Risk-Based Monitoring
of CPD Formula Grants

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I. Executive Summary

This report presents analysis conducted by the U.S. Department of Housing and Urban Development's (HUD's) Office of Policy Development and Research (PD&R) to determine the effectiveness of the risk analysis process used by HUD's Office of Community Planning and Development (CPD). Risk analysis is conducted on recipients of grants from CPD in order to identify those programs most susceptible to waste, fraud, abuse, or mismanagement. CPD staff then monitor the programs identified as high risk as well as a sample of other lower risk programs. This report focuses on risk analysis and monitoring of CPD's four formula grants: the Community Development Block Grant (CDBG), HOME Investment Partnerships Program (HOME), Emergency Shelter Grants (ESG), and Housing Opportunities for Persons with AIDS (HOPWA).

We find that, in the CDBG and HOME programs, grantees that score high in the risk analysis process are significantly more likely to have "findings" (statutory or regulatory violations) than those with low risk scores. In the ESG and HOPWA programs, the evidence is inconclusive. This suggests that, at least for CDBG and HOME, the risk analysis process is accurately identifying "risk." Yet there is room for improvement, particularly in two respects. First, with the abundance of data available to HUD, it would be reasonable to expect a higher degree of success. Half of low- and medium-risk grantees still have findings, and a third of "high risk" grantees have none. Second, the risk analysis process is a drain on the scarce time and resources of CPD field staff. Revisions to the process could provide savings to the Department in terms of staff time. As CPD receives new responsibilities, including the Neighborhood Stabilization Program (NSP), supplemental funding through CDBG and HOME, and the new Homelessness Prevention and Rapid Re-Housing Program (HPRP), it is critical that overarching tasks like risk analysis and monitoring are effective and efficient.

To identify potential improvements, this report examines the components of the risk analysis process. Currently, many of the "subfactors" that make up the risk analysis process have complicated, multifaceted definitions; furthermore, they often have no statistical relationship with the number of findings a program will have. In the HOME program, CPD staff rate grantees on 21 subfactors to determine the risk score; yet only four of these subfactors actually have a statistically significant relationship with findings. The CDBG risk analysis process includes 17 subfactors, only five of which are statistically significant predictors of findings. We also find that there is significant variation across field offices in the number of findings issued, after accounting for all other variables in the model.

To save staff time and maintain a standardized system for assessing risk, CPD could make the following five adjustments to the risk analysis process:

- Use fewer subfactors, which simply and directly estimate staff capacity, program complexity, and past performance.

- Develop a subfactor to explicitly incorporate the judgment of the evaluator and/or CPD Management Representative.

- Ensure strict adherence to limited exception criteria.

- Randomly sample low- and medium-risk grantees for monitoring.

- Increase reliance on remote monitoring for low- and medium-risk grantees.

The greatest benefit of these changes would be a reduction in the time and resources required for risk analysis and monitoring, but there are two very valuable additional benefits. First, including an element of randomness in the process, specifically for lower risk grantees, should improve performance by maintaining a constant threat of monitoring. Grantees must be prepared to be monitored each year. Second, these changes will be highly conducive to further testing. Random selection of a subset of the grantees to be monitored will allow for extremely rigorous statistical analysis. In addition, the recommended adjustments to the subfactors will make it easier to tweak the subfactor weightings in the future.

Many of these recommendations represent substantial changes to the way CPD currently does risk analysis and monitoring. For newly created CPD programs such as NSP and HPRP, some of these characteristics could immediately form the foundation of the risk analysis and monitoring guidelines that must be developed. For CDBG, ESG, HOME, and HOPWA, however, it may be necessary to gradually adjust the process rather than overhauling it all at once. It may even be possible and desirable to test the new model; for example, the many small competitive grant programs run by CPD, which require monitoring resources disproportionate to their size, could be used in a demonstration. PD&R looks forward to working with CPD staff to continue to improve this important administrative practice.

II. Introduction

A. Background of CPD Risk-Based Monitoring

To meet the requirements of the Federal Managers' Financial Integrity Act of 1982, Office of Management and Budget (OMB) Circular A-123, and OMB Circular A-127, the U.S. Department of Housing and Urban Development (HUD) has established a system of management controls and set forth these policies in Handbook 1840.1, *Departmental Management Control Program*. The purpose of the Management Control Program is to protect against fraud, waste, abuse and mismanagement in HUD's programs. Chapter 2 of the *Departmental Management Control Program* handbook provides guidance for defining risk and determining how susceptible HUD programs are to fraud, waste, abuse, and mismanagement. For HUD's Office of Community Planning and Development (CPD) grant programs, this risk is directly dependent on the risk posed by grantees, so CPD's Management Control Program consists primarily of risk analysis and monitoring of grantees. Chapter 7 of the *Departmental Management Control Program* handbook provides guidance on risk-based monitoring and states that *all* monitoring should incorporate risk-based concepts and strategies.

CPD's risk analysis process is a highly structured and quantitative system for rating and ranking grantees and their programs, in order to identify those that pose the greatest risk to the integrity of CPD's programs. The risk analysis process has two important benefits. First, it ensures that CPD grantees are treated consistently across HUD's 43 CPD field offices. Second, it enables CPD to allocate scarce monitoring and technical assistance resources efficiently and effectively. This second point is critical. According to a report published by the Government Accountability Office (GAO), from 1993 to 2006, CPD staff decreased by 20 percent while CPD responsibilities increased substantially.[1] Over the same time period, the Community Development Block Grant (CDBG) program experienced a 27 percent increase in the number of entitlement communities, and funding tripled for the Housing Opportunities for Persons With AIDS (HOPWