, waiting list administration, etc. At Holly Hills in Mt. Holly, NC, the private firm manages the only public housing property owned by the agency and is assigned the responsibility for preparation of the Annual Plan. In this instance, there is no additional compensation to the management company; preparation of the Annual Plan is simply part of the responsibility of the firm, no different than other reasonable demands an owner might place on a management company.

BUDGET-BASED ESTIMATES

The second primary source of field testing involved the use of experienced operators of assisted housing who were sent to various public housing properties and asked to prepare budgets based on what, in their professional opinion, would be required to operate the public housing "as if it were well-run assisted housing." GSD completed these expert budgets on 97 properties, which can be found in Appendix H.

There were two different rounds of field testing: an initial 50 properties in the fall of 2001 and a second round in the fall of 2002. For the initial round of testing, the "testers" did not know the model estimates when they first prepared their budgets (the model had not been completed). For the second round, the testers were provided with preliminary model estimates.

The first round targeted a mix of properties in eight markets. Properties were selected based on the following rules:

- Some properties, but not all, would be owned by the largest PHA in the metropolitan area;
- The properties would represent a variety of building types and occupancy types, typical of both the metropolitan area and of public housing nationally;
- Properties that received HOPE VI grants, or for which the PHA intended to apply for a HOPE VI grant, or that were subject to the viability analysis now required for certain public housing developments, would be excluded; and
- Properties determined (after consultation with the PHA) to have very atypical operating costs for any other reason would also be excluded.

In the second round, GSD generally targeted special classes of properties, including scattered sites, large family properties, older properties, properties where the model was predicting a major reduction in AEL, and properties in markets where, relative to the rest of the country, model-predicted amounts were either extremely low or high.

In preparing these budgets, the testers used their personal, professional experience in determining staffing and compensation, service levels, and contract costs. If available, the

testers would examine a property's actual contract costs (elevator, trash, lawn, etc.) in preparing budget estimates. In the area of "management fee," GSD generally used the higher end of the range of management fees charged in each market even though the actual experience of PHAs in contracting for private management would indicate the ability to obtain lower fees. Typically, these amounts were in the range of $30-$40 PUM. In addition to the management fee, GSD also included in the estimated budgets a "bookkeeping fee" of around $3-$4.50 PUM, a charge that is common in assisted housing and less so in conventional housing (and rare in privately-managed public housing). Management fees might be higher at some properties because of special characteristics, e.g., very small properties. Or, a tester might have used higher bookkeeping fees in conjunction with lower management fees. Further, because of the recent increases in insurance premiums, GSD made an adjustment to all budgets, where necessary, to reflect current rates and not necessarily rates that would have been available in 2001. On average, the budgeted insurance line item (property, liability, vehicle, and machinery) was in the range of $16-$20 PUM, which in many cases was $10 PUM higher than rates found in the FHA database.[47]

The field testers were instructed not to include items of a capital nature or what might typically be funded through a replacement reserve account. Items typically covered under a capital or replacement reserve account would include replacement of appliances, floor covering, landscape and parking lot upgrades, etc.

GSD held a series of internal meetings to review the results of the budget-based estimates. While this peer-review process resulted in adjustments to certain budgets, GSD was also careful to allow room for differences in management style. For example, one particular tester had a tendency to invest more in security whereas others might have spent those funds on maintenance or resident programs. Because this tester was successful in that model, GSD accepted that approach.

For employee benefits, GSD established a minimum benefit level of $350 per employee per month (retirement, health, disability), exclusive of payroll taxes and unemployment insurance, when preparing these budget-based estimates. Based on its non-profit survey, this benefit level was around the mid-range of non-profit employee benefits. About half of the initially-submitted field test budgets were raised to this minimum level. Also, GSD assumed that all employees were receiving benefits (frequently, benefits either are not available to part-time employees or employees might not participate in plans), allowing for more conservative estimates.

Table 5.2 compares the model estimates for these sites with the budget-based estimates.[48] The list is sorted in alphabetical order, by PHA. Properties noted with an asterisk (*)

[47] The benchmark database includes operating costs from 1998-2000, prior to the recent surge in insurance premiums.

[48] 2000 model estimates have been inflated to match the corresponding year in which the field test was conducted. Hence, the 2000 model estimates for the field tests conducted in 2001 (Round 01) were inflated 2.25%; the model estimates for field tests conducted in 2002 (Round 02) were inflated at a compounded rate of 2.25% annually for two years. Model estimates shown are also before application of any floors/ceilings (see discussion at end of chapter.

represent properties with more than one project number. Therefore, model estimates, as well as property characteristics, reflect combined amounts. Properties noted with a double asterisk (**) represent properties that were missing variables in the public housing database provided to GSD; consequently, model estimates were imputed based on similar properties.

Table 5.2: Model Estimates vs. Budget-Based Estimates, PUMs
Model estimates are shown before application of any floors or ceilings

PHA	State	Property Name	Units	Bedrooms per unit	Building Type	Family or Senior	Age # Yrs	Model	Field Test	% Variation	Round
Akron	OH	Edgewood Homes	116	2.14	Gdn	Family	61	$295	$289	2%	02
Allentown	PA	Hanover Acres	322	2.11	Mixed	Family	60	$289	$247	17%	02
Allentown	PA	John Gross Towers	147	0.76	HR	Senior	34	$224	$208	8%	02
Bangor	ME	Nason Park Manor	50	1.00	HR	Senior	32	$261	$256	2%	02
Bangor*	ME	Capeheart I and II	442	2.54	Mixed	Family	48	$390	$242	61%	02
Baytown	TX	Dezaval and Archia Courts	80	2.53	S/D	Family	41	$325	$230	41%	01
Baytown	TX	Edison Cts and Archia Elderly	50	0.56	Row	Senior	34	$232	$201	15%	01
Beaumont	TX	Lucas Gardens	150	0.77	Row	Senior	35	$206	$215	(4%)	02
Beaumont	TX	Tracewood I and II	77	2.05	Walk-up	Family	16	$244	$235	4%	01
Boston	MA	A.H. Taylor	164	1.86	Mix	Family	48	$411	$298	38%	01
Boston	MA	Ashmont Street	54	1.11	Walk-up	Senior	38	$330	$265	25%	01
Boston	MA	Torre Unidad	204	0.43	Elev	Senior	26	$314	$300	5%	01
Boston	MA	Whittier Street	200	2.34	Mix	Family	47	$459	$326	41%	01
Brooksville	FL	Hillside/Summit	126	1.98	Mix	Family	27	$312	$275	13%	01
Buffalo	NY	Commodore Perry	330	1.90	Mixed	Family	60	$289	$276	5%	02
Buffalo	NY	Holling Homes	132	1.02	HR	Senior	30	$222	$208	7%	02
Burlington	IA	Autumn Heights	201	1.04	Mixed	Senior	30	$174	$186	(7%)	02
Cambridge	MA	Corcoran Park	153	2.44	Mix	Family	47	$441	$276	60%	01
Cambridge	MA	Putnam Gardens	122	2.31	Walk-up	Family	46	$433	$269	61%	01
Dayton	TX	Glendale	30	3.50	S/D	Family	13	$319	$343	(7%)	01
Des Moines	IA	Eastview Manor	50	1.02	Gdn	Senior	23	$192	$219	(12%)	02
Detroit	MI	Sheridan Place II	200	1.01	Elev	Senior	17	$234	$244	(4%)	01
Detroit	MI	Sojourner Truth	66	3.21	Row	Family	13	$370	$303	22%	01
Detroit	MI	Smith Homes	160	2.65	Row	Family	57	$370	$298	24%	01
East St. Louis	IL	Audubon Terrace/ Emerson	26	3.19	Row	Family	29	$354	$264	34%	01
East St. Louis	IL	Normane Owens	72	2.00	Row	Family	26	$284	$262	8%	01
Elizabeth	NJ	Ford Leonard Towers	126	0.95	HR	Senior	33	$322	$297	8%	02
Elizabeth	NJ	Mravlag Manor	423	1.82	Mixed	Family	60	$398	$312	28%	02
Fergus Falls	MN	Riverview Heights HR	60	1.00	HR	Senior	32	$176	$204	(14%)	02
Framingham	MA	Beaver Street	125	2.51	Row	Family	46	$448	$290	54%	01
Framingham	MA	Brady Drive	110	1.05	Walk-up	Senior	18	$304	$231	31%	01
Gloucester	MA	Willowood Gardens	60	2.48	Mixed	Family	45	$446	$306	46%	01
Houston	TX	Bellerive Apts**	210	1.05	Elev	Senior	27	$232	$228	2%	01
Houston	TX	Cuney Homes*	564	1.59	Mix	Family	60	$291	$227	28%	01
Houston	TX	Kennedy Place Apts	60	3.30	Row	Family	18	$356	$369	(4%)	01
Inkster	MI	Cantebury West	24	2.00	Walk-up	Family	22	$316	$318	(1%)	01
Inkster	MI	Parkside Estates	134	2.22	Walk-up	Family	21	$328	$300	9%	01
Inkster	MI	Twin Towers	200	1.01	Elev	Senior	30	$244	$239	2%	01
Kirkwood	MO	Kirkwood House	100	0.75	Elev	Senior	24	$209	$213	(2%)	01
Las Vegas	NV	Marble Manor*	125	0.78	Mixed	Senior	37	$268	$229	17%	02

Las Vegas	NV	Archie Grant Park	235	2.10	Mixed	Family	48	$381	$331	15%	02
Livonia	MI	McNamara Towers II	81	0.46	Elev	Senior	28	$243	$235	4%	01
Louisville	KY	Beecher	760	1.74	Gdn	Family	59	$284	$231	23%	02
Louisville	KY	Clarksdale	715	2.05	Gdn	Family	60	$269	$243	11%	02
Louisville	KY	St. Catherine	159	0.43	HR	Senior	28	$222	$204	9%	02
Marin County	CA	Kruger Pines	56	0.18	Elev	Senior	29	$306	$286	7%	01
Marin County	CA	Marin City	300	2.33	Mix	Family	40	$413	$288	43%	01
Marin County	CA	Venetia Oaks	36	1.11	Row	Senior	32	$312	$307	2%	01
Marshall*	MO	Vest-Morrow-College	160	2.22	Mixed	Family	34	$190	$248	(23%)	02
Martinsburg	WV	Adams Stephens	47	1.98	Gdn	Family	58	$382	$267	43%	02
Martinsburg	WV	Ambrose Towers	104	0.40	HR	Senior	26	$298	$246	21%	02
Memphis	TN	Foote Homes	420	2.26	Row	Family	59	$280	$232	21%	02
Memphis	TN	Jefferson Square	208	0.31	HR	Senior	28	$209	$248	(16%)	02
Meriden	CT	Community Towers	221	1.01	HR	Senior	31	$325	$237	37%	02
Meriden	CT	Mills Memorial	140	2.39	Mixed	Family	38	$438	$375	17%	02
Milwaukee	WI	Convent Hill	120	1.00	HR	Senior	39	$228	$210	9%	02
Milwaukee	WI	Parklawn	380	2.15	Gdn	Family	32	$306	$259	18%	02
Minneapolis	MN	Franklin Towers	110	1.01	HR	Senior	33	$262	$267	(2%)	02
Minneapolis	MN	Glendale Apts	184	2.44	Gdn	Family	48	$346	$336	3%	02
New York City	NY	George Washington Carver	1246	2.13	HR	Family	22	$468	$431	9%	02
New York City	NY	La Guardia Addition	150	0.80	HR	Senior	35	$370	$360	3%	02
Oakland	CA	Scattered Sites	38	2.50	Row	Family	28	$434	$402	8%	01
Oakland	CA	Scattered Sites	152	1.12	Elev	Senior	16	$306	$282	9%	01
Orlando	FL	Lake Mann Apartments	210	2.49	Mixed	Family	50	$352	$315	12%	02
Orlando	FL	Meadow Lake Apartments	87	1.00	Mixed	Senior	24	$258	$248	4%	02
Pagedale	MO	Pagedale I	67	2.76	S/D	Family	19	$288	$253	14%	01
Pennington Co.	SD	Prairie Village	28	1.04	Row	Senior	25	$190	$185	3%	02
Pennington Co.	SD	Unnamed Family	50	2.84	Mixed	Family	26	$293	$299	(2%)	02
Philadelphia*	PA	Scattered Sites	473	3.10	Row	Family	26+	$444	$296	50%	02
Pinellas Co.	FL	Lakeside Terrace	110	1.02	Walk-up	Senior	27	$241	$227	6%	01
Pinellas Co.	FL	Ridgeview/Rainbow Village	200	2.72	Row	Family	31	$330	$261	27%	01
Pittsburgh	PA	Allegheny Dwellings	282	1.72	Row	Family	56	$279	$256	9%	02
Pittsburgh	PA	Pressly St. High Rise	212	1.00	HR	Senior	29	$240	$228	5%	02
Plymouth	MI	Tonquish Creek Manor	60	1.00	Elev	Senior	30	$236	$227	4%	01
Reno	NV	Mineral Manor	150	2.25	Gdn	Family	41	$269	$262	3%	02
Reno	NV	Tom Sawyer	100	1.02	Mixed	Senior	36	$215	$237	(7%)	02
Roanoke	VA	Bluestone Park	72	2.67	Mixed	Family	28	$286	$247	16%	02
Roanoke	VA	Morningside Manor	105	0.39	HR	Senior	28	$208	$236	(12%)	02
Salem	OR	11-2 Multifamily	108	3.35	Mixed	Family	28	$347	$322	8%	02
Salem	OR	11-6 Multifamily	62	1.00	HR	Senior	24	$208	$219	(5%)	02
San Francisco	CA	430 Turk	89	0.20	Elev	Senior	13	$297	$293	1%	01
San Francisco	CA	Mission Dolores	92	0.27	Elev	Senior	34	$321	$305	5%	01
San Francisco	CA	Alemany	158	2.22	Mix	Family	45	$411	$354	16%	01
Springfield	IL	Charles Brandon Addition	76	4.01	Mixed	Family	29	$371	$308	21%	02
Springfield	IL	Rev. Hillenbrandt Apts	151	1.00	HR	Senior	27	$216	$230	(6%)	02
St. Louis	MO	LaSalle Park Village	148	3.09	Row	Family	24	$338	$268	26%	01
St. Louis	MO	Kingsbury Apts	147	0.41	Elev	Senior	29	$222	$218	2%	01
St. Louis	MO	James House	155	0.37	Elev	Senior	30	$215	$211	2%	01
St. Petersburg	FL	Graham Park	336	0.43	Elev	Senior	28	$245	$218	13%	01
St. Petersburg	FL	James/Clearview Park	104	2.65	Walk-up	Family	18	$321	$277	16%	01
Tampa	FL	Seminole Park Apts	100	1.96	Row	Family	24	$306	$267	15%	01
Tampa	FL	Mary Bethune Homes	400	1.92	Mix	Family	34	$329	$246	34%	01
Watertown	SD	Watertown HA	85	1.55	Mixed	Family	25	$197	$197	0%	02

White Plains	NY	Schulyer-Dekalb	167	1.64	HR	Family	29	$433	$352	23%	02
Williamson	WV	Goodman Manor	102	1.00	HR	Senior	27	$176	$206	(15%)	02
Williamson	WV	Victoria Court	72	1.83	Gdn	Family	60	$221	$236	(7%)	02
Winchendon	MA	Pearl Drive	30	3.40	Row	Family	26	$513	$303	69%	01

Findings

Findings from these budget-based field tests include:

- Of the 97 properties for which budgets were completed, 78 had model estimates that were equal to or higher than the budget-based estimates, even considering that GSD adjusted the budgets to reflect current rates for insurance. Of the 19 where the budget-based estimates were higher than the model, 13 were within 5% of the model estimate.

- Elderly properties in the lower cost markets have the lowest model-produced estimates, often at levels the field testers felt were below what was necessary to assure professional management and suggesting the need for a possible floor.

- Family properties in higher cost markets have the highest model estimates. For these properties, the field testers generally produced budgets that were less than the model, except when there was an extraordinary site situation or where there were some extreme security needs. No field test estimates, other than New York City, were greater than $402, suggesting the possibility of a ceiling.

- Many of the field test budgets included some element of resident services/programs in their budgets, where the testers felt such services were appropriate. Generally, these were service-coordination positions and not direct service providers. At those properties that included resident services/programs (more than half of the sites), the amounts generally ranged from about $4-$13 PUM.

- GSD did not find the model to systematically underestimate scattered site properties, older properties, or large properties, which were special property types that public housing industry advocates did not feel were sufficiently represented in the FHA database.

- It was often difficult to estimate the cost for very small properties (below, say, 35 units), where the testers were less experienced. Some very small properties were dropped from the sample because GSD was not able to provide a reliable budget estimate.

- The budgets for properties in good physical condition, whether recently modernized or simply well-preserved, were frequently substantially below the model estimate.

- While the field testers did not include in their budget estimates non-routine items, the model estimates generally provided room for reasonable levels of such items.

- While the vast majority of the field test budgets were less than model estimates, the family properties, especially those with values over $300 PUM, had the greatest positive variance. One possibility for this is that FHA family properties may be recording more items of a non-routine nature as routine operating expenses than field testers included.

Agency Comments

Budget-based field test results were sent to the participating agencies for comments. GSD received comments from nine agencies. The nature of those comments, and GSD's responses, are shown below:

- *The field tests budgets included fewer maintenance staff than the agencies may currently use*. **Response:** Upon review, GSD increased the staffing budgeted at one property; in all other instances, GSD believes that the staffing levels were consistent with maintaining well-run assisted housing.

- *A few comments either indicated that GSD had not included a specific line item or had calculated that line item incorrectly.* **Response:** These items were subsequently corrected.

- *The field test budgets included lower wages than a government agency is required to pay… these wages violate collective bargaining, undermining relationships with unions and raising possibility of slowdown or work stoppage.* **Response:** GSD used wages that reflected local property management practice.

- *We are not able to employ individuals in the same skill levels essential to maintaining the unique and different portfolio of properties.* **Response:** GSD built the budgets in accordance with standard, accepted property management practices.

- *The properties selected were not representative of our portfolio.* **Response:** GSD attempted to select properties that were generally representative of the public housing program. Still, to the extent that a property was selected that was not representative of any particular PHA's portfolio (say, the PHA's portfolio included more older properties), the estimate prepared reflected the characteristics only of the property examined and not of other properties in the agency.

- *We are located in an area of high housing costs.* **Response:** To the extent that those high housing costs also result in high operating costs, they would have been reflected in the budget estimates.

- *Our costs are higher than the budget estimates.* **Response**: The purpose of the exercise was to determine what an experienced operator of assisted housing would spend, which might be higher or lower than existing costs.

- *Our agency conducts business differently than what is assumed in the budget estimates*. **Response:** The budgets were prepared assuming standard, commonly accepted industry practices.

- *Our past history of small contractors indicate that their workmanship is poor and availability cannot be guaranteed…using small contractors also raises the need for inspectors, which adds to costs.* **Response:** Standard industry practice is to employ a cadre of multi-skilled maintenance tradespersons and to contract for specialized work or for work during peak periods, e.g., when there is a sudden increase in apartment turnover. Supervision of these contractors is a normal part of the responsibility of on-site personnel.

- *The budgets did not include funds for equipment replacement or for asbestos testing and remediation, lead-testing and remediation, environmental test, etc.* **Response:** The items listed are typically capital expenses, not operating expenses.

- *The budgets did not include funds for vehicle insurance.* **Response:** Vehicle insurance, which is a small percentage of overall insurance costs, was factored in, where appropriate, under the insurance line item. GSD has observed, however, that private operators tend to use far fewer vehicles than public housing.

- *The budgets did not include costs for utilities or PILOT payments.* **Response:** These amounts were purposefully excluded from the estimates.

- *The budgets did not include indirect costs for such items as human resources, procurement, IT, legal affairs, etc.* **Response:** These "corporate" or "overhead" costs are included in the management fee line item.

- *The budgets assumed that maintenance workers will perform all aspects of maintenance across the various trades, with the more complex work contracted out. This arrangement may raise questions with the various craft unions as well as questions regarding payment of prevailing rates under HUD regulations.* **Response:** The staffing patterns employed are normal and customary in assisted housing. The labor rates used were also prevailing.

- *The budgets did not include enough funds for resident programs/services.* **Response:** The budgets included what the testers felt was normal and customary in the area of programs/services for maintaining well-run assisted housing.

- *The budgets did not reflect the greater scope and complexity of the agency's operations.* **Response:** The budgets were prepared assuming commonly accepted methods of managing assisted housing.

RECOMMENDATION

Overall, the field testing results, including both the survey of actual costs of privately managed public housing as well as budget-based estimates, suggest that the model predicts amounts that are adequate to more-than-adequate to operate well-run public housing for most public housing properties. It appears that the model may be too low at the low end of the range and too high at the high end (which would have been even higher if GSD applied the 12% non-profit coefficient as opposed to the adjusted 10% coefficient).

Of course, the sample size for the field testing is still relatively small and there could be both sample bias as well as undetected tester bias, resulting in differences in the ways that field testers examined properties. Field testers may be less familiar with the operation of small properties in smaller markets (where their estimates were higher than the model) or may have budgeted for more optimal or steady-state conditions (although the private management results control for many of these possible biases/sources of error). The field testers were also asked not to budget for non-routine items and there may be higher levels of non-routine expenditures in operating expenses than reported to FHA.

Despite these and other possibilities, the weight of the evidence supports action that would, at a minimum, deal with values at the extremes. Consequently, GSD applied the following "out-of-model" adjustments in calculating public housing property estimates:

- To raise the lowest model estimates, a national floor of $200 PUM for senior properties and $215 PUM for family properties. These amounts were levels that appeared to be reasonable thresholds. A total of 1673 senior properties and 760 family properties were affected by this floor at a cost of $22.9 million (less than 1% of national subsidy requirements). Mostly, these are small properties of under 50 units, where a single unusual expenditure can greatly affect PUMs. A complicated eviction for a 50-unit property, for example, could increase costs $5-$10 PUM. The effect of these floors is also to greatly minimize the disparity in observed geographic coefficients. For example, Riverview Heights in Fergus Falls, MN, a senior property, has a 2000 model estimate of $168 PUM. Raising Riverview's AEL to $200 PUM has the effect of increasing its geographic coefficient 19%, from -30% to -11%.

- To lower the highest model estimates, both a national ceiling of $420 PUM ($480 PUM for New York City) and a 4% reduction in model values higher than $325 PUM. The ceilings reflect the opinion of the research team that operating expenses for well-run assisted housing should not exceed these levels, exclusive of non-routine items. Like the ceiling, the 4% reduction for estimates higher than $325 PUM reflects the opinion of the research team that model estimates above this range were most often overly adequate to maintain good quality public housing. New York City was excluded from the 4% reduction since the effect would begin to approach levels found in the Mitchell-Lama program and the intent of these floors/ceilings is to err on the side of caution. A total of 1869 properties were affected by the 4% reduction, of which 275 were also affected by the ceiling, for a total impact of $43.4 million.

GSD believes that the above adjustments are modest but prudent measures. They respond to field testing information indicating certain patterns but without pre-empting a strong statistical model based on an extremely large dataset.

CHAPTER 6
Utilities

Under the public housing Operating Fund, PHAs are reimbursed for utility costs according to a three-year consumption average, also known as the "rolling base." Historically, PHAs have split the savings with HUD when consumption is less than the rolling base and shared the added cost when consumption is greater than the rolling base. A recent regulatory change, recommended by the Neg-Reg Committee, increased a PHA's share of this split to 75 percent. Additionally, PHAs are held harmless for changes in utility rates such that, at year-end, PHAs "reconcile" with HUD their projected versus actual utility rates. In 2002, public housing utility spending was $1.3 billion, which represented approximately 22% percent of the $5.8 billion spent to operate public housing.

Although this rolling base system has been used since the mid 1970s, it has been criticized both for not providing adequate incentive to PHAs to reduce utility costs and for perpetuating existing use patterns and perceived inefficiencies. (Any system that funds PHA utilities based on actual use or past history may be similarly faulted.) With respect to determining a PHA's utility funding, there are essentially two alternatives for replacing this rolling base system.

- **Property-specific engineering studies.** Under this approach, also known as energy modeling, the utility funding assigned to a particular property would be based on the results of an independent engineering study of the physical characteristics of that property, taking into consideration the thermal conductivity of the building envelope, the type of heating systems, total square footage (volume), etc. Using established utility modeling tools, these property-specific engineering studies would then predict consumption, incorporating reasonable energy conservation measures.

- **Benchmark model.** Under this approach, the utility funding assigned to a particular property would be based on utility cost or consumption norms for operators of multifamily housing, taking into consideration building type, climatic condition, square footage, etc.

Because the resources needed to conduct detailed engineering studies of each property far exceeded the amounts available under this project, GSD pursued a feasibility study designed to test a utility benchmarking model. Four agencies were selected for this study, representing a range of climatic conditions, building types, and heating technology. Based on these test markets, this research would attempt to determine the feasibility of collecting data on utility consumption and costs in private multi-family housing to establish appropriate norms for public housing. What type of data would be necessary for input into such a system? What data sources currently exist and could those sources be used in a benchmark model? How practical would it be to collect new

data? What would be the appropriate variables to use in establishing cost or consumption standards? And, could such an approach be sufficiently accurate?

This chapter presents the major observations, findings and recommendations of this feasibility study of establishing a benchmarking approach for public housing utility funding.

BACKGROUND

This section of the chapter provides background information on what PHAs spend on utilities, how they receive utility funding (and related financial incentives), consumption levels, regulations affecting utility conservation, and utility performance standards.

Public Housing Utility Expenditures

In pubic housing, about 75% of utilities are project-paid (paid by the PHA) and 25% are tenant-paid (billed directly to the tenant). This contrasts with the national multifamily market, where 83% of tenants pay directly for electricity, and 64% of tenants pay for heat (in gas heated units).[49]

Utility expenses are defined here as the cost of energy (electric, gas, fuel) and water.[50] In 1999, PHAs spent $1.08 billion on purchased utilities for 1.276 million public housing units, or $74 per unit monthly (PUM), shown in Table 6.1 by type of utility.[51] In addition, HUD estimated tenant expenditures on utilities (excluding water) at about $278 million in 1997.[52] The highest spending is on electric, at about $400 million ($27 PUM).[53]

[49] National Multi Housing Council, *Who Pays Apartment Residents' Utility Bills?* Research Notes, April 1998.

[50] Trash removal expenses are treated as a maintenance expense and not a utility expense in the Chart of Accounts for public housing. Frequently, conventional multifamily properties will group trash removal costs under the utilities category. The above figures also do not include any labor related costs associated with maintaining utility plant or equipment.

[51] Because of availability of certain detailed data on public housing utility costs and consumption, different fiscal years may be referenced in this chapter.

[52] U.S. Department of Housing and Urban Development, *Energy Expenditures in Public Housing: Current Consumption and Opportunity for Savings*, June 1999.

[53] According to the Public and Indian Housing Low-Rent Technical Accounting Guide, the account for "Utilities – Other" includes expenses related to sewer charges, as well as materials, equipment, and contracts used in the operation of heating plants, water supply plants, liquefied gas plants, and sewerage disposal plants which are owned and operated by the HA.

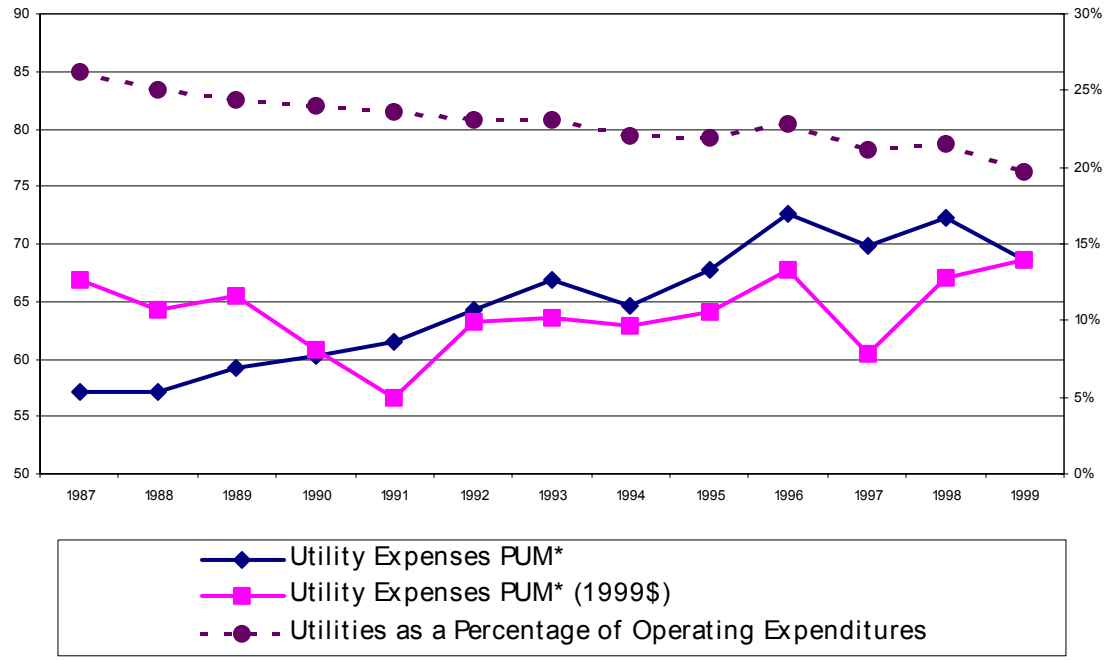
Table 6.1: PHA Utility Expenditures in 1999

	Annual	PUM	% of Total
Water	$ 293,668,041	$ 20	27%
Electric	$ 394,936,940	$ 27	36%
Gas	$ 230,484,714	$ 16	21%
Fuel	$ 79,655,806	$ 5	7%
Other	$ 84,259,811	$ 6	8%
Total	$1,083,005,312	$ 74	100%

Source: US Department of Housing and Urban Development, Statement of Operating Receipts and Expenditures (HUD-52599), 4 Qtrs Ending 9/30/99.

Per unit utility expenses have increased 1.5% over the past decade, but have remained flat in inflation-adjusted terms (solid lines in Table 6.2, plotted against left hand side). During this period, other operating expenses increased at a faster rate. As a result, utilities have declined as a fraction of total operating expenses (dotted line in Table 6.2, plotted against right hand side).

Table 6.2: Trends in PHA Utility Expenditures



Source: HUD Public and Indian Housing, unpublished data. Data were taken from the Statement of Operating Receipts and Expenditures (HUD-52599), and aggregated at the national level.

HUD tracks total public housing utility expenses through annual financial statements submitted by PHAs. Since these are consolidated financial reports (agency-wide reporting), no information is available on project-level utility costs. Also, as discussed below, since HUD does not separately track utility consumption, it is not clear why overall public housing utility expenditures have experienced only moderate increases over the past ten or more years. Certainly the on-going modernization of public housing has contributed to more energy efficient buildings and heating plants. But how much is also due to, and to what extent it is due to, increased tenant education, improved PHA conservation and maintenance programs, the demolition or deprogramming of obsolete buildings, the conversion to tenant paid utilities, or rate reductions is not known.

Public Housing Utility Consumption

Quite little is known about public housing utility consumption. Although PHAs submit agency-wide consumption data for purposes of calculating operating subsidy needs, HUD does not capture or track that data. This consumption information is used solely to calculate a PHA's utility subsidy levels; the consumption data is not maintained by HUD and is not used for monitoring purposes.[54] Because there is no database on public housing utility consumption, there is no information available on consumption trends or consumption standards by building type (high-rise, low-rise, walk-up), climatic region, or other factors. Table 6.3 provides estimates of energy consumption derived by dividing actual PHA energy expenditures by state-level rate schedules. Amounts are shown by climate zone, expressed in PUM and square foot terms (see Figure 6.1 at the end of this chapter showing climate zones). Based on these assumptions, approximately 51% of energy consumption occurs in Climate Zone 2, which has 44% of public housing's units. Climate Zone 2 also has the highest imputed consumption per unit and per square foot.

Table 6.3: Energy Consumption Aggregate Estimates

Climate Zone	Number of Units	Energy Expenditures		Consumption	
		Total	PUM	Average Annual Mbtu/unit	Average Annual Kbtu/ft2
1	65,346	$ 51,623,340	$ 66	77.9	93
2	572,308	$ 564,867,996	$ 82	87.2	104
3	181,213	$ 138,990,371	$ 64	72.3	86
4	195,347	$ 153,542,742	$ 65	60.4	72
5	276,613	$ 190,033,131	$ 57	54.0	64
Totals	1,290,827	$ 1,099,057,580	$ 72	74.1	88

Source: *Energy Expenditures in Public Housing: Current Consumption and Opportunity for Savings*, HUD, 1999.

Climatic region greatly affects utility consumption and costs, as does the physical nature of the stock. More than two-thirds of public housing was built before 1970, when energy and water conservation were typically not a major consideration in building designs; this older stock also happens to be in the colder climates.

[54] As later in this chapter, HUD could, with modest additional effort, use this utility subsidy request mechanism to track consumption and obtain rich information to use in developing utility policies.

HUD Funding of Public Housing Utility Costs

PHAs receive direct reimbursement from HUD for utility costs, with a few incentives for conservation and energy improvements.

Prior to the start of the fiscal year, a PHA submits estimated utility expenditures on HUD Form 52722-A, *Calculation of Allowable Utility Expense Level*. On this form, PHAs record consumption levels, by utility type, over the preceding three years for all properties where utilities will be furnished in the upcoming year.[55] This form then calculates the average consumption over this period (also referred to as the "three-year rolling base" of consumption). The consumption levels for each energy type are then multiplied by current rates to produce an estimated utility expense for the year, also known as the Allowable Utility Expense Level (AUEL), and which becomes the basis for funding. At the end of each year, a PHA uses form 52722-B, *Adjustment for Utility Consumption and Rates,* to reconcile actual versus projected consumption and rates. These subsidy adjustments are then transmitted on HUD-Form 52723, *Operating Fund Calculation of Operating Subsidy*.

As an incentive to consume less, PHAs receive 75% of the savings resulting from consumption in any year where consumption is less than the rolling base. On the other hand, if consumption is greater than the rolling base, PHAs must absorb 75% of the higher costs of consumption. The effect of this 75/25 split is that, over four years, a PHA that permanently reduces its consumption below the rolling base receives a 225% "payback", the equivalent of retaining the consumption savings for 2 ¼ years. After four years (including the initial year of reduced consumption), the lower consumption level becomes the new rolling base and the PHA no longer benefits financially from the lower savings. Table 6.4 illustrates the effect of this 75/25 split for a simple case where rates and consumption are constant except for a one-time investment that results in a permanent 30% reduction in consumption.[56]

[55] Since the requested budget year is the upcoming year, and the PHA does not have data for the current year, the three previous years of data are actually the years two through four prior to the requested budget year. For example, in 2002 PHAs submit subsidy eligibility calculations for 2003, using utility consumption data for 1999, 2000, and 2001.

[56] PHAs benefit or are penalized regardless of the source of the consumption savings/increases. For example, consumption may go up/down because of year-to-year fluctuation in weather patterns. Or, consumption may go down as a result of recent modernization work.

Table 6.4: Illustrated Savings under Rolling Base

	Initial Rolling Base	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Current Consumption	20,000	14,000	14,000	14,000	14,000	14,000	
Rate	$0.50	$0.50	$0.50	$0.50	$0.50	$0.50	
Actual Energy Costs	$10,000	$7,000	$7,000	$7,000	$7,000	$7,000	
Rolling Base Consumption	-	20,000	20,000	18,000	16,000	14,000	
"Recognized" Costs		$10,000	$10,000	$9,000	$8,000	$7,000	
Savings Retained by PHA		$2,250	$2,250	$1,500	$750	$0	$6,750
Actual Savings Compared to Initial Rolling Base	-	$3,000	$3,000	$3,000	$3,000	$3,000	$15,000

Costs are permanently reduced by $3,000/year as a result of a 30% reduction in consumption, but the PHA retains only $2,250 the first two years after the reduction, $1,500 the third year, and $750 the fourth year, for a cumulative retained savings of $6,750 (a little more than two years worth of savings). After the fourth year, the financial benefit to the PHA falls to zero.

The rolling-base system holds a PHA harmless for changes in rates. If rates increase during the year over the projected amount, the PHA receives a year-end adjustment; if the rates decrease over the projected amount, the PHA returns subsidy to HUD. An exception to this rule is where the PHA has negotiated actual rate savings with utility suppliers or purchases "at the well-head." In these cases, a PHA averages the negotiated rate with the rate that would otherwise have been in effect for purposes of calculating the AUEL, the net effect of which allows the PHA to retain 50% of these special rate savings. While initially only permitted to keep the first year of these special rate savings, PHAs now keep these rate savings in perpetuity (unlike consumption savings, which "roll out" of the system after four years).

Finally, in 1987, legislation was passed allowing PHAs to use private financing to make energy improvements.[57] After conducting an energy audit to identify energy savings opportunities, a PHA can borrow money to finance energy improvements. The energy savings from the improvements are used to repay the loan. An Energy Service Company (ESCO) performs the audit, and then helps to select the improvements and to estimate savings. The ESCO also provides a guarantee for minimum energy savings or for the debt service on the loan used to make improvements.

[57] Section 118(a) of the Housing and Community Development (HCD) Act of 1987.

HUD had to create a new system so that PHAs could retain the savings in order to pay back the loans (if they used the system described above, savings would phase out too quickly– within four years– to pay back the cost of improvements). Under a performance contract with an ESCO, HUD allows one of two methods for PHAs to retain the level of subsidy that would have been in effect if the improvements were not made. The two options are "freezing" the consumption level for the duration of the contract (up to twelve years), or getting a subsidy "add-on." A description of these two options follows (excerpted from the 1992 HUD guide on Energy Performance Contracting for Public and Indian Housing).

- The first incentive is freezing the three-year rolling base utility consumption at the level of consumption before installation of the energy improvement and permitting the PHA to retain 100% of the cost savings during the contract period. This incentive permits PHAs/IHAs to retain cost savings normally returned to HUD from reduced utility consumption to pay for the capital and related costs of energy improvements.

- The second incentive allows obligation of additional operating subsidy eligibility as an "add-on" to pay for the amortization cost of energy improvements financed through a loan. HUD approval of either of the two incentives is based upon a determination that (1) payments under the contract can be funded from the reasonably anticipated energy cost savings and (2) the contract period does not exceed 12 years.

While some of the larger PHAs have made notable use of performance contracting, and leveraged substantial amounts of private financing to make energy improvements, many PHAs have not taken advantage of this program and the general use of ESCOs is not widespread.

Regulations Affecting Utility Conservation

In addition to incentives related to funding, HUD has four major regulations on utility conservation. HUD requires PHAs to conduct energy audits at least every five years (24 CFR 965.302), and to undertake all identified cost-savings measures as funds become available (965.307). PHAs must also purchase equipment that meets DOE standards for energy efficiency (965.306), and to individually meter household utilities where feasible (965.401).[58]

HUD Evaluation of Utility Performance

The Public Housing Assessment System (PHAS), which serves as the primary performance measurement tool in public housing, includes a component on energy performance, although its weight is very small. Within the Financial Indicator (worth 30

[58] 965.402 requires a cost/benefit analysis to determine whether a change from master-metering to check-metering or retail service will be cost effective. Sub-metering can provide the benefit of retaining lower commercial rates, but is not permitted by law in some states and localities.

out of the 100 possible points) is a sub-component called "Expense Management/Utility Consumption." This factor measures "the PHA's ability to maintain its expense ratios at a reasonable level relative to its peers (adjusted for size and region)", with a maximum possible score of 1.5 (out of the total PHAS score of 100).[59] It consists of a weighted average expense, with utilities expenses weighted much less than the actual proportion of expenses spent on utilities (apparently to measure controllable expenses, and discounts the effect of sometimes highly variable utility expenditures). This method provides little information on the comparative energy efficiency of agencies relative to their peers, and gives marginal emphasis to energy performance in the annual evaluation of PHAs.

RESEARCH APPROACH

This section of the chapter discusses how the field research was completed at the four PHAs to determine the feasibility of a utility benchmarking system, including how these agencies were selected, the protocol for that field work, the analyses conducted, and reports generated.

Agency Selection

GSD sought a variety of PHAs with regard to geographic location, climate, agency size, utility billing arrangements, and typical heating/cooling equipment. Although the consumption data from the four agencies was not intended to be used to develop a national model, but only to test the feasibility of benchmarking to private norms, the sample was chosen to maximize the range of experiences in public housing.

The final sample included the PHAs in Providence, RI, Akron, OH, Reno, NV, and Athens, GA.[60] Table 6.5 presents some key characteristics of the housing operated by these agencies:

Table 6.5: Utility Characteristics of Selected PHAs

Units in Projects					2000 Average Annual Utility Cost ($/unit)				
Housing Authority	Highrise	Row	Walkup	Total Units	Heating Degree Days	Electric	Heating Fuel	Water/ Sewer	**Total**
Providence	1108	740	513	2361	5972	$517	$479	$273	**$1,269**
Akron	1730	1790	562	4082	6224	$398	$166	$239	**$803**
Reno	0	658	100	758	6022	$471	$354	$378	**$1,203**
Athens	115	1167	0	1282	2975	$440	$430	$331	**$1,201**

[59] Financial Indicator Methodology and Analysis Guide, Real Estate Assessment Center, September 2001.
[60] Two agencies originally selected for participation were eventually dropped from participation. In the first case, a California housing authority was eliminated because it would be unable to furnish data for tenant paid electricity because of problems obtaining information from the utility supplier during the California electricity shortage. Additionally, a Very Large PHA was replaced because its files and records were unavailable due to reviews by other parties.

Field Work

The protocol for each field survey included (1) an "in-briefing" with senior staff, (2) the collection of PHA utility data, (3) a physical assessment of each property, (4) an analysis of utility service arrangements, (5) an evaluation of operating and maintenance procedures, (6) an evaluation of the agency's energy consciousness, (7) an effort of data collection on comparable private housing stock, and (8) an exit briefing.

Comparative Analysis

Following completion of the field work, GSD then attempted to compare each PHA's utility costs and consumption against information from third-party databases. GSD targeted six large data sources as potential candidates for use in establishing utility costs/consumption standards. These included:

- **The Institute for Real Estate Management and the National Apartment Association** both publish survey results of their members' buildings, representing some 724,000 units and 598,000 units, respectively. These surveys include information on building type, square footage, and utility costs. However, both lack information on average bedrooms per unit, building age, heating systems, and the extent of tenant- versus project-paid utilities. Most importantly, these surveys also do not include consumption data.

- **The Rural Housing Service (RHS) of the US. Department of Agriculture.** This database includes costs 360,000 units nationally in rural areas. Property level data by state was available for comparison at all four sites, but only for row-type/townhouse & garden/walkup building types. No consumption data is available, only utility costs.

- **Two large proprietary databases.** Two of the nation's largest managers of multifamily housing (each with over 200,000 units under management) made their operating cost data available to the GSD for this study. Like most of the other sources, these databases contain only cost and not consumption data

- **U.S. Department of Energy's Residential Energy Consumption Survey (RECS).** This field survey of a statistically valid sample includes consumption data but was most recently published in 1997 for the four Census regions, the nine Census Divisions, and for the four most populous states (CA, FL, NY and TX). For comparison with the PHA data, GSD calculated average utility expenditures by climate zone for multi-unit properties from the public microdata files. However, RECS groups all buildings with more than 5 units as "multi-family", with further delineation as to physical design.[61]

[61] GSD did not consider either Census data or the American Housing Survey (which updates Census information every four years for 44 market areas) as potential benchmarking sources. Unlike the RECS, neither of those surveys includes data on utility costs that are included in the rent (only whether or not they are included).

- **Department of Defense (DOD), Military Housing Complexes.** DOD collects energy consumption, square footage and cost data on all military housing in the United States, a useful but limited database. For this study, GSD compared only specific military bases located near the PHAs included in the study.

- **FHA.** Information is available on building type, number of bedrooms per unit, tenant demographics (for assisted housing), and certain other key characteristics but, as with most of the other sources, no consumption or square footage information is available, only costs.

Additionally, GSD attempted, but was not successful in obtaining, utility data directly from utility suppliers and local operators of multifamily housing in the four test markets. Local utility suppliers were found to have little information about housing characteristics and seldom know exactly what lies beyond the tank or the meter – they generally do not, for example, know how many units may be attached to the meter, the size of the building, the characteristics of the building, whether there is also office space, etc. Also, despite considerable effort, GSD was not able to obtain sufficient data from local private operators of multifamily housing in the four markets, an issue discussed at more length later in this chapter.

Agency Reports

Based on both the field work and the comparative analyses, GSD prepared reports on each agency. These reports included information on the following:

- A basic description of each agency, including the types of properties, systems, energy management and conservation practices, and potential energy conservation opportunities.

- A set of project data sheets. Each data sheet includes pertinent utility related information on each property, including name, address, unit count, bedroom configuration, type and capacity of mechanical equipment, metering configuration, and utility cost and consumption figures.

- Intra-agency cost and consumption charts. These charts compare costs and consumption between properties, grouped by building type (high-rise, low-rise, and walk-up).

- Benchmark cost comparisons with third-party data, where available. For each major building type, GSD plotted the average annual utility for the PHA's properties and compared that to the available third-party data.

FINDINGS AND OBSERVATIONS

This section presents the major findings and observations, based on the four test markets, of attempting to benchmark public housing utility funding to private norms and the limitations thereof.

1. **All of the PHA's visited were found to maintain very good data for both utility costs and consumption.** At each agency, staff had carefully collected and compiled the information on a property-by-property basis, a function of the existing funding system that requires this type of accounting to prepare the HUD 52722A and B subsidy forms. Unfortunately in most cases, the information was not tabulated and reviewed to identify excess use or to consider energy related priorities for maintenance or modernization spending.

   Once the information leaves the PHA, the system becomes less useful. While the information is collected on a property basis, the HUD forms call for numbers that are "rolled up" or combined for the entire authority. Additionally, the actual forms are never submitted to HUD headquarters, but remain on file in the various field offices.

   Thus, despite the considerable effort required to collect this information, it is presently used only for the narrow purpose of calculating HUD's utility subsidy contribution, and is seldom organized to support management decisions of the applicable properties. Even at the HUD headquarters level, there is little effort to utilize the information to understand problems (such as agencies reporting high consumption against norms) or to set policy.

2. **The facilities management practices observed at the PHAs in the sample ranged from fair to quite good.** Often the GSD team found knowledgeable maintenance staff, quality equipment, and in most cases, effective maintenance systems. In other cases, energy related maintenance practices such as filter changes and steam trap service needed improvement.

   - *Many energy savings improvements had been accomplished at the PHAs in the sample*. Many developments had upgraded windows, roofs and doors as part of their modernization program, and some agencies had taken advantage of incentive program opportunities involving local utility companies.

   - *No Authority visited had a fully developed utilities savings or energy conservation program*. Few of the agencies endeavored to manage utilities costs by reviewing and acting on the cost and consumption data, which they had already collected for their budgets. Instead, conservation efforts seemed to have occurred on an opportunity basis. Since most agencies had received more than twenty thousand dollars per unit in modernization funding over the past ten years, much updating has been done on items impacting utilities. Roofs have been replaced including better insulation, windows have been replaced with tighter and insulated products, and higher efficiency heating equipment has been installed. While these improvements have in fact reduced utilities costs, this savings seemed to have been incidental to the agency's capital replacement program, rather than as a result of a priority for, or balance with, conservation priorities.

- *Considerably more conservation can be done*. There remain multiple opportunities for utility savings. Often these are low cost and high payback items such as replacement of incandescent common area lighting with high efficiency fluorescents, or the replacement of showerheads and faucet aerators with low flow models.

3. **The Rolling base incentives did not appear to affect PHA actions.** None of the agencies examined had a current or ongoing process to reduce utility use or costs, or even to balance these priorities against other property management considerations or budget constraints. As a result, the sharing of savings allowed under the present formula was not an effective incentive. During the time of this study, the incentive formula increased to the current 75/25% split, but this was not observed to make a difference in agency behavior.

4. **It proved extremely difficult to obtain utility data from private operators in each locality.** Several strategies for collecting private housing data were attempted, but all had limited success. These included contacting property owners prior to the scheduled site survey, conducting interviews of property owners or managers during the site survey, and simply leaving questionnaires at the property to be completed and returned at the owner's convenience. On-site personnel were typically unwilling to allow the survey team to inspect the property, but were sometimes able to provide limited utility cost and consumption data. A brief survey form requesting information such as unit makeup, utility service arrangements, and utility cost data was left with the on-site manager when information could not be provided at the time of the visit. Furthermore, the majority of utilities (excluding water and sewer) were tenant-paid, leaving site managers with little utility information to provide. Despite this large effort, GSD obtained little data, and some of what was obtained was incomplete.

   Rather than a lack of cooperation, most of this problem seemed to stem from issues related to the owners' information systems. Most of the managers approached were not collecting consumption data, and even the compilation of costs alone would have required some special efforts with their reporting systems.

5. **Utility suppliers are not a likely source for a public housing benchmarking model.** Because these suppliers simply see the real estate as service or billing "points", they almost never have information regarding the buildings connected to the meters, or served by the tanks. Also, even where useful information may be available, confidentiality issues pose an additional obstacle.

6. **Existing databases are not sufficient to establish benchmark utility consumption levels.** The databases that are available do not provide adequate information to generate expected utility consumption and expense levels for public housing. The type of database needed would have wide geographic coverage, include utility consumption data as well as cost data, and contain property characteristics such as building type, construction type, square footage, and heating system type. Currently, no such database is available. The database with the most coverage, FHA, only

contains information on utility costs (not consumption) and lacks some important property characteristics helpful to developing a benchmarking model, such as square footage.

GSD found that the other existing data sources, as they are currently available, are also insufficient for this purpose. While the field collection of a sufficiently large sample would be expensive, time consuming, and would only provide one-time data, GSD believes that HUD could capture data on consumption for both the FHA and public housing portfolios at modest cost. If HUD also collected information on property characteristics, that data could be used to establish benchmark utility consumption levels.

7. **For the most part, public housing utility expenditures appeared to fall within the ranges suggested by the limited comparison data currently available.** Despite the limitations of the data (e.g. lack of consumption data, not able to adjust for square footage and heating system), GSD compared public housing property utility expenditures on a per unit basis. In contrast to a 1987 study that found energy consumption in public housing twice as expensive as that for comparable assisted housing, GSD did not find that the PHAs in the sample were especially inefficient.[62] Public housing units tend to be smaller than the comparables, which would suggest that expenditures would be lower, but some have older builder envelopes and heating systems, which would suggest that expenditures would be higher. The portfolio of public housing properties examined by GSD, while not representative of the national portfolio, appeared to have utilities expenditures close to the ranges suggested by other data sources, without adjusting for apartment size, heating system, or building envelope. Due to the lack of data, GSD was not able to make comparisons based on consumption data. The project level analysis of expenditures did, however, readily identify properties with above average utility expenditures within the PHA portfolio, which would be prime candidates for energy audits and energy conservation measures.

8. **The field research suggests ways to structure a benchmarking system.** Although any benchmarking system should be developed through a process of statistical testing and refinement, this study has provided guidance on some key items. First, it is clear that such a system should be based on consumption rather than cost. The advantage is that changes in rates, whether based on geography, chronology or market factors, introduce unnecessary variance. When rate issues are eliminated, the geographic size

[62] Study referenced is: Determinants of Measured Energy Consumption in Public Housing, *Kathleen M. Greely, Evan Mills, Charles A. Goldman, and Ronald L. Ritschard,* Energy Systems and Policy, Vol 12, pp 26. 1988. This difference in findings may be explained by both time factors and the nature of the selected samples. Clearly, much public housing has been upgraded since the date of the 1987 study. Additionally, the 1987 study utilized a sample heavily weighted with data from centrally heated properties in New York and New Jersey. Finally, the selected sample for this GSD study, while more representative of the range of developments in PHA portfolios, may have included agencies with above average management practices.

of a sample area may be increased to limits imposed by weather or climate, increasing the sample size for a given comparison. Second, consumption should be tabulated based on floor area rather than bedroom count if at all possible. Doing this not only eliminates variance due to apartment design, but also will permit comparisons to include the unsubsidized properties (with larger apartments) included in the FHA database or elsewhere. Beyond this, conventional statistical techniques may be used to establish how to classify properties (such as by building type, construction, and building size, while controlling for climate and weather).

9. **Opportunities for water savings appear significant.** While still emerging, there is greater information available now nationally on water consumption standards than for energy consumption. Also, as water costs have rapidly begun to increase, water conservation technology has improved. Based on observations in the field research stage of this project, GSD conducted additional research on water use and conservation. Three of the PHAs studied had properties that used much more water than industry standards; the fourth had no water consumption data available because the utility billing system utilized in that community is based on pipe size.

RECOMMENDATIONS

Established in 1976, the rolling base system for determining a PHA's utility funding has proved remarkably resilient. Its major advantages have been that it is easy to administer and that, in funding each PHA according to its own historical consumption levels, it treats PHAs equitably. It has been less successful, however, in encouraging energy conservation or in assuring appropriate levels of federal spending.[63] The challenge in 1975, as today, was establishing a system that benchmarks utility funding to consumption norms, taking into consideration building characteristics, climate, etc. Such information simply was not available at the time the rolling base system was implemented and/or would have been administratively burdensome to collect.

Primary Recommendation

Based on the results of this feasibility study of benchmarking public housing utility funding to private norms in four test markets, GSD finds that the current rolling base system is the most appropriate system for determining public housing utility funding at the present time. There are no databases on utility costs in multifamily housing that could be used in their current form to establish a sufficiently accurate and equitable benchmark funding system and it would be infeasible to attempt to collect new market-specific data. While not available now, however, HUD should move towards a benchmarking approach over the next several years, requiring modest effort. That effort could begin with the collection of consumption data on public housing properties but then be expanded to include properties whose mortgages are insured by the Federal Housing

[63] For a prescient discussion of the trade-offs in establishing the rolling base system, see Robert Sadacca and Joan DeWitt, "Energy Consumption in Public Housing: Current Practice," working paper 223-1, The Urban Institute, July 1975.

Administration (FHA). Developing these two respective databases would be rather uncomplicated.

- **Public Housing**. Most of the information needed to develop such a system is already being collected by local housing authorities and submitted to HUD. In order to establish its rolling base, and therefore to calculate its annual subsidy, a PHA must collect and submit annual data on both consumption and costs. Once reviewed by HUD to calculate a PHA's utility subsidy, this information is not now entered into any regional or national database nor is the data analyzed for consumption patterns. It would require little additional effort to require PHAs (1) to report utility data on a property-by-property basis (PHAs report only on a consolidated basis) and (2) to submit this information electronically, allowing for the development of a database on consumption and costs by building type, heating system, climatic region, etc.

- **FHA-insured housing**. Through the FHA, HUD insures approximately 1.0 million units of federally assisted (subsidized) housing and another 0.5 million units of unassisted housing. HUD requires electronic submission of year-end financial statements from owners of these properties. Requiring these owners also to report utility consumption would not be unreasonably burdensome.

A benchmarking system could take a number of forms. At one end of the continuum, it could be used simply to identify those properties with the highest per-unit consumption patterns ("outliers"), which might then be the focus of targeted intervention. An intermediate use could be to score PHA's on their "energy efficiencies", with an improved and more meaningful indicator in the PHAS assessment system. At the other end of the continuum, a benchmarking system could be used to establish funding levels. The eventual shape of this system will depend on the robustness of the database. But the current system, or lack thereof, seems less than desirable since there is no analysis currently being conducted of public housing consumption patterns. HUD has no knowledge of what different properties consume for utilities or how those figures would compare with multifamily industry standards.

By way of comparison, the Department of Defense (DOD) has required since 1985 that all military housing complexes and other facilities electronically report utility consumption. DOD then establishes energy savings goals and makes peer comparisons. These goals have become part of the performance objectives for the managers of each facility. Overall this effort has resulted in substantial reductions in energy costs. Between 1985 and 2001, the Department of the Army reduced consumption by over 27%[64] and the Navy reduced its use for non-institutional buildings by nearly 25%.[65] DOD's success offers encouragement that public housing could benefit from a similar approach.

[64] E-mail message to Jason Vass, PE, to Mr. Bruce Murphy, Energy Coordinator, U.S. Army Logistics Integration Agency, March 13, 2002.
[65] U.S. Department of the Navy, *Annual Energy Management Report*, FY 2001.

As part of the work conducted in the four test markets, GSD gathered historical consumption data, by property, for each of the subject PHAs and then charted that data based on building type and utility (gas, electric, water, etc.). These intra-agency analyses were quite revealing and can serve as powerful management tools. Only one of the agencies, however, tracked and monitored consumption in any similar way. Even without private market comparisons, PHAs could greatly benefit from such intra-agency tracking of consumption patterns to identify outliers and trends.

GSD recognizes that it may be several years for HUD both to develop the technology to track property-specific consumption in public housing and then to apply that information to any benchmarking system. Once the data collection system has been established, it might make sense simply to publish the data for the first couple years before PHAs are either scored or funded using this system.

Secondary Recommendations

- **75/25 Sharing Plan.** Public housing should further evaluate the effectiveness of current incentives. Based on the field observations, even the new 75/25 consumption sharing provisions of the rolling-base seem an inadequate inducement, largely because it diminishes quickly over time.

- **Utility Regulations.** The existing regulations regarding tenant paid utilities[66] and energy audits[67] are well considered and no less valuable today than when originally promulgated. This study often found these requirements unobserved. Although there may be some room to update and refine these regulations, the continued "benign neglect" of these requirements is poor policy.

- **Public Housing Reinvestment Initiative.** In the 2004 Budget, the Administration proposes to allow the conversion of public housing to development-based Section 8 subsidies as a means of assisting PHAs to finance capital improvements. Any acceleration of modernization work should positively affect overall consumption. Even more, such occasions should be seen as opportunities to convert from project-paid to tenant-paid utilities.

  Absent the passage of something like the PHRI, HUD should consider a special financing program for "energy-hog" projects. High consumption projects that are expensive to fix and/or have a relatively long payback are not attractive under the existing performance contracting program, but are still worth doing because they would substantially reduce energy consumption. HUD should target resources to such projects through a competitive grant program with clearly defined criteria targeted to these projects.

- **Energy Performance Contracting**. PHAs normally accomplish the work handled by performance contractors, such as obtaining energy audits, working

[66] 24 CFR 965-401
[67] 24 CFR 965-302

with engineers and installing insulation and more efficient heating equipment. Because of this GSD recommends that PHAs should be able to carry out the program on their own. This means that HUD should allow PHAs to use the same incentives available under performance contracting (freezing the base or getting a subsidy add-on) for a savings period of up to twelve years, which would allow them to incur debt to finance the improvements from the savings.

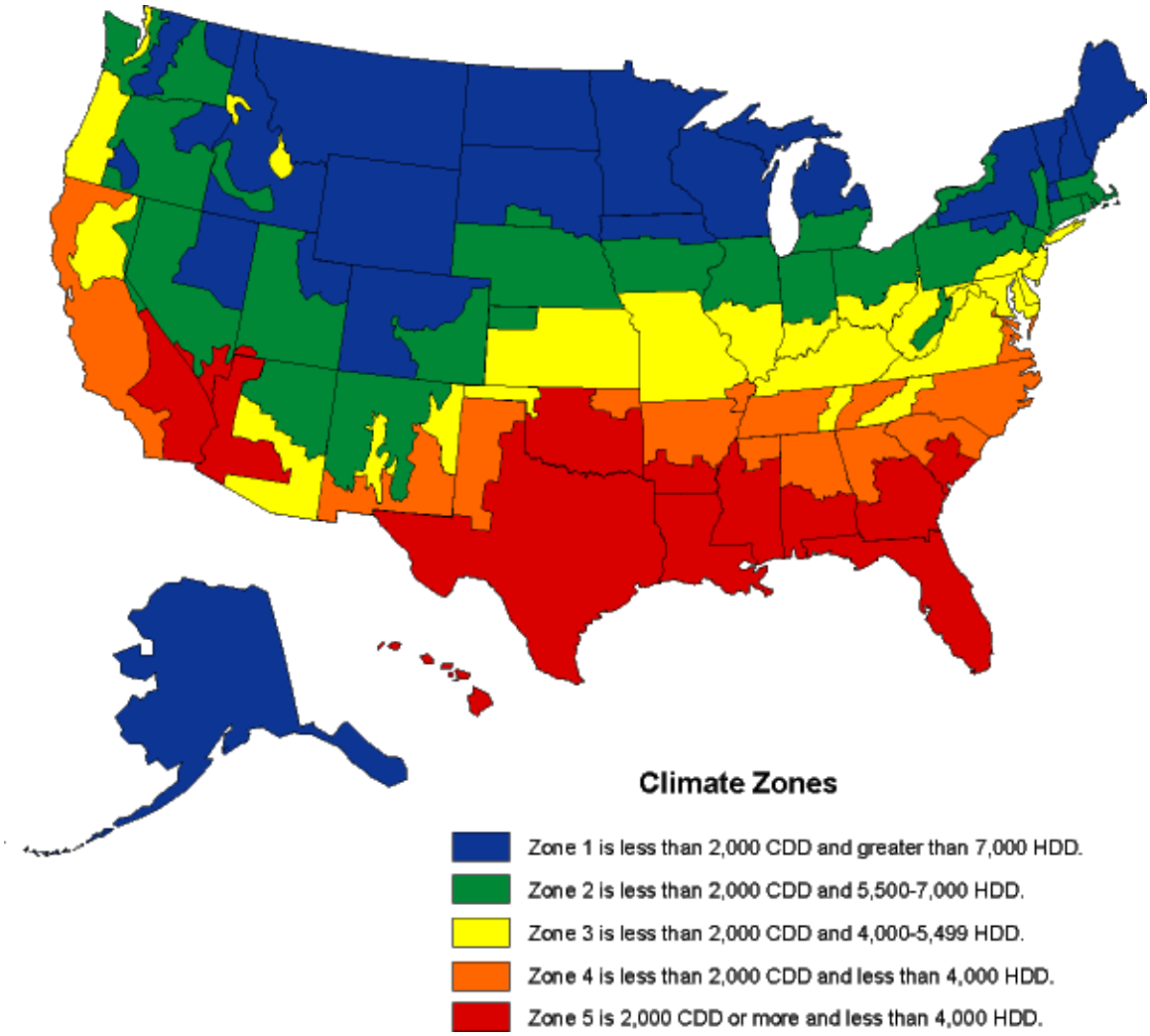
A second issue regards independence of analysis. The savings computations for such a program are often complex and sophisticated, and span issues of both engineering and economics. Although HUD requires PHAs to utilize professional engineers when they change windows, many performance contracts have been negotiated with no technical support. This contrasts with the model used by the Defense Department, as well as many commercial and institutional owners, where experienced engineers evaluate the venture and represent the facility owner. Whether or not an outside performance contractor is utilized, the PHA should be required to utilize such independent professional engineering support before entering a performance contract or incurring its own debt for conservation.

- **Water Conservation.** Public housing appears to have lagged behind the curve in water conservation measures. There are several reasons for this. First, water remained inexpensive until many years after energy costs had risen. Second, water rates have risen on a local or regional basis and were never thought of as a national crisis.

  Nevertheless, water has risen to be a major cost factor, often representing a third of the total utilities cost for the PHAs considered in this study. Moreover, within a given PHA, there are some properties that use twice as much water as others and double or triple the amount projected from EPA guidelines. Further, unlike energy, water issues are easier to understand and easier for a PHA to address.

  Based on the data in the field study GSD believes that water conservation efforts offer large savings for the public housing program and should receive greater attention.

Figure 6.1: Climate Zones



CHAPTER 7
Program Reforms

The current public housing operating funding system calculates and awards PHAs their operating funds on an agency or portfolio basis. GSD's proposed operating cost model, in contrast, generates property level estimates of costs. Although these property level estimates can be rolled up into an agency level aggregate, GSD does not recommend perpetuating the current portfolio approach to PHA funding, management, and oversight. The work under this cost study strongly suggests the need for major program reforms.

PHA REFORMS

GSD interacted, in varying degrees, with several hundred PHAs during the course of this study, observing that:

- PHAs maintain much more centralized property management systems, with quite limited authority and responsibility assigned to on-site management personnel. Whereas public housing operates as a centralized enterprise, virtually every other owner and manager of multifamily real estate in this nation, for-profit or non-profit, finds that a decentralized operating style is both more efficient and more effective.

- PHAs focus much more on process compliance and much less on the actual performance of the real estate.

- PHAs make little use of standardized real estate industry metrics to monitor property performance (property-specific operating expense ratios, economic vacancies, etc.).

While there are notable exceptions, these organizational tendencies are strikingly similar across PHAs and appear to be shaped by the following factors:

- **Portfolio-wide funding and financial reporting**. As noted earlier, PHAs are awarded their funds at an agency level. In turn, PHAs have complete freedom to allocate resources between properties as well as between overhead and direct cost centers. There is no restriction on the amount of overhead that can be charged to the program; indeed, there is no separate accounting of overhead costs (or what might be called the management fee in conventional housing). The public housing chart of accounts does not distinguish between direct and indirect salaries and other administrative expenses. Moreover, the only financial report required of PHAs is a year-end portfolio report – there is no required reporting on a property basis. Not surprisingly, few PHAs maintain anything equivalent to the project-

based budgeting and accounting systems that are routine in private housing.[68] These centralized funding and accounting arrangements serve to encourage centralized property management systems.

- **Portfolio-wide performance evaluation**. HUD's performance evaluation system of public housing – the Public Housing Assessment System, or PHAS – is also a portfolio-wide assessment tool. This assessment system reinforces the notion that it is the organization that is important and not the financial and physical health of each asset.

- **Programmatic isolation**. Differences in regulations (although observed to have minimal overall cost impacts) serve to make public housing appear "different" to the larger multifamily apartment management industry and keeps public housing separate. Public housing has its own trade associations with its own training, certification, and professional development venues. Public housing administrators have little knowledge of how the rest of the apartment community manages real estate (see comments to field testing in Chapter 5). In professional development programs, conventional housing managers are trained to manage within the context of a property's operating budget; public housing training programs rarely include budget training because public housing managers almost never have significant budget authority. Similarly, while executive training in conventional housing is heavily concentrated on the fundamentals of real estate finance, transactions, and portfolio management, executive training in public housing focuses more on managing the external political environment and complying with public housing-specific procedures (process). The perception that public housing is "different" and not primarily a "real estate" enterprise is reinforced within HUD, where there is both an Office of Public Housing and an Office of Housing (which oversees assisted housing).

- **Public ownership and management**. Public entities are, by nature, risk-adverse, valuing control over efficiency and responsiveness. Without an incentive structure or regulatory system directing them otherwise, public agencies will seek to centralize sensitive or complex functions to avoid fraud, abuse, or simple error. In public housing, this gets played out by:

  — centralizing the work order intake process ("to assure that work orders are properly recorded"),

  — centralizing the procurement of goods and services ("to assure that public funds are spent properly"),

[68] For more than 10 years, PHAs have been required, as a result of legislation, to maintain project-based accounting systems. However, rules implementing this requirement allow PHAs to define "cost centers." Hence, a PHA may define a central maintenance vacancy turnaround crew or a central warehouse as a "cost center" and there is no requirement that cost centers be allocated to a property, negating, as best understood, the intent of the legislation. See 24 CFR 990 Subpart C.

— centralizing the collection of rents ("to assure that funds are not misappropriated"),

— centralizing the annual inspection of units ("for quality control purposes"),

— centralizing the management of the waiting list ("to avoid preferential treatment"), or even

— centralizing the supervision of routine maintenance ("because the housing managers wouldn't have the skill to oversee the physical plant").

Each of these instincts, however, runs counter to successful property management. Moreover, these belief systems become self-reinforcing. Over time, the public housing manager's responsibilities become so stripped of what is meaningful in housing management that, as skills atrophy, the rationale to centralize becomes stronger ("the managers don't have the talent/skill to handle important tasks").

- **A lack of financial incentives**. As noted by a number of PHA directors, there is no incentive in the current system (and no requirement) to operate in a more conventional property management mode. In fact, as structures have developed to support current organizational arrangements, change invites "noise" that would rather be avoided.

Not surprisingly, GSD found centralized overhead costs in public housing that are routinely two and three times what is common in private industry. In essence, these centralized structures are both sluggish and more costly.[69]

It is quite revealing that PHAs that own other affordable housing demonstrate a greater tendency to manage these non-public housing properties in a more decentralized context and to maintain more advanced property-based accounting systems. Many of these agencies have also chosen to contract for the management of their non-public housing portfolios.[70] The experience of these agencies suggests both that the requirements and expectations of the funding/financing agencies greatly affects organization design and that PHAs can, in fact, respond to these demands, if required. In other words, if HUD changes how it oversees public housing, PHAs will change.

GSD did not include any adjustment in the cost model for centralized management since such action would not be supportive of best practices. It is clear, however, that major

[69] On the one hand, GSD's model suggests that PHAs should receive modestly higher funding levels. On the other hand, GSD has observed that typical PHA organizational arrangements are more costly. The two are not inconsistent. Relative to the experience of FHA properties, and because of public housing's characteristics, current funding levels for public housing should be increased. Public housing organizational arrangements, however, limit the effective use of those funds.

[70] Under these contracted arrangements, the private managers are also more likely to provide wages and benefits that are more in keeping with true prevailing rates. This experience runs counter to the argument, advanced by many agencies, that, as public bodies, they are "forced" to pay higher wages (see Chapter 4).

reform is needed. Paramount would be a system of development-based funding, financial reporting, and management. Towards that end, provided below are a series of interventions or strategies, listed in increasing order of magnitude, that would encourage or require PHAs to move closer to the management models found in conventional real estate.

- *Require PHAs to report their operating costs on a property basis, including their overhead costs (management fee), and make that data publicly available.* This first-level intervention would not require PHAs to make change in their organizational patterns but simply require them to self-report their operating costs on a property basis. The expectation is that, if that data were published, certain PHAs would be motivated to compete (on costs) relative to their peers within both public and assisted housing, creating pressure for others to change.

- *Limit or cap the overhead or management fee that PHAs can charge.* Currently, there is no limit on the overhead costs a PHA may incur; indeed, there is no separate reporting or accounting of overhead costs within the public housing system. Rather than simply require PHAs to report their costs, including those costs normally associated with a management fee, this second level intervention would establish accepted ranges for overhead expenses.

- *Limit or cap what, in conventional housing, would be termed identity-of-interest contracting but in public housing would include either central maintenance or force-account labor.* Similar to the treatment of overhead or management fees, public housing rules place no limits on the extent of centralized maintenance services. In assisted housing, the management company must demonstrate that any "identity-of-interest" contracting is cost-effective. Rather than simply allowing PHAs to establish centralized maintenance programs, the rules could require similar demonstrations (there could be a threshold allowance for very small agencies, scattered sites, and other reasonable exceptions).

- *Eliminate the flexibility to use Capital Funds for operations, except with HUD approval.* Substantial portions of the Capital Fund proceeds are now used to fund operating expenses, the authority for which was expanded under QHWRA. PHAs may spend up to 20% of the Capital Fund on "Management Improvements" (new computer systems, staff training, various resident initiatives, etc.) and may also transfer 10% of the Capital Fund to the operating budget. Neither of these actions requires HUD approval. A fairly calculated and funded operating fund formula should establish the basis for eliminating this practice, which would assure that needed capital funds are used for capital purposes.

- *Change the concept of the Annual Plan to a property-based budgeting and planning process.* The Annual Plan is intended to make public housing more business-like. While private operators of assisted housing are not required to prepare an Annual Plan in the public housing format, they all prepare annual property budgets, which are real planning documents. For the residents of any particular public housing property, information regarding a property's proposed

operating budget would be far more helpful than much of the information that is found in the Annual Plan.

- *Change PHAS to a property-based monitoring system, focused on standard industry metrics.* There are two levels of changes that would be helpful here. First, HUD could use indicators that are more in keeping with the oversight of other housing programs. For example, in HUD's assisted housing programs, owners are not asked to report work order turnaround times. Rather, it is the REAC physical inspection and the review of the financial statements, along with an on-site management review, that are the primary tools used to measure performance. HUD can replace the focus on process compliance with good property-based financials and performance measures. The second level of change is one that would convert PHAS more to a property-based reporting system so that, year-in and year-out, HUD is focusing on the performance of each property (there is no property-by-property analysis currently undertaken by HUD of public housing, a point discussed in more detail under HUD Management Reforms).

- *Convert to a development-based subsidy system that allows for debt-financing of modernization needs.* Growing out of the main research on this project, GSD previously examined the need to establish a financing program that would allow PHAs to borrow, on a property by property basis, the funds necessary to make each asset physically sound, substantially equal to the Administration's Public Housing Reinvestment Initiative.[71] While the major emphasis behind this program would be to address the large backlog of capital needs in public housing, allowing for more efficient housing to manage, it would have the added benefit of introducing other actors into the picture (those holding debt) who will expect property-based staffing, budgeting, accounting and the rest of the elements of a more decentralized, property-centric system of property management. In short, it would require PHAs to move closer to the real estate model used in the rest of the industry. Indeed, it would be the surest and quickest means of moving public housing into the mainstream.

HUD MANAGEMENT REFORMS

A shift in focus to property-based management will require a profound change in how HUD manages and oversees public housing.

Assume that a developer of affordable housing has built ten properties under the low-income housing tax credit program, financed with tax-exempt bonds issued by the state housing finance agency, or HFA. The HFA also issued the tax credits. In terms of oversight, for each property the developer must submit to the HFA annual (or more frequent) financial statements. The developer may also be required to submit annual (or more frequent) property management performance reports on such key indicators as rent

[71] See, *Report on Debt Financing of Public Housing Capital Improvements, November 1, 2001.*

collections or occupancy levels. Supplementing these submissions, the HFA will typically conduct an on-site annual inspection/management review of each property to assess both general upkeep and program compliance (resident eligibility, number of families assisted, methods of determining rents, etc.). Finally, the developer/owner will be required to make monthly deposits into a replacement reserve account and must receive approval from the HFA for any withdrawals.

The person performing the above tasks for the HFA will typically be called an asset manager. Depending on the performance of each property, and the number of units, an asset manager might be assigned between 25-40 properties. By focusing on early detection and intervention, the goal is to catch problems before they become costly. Indication of a drop in occupancy levels or an increase in accounts payables might, for example, trigger a site visit.

This basic asset management structure works particularly well, and can be achieved with reasonable resources, when (1) there are high standards and expectations of owners, (2) those standards/expectations are well-communicated, and (3) enforcement of those standards is swift and certain. Under these circumstances, compliance is high, and monitoring costs are low, since owners know that there are real consequences for poor performance, including replacement of the owner or management company. Hence, the vast majority of properties in any given portfolio will be steady performers.

Contrast the above to the "system" that exists today in public housing. In terms of regular performance reporting, a PHA must submit each year to HUD (1) a financial data schedule ("financials") on the organization as an entity (the PHA) but not on each property, which HUD will review to measure overall liquidity and, nominally, expense ratios as compared with "peer" PHAs, and (2) an agency-wide report showing performance on such indicators as work order response times, timeliness of expenditure of modernization funds, and unit turnaround times. In turn HUD will conduct an annual physical inspection of each property (less frequently for high-scoring agencies) and also a resident satisfaction survey. There are subtle but important differences in these two systems of asset management. In public housing,

- the focus is on the organization and not the properties,
- there is no analysis of the financial performance of individual properties, and
- there is no evaluation of a property's physical appearance, curb appeal, or general presentation, a fundamental construct in property management.

In effect, HUD has no "asset managers" who track, year-in and year-out, the performance of individual public housing properties. In public housing, HUD evaluates organizations, not properties, and this organizational assessment system does a poor job of assuring high levels of performance, of detecting problems, or of intervening effectively when problems occur.

A PHA could comprehensively modernize a property and, as a result of poor management, need to replace cabinets a few years later. Not only would no red flags get raised but, in fact, as long as the work is completed quickly, the PHA may actually be

rewarded under PHAS for timeliness of fund obligation. (In the HFA example, the owner would need to get approval from the asset manager for use of replacement reserves to replace the cabinets, at which time red flags **would** be raised.) Similarly, there is no one from HUD watching to see why this property may still be having occupancy problems or rent arrears or high expense levels. Indeed, there is no one charged with visiting the property one, two, or three years later to see how well the agency has preserved its investment. The inspector conducting the annual REAC inspection, who is the only person within the HUD system who may actually visit a public housing property during the course of a year, is not only unaware that the property was recently modernized but also unconcerned. The property may receive a marginally passing physical score when it should have received, as a result of its recent modernization, an outstanding physical score. Further, it is unlikely that the REAC physical inspector will be the same person the next year and, thus, there is no attempt to measure progress – the inspection is purely a snapshot in time.

HUD simply is not organized effectively to monitor the on-going performance of public housing properties. But it is not a problem of staffing levels. A private asset management organization, whether an HFA or a large investor with an asset management division, might require on the order of 270-330 "asset managers" – the core of any asset management system – to oversee 10,000-12,000 properties (many of public housing's smaller properties might be combined into more sensible groupings). Given public housing's greater physical needs, and given a larger role of the asset manager in compliance monitoring, somewhat higher levels would be dictated, but still within amounts that are attainable.

HUD's challenge over the next couple years, it seems, is how to transform itself from having an institutional focus on the performance of its public housing agencies to a focus on the fiscal, physical, and management performance of the 14,000 distinct properties that make up the public housing inventory. As is the case with public housing property management, however, these oversight functions do not necessarily need to be performed in-house since a commercial market already exists to perform these tasks.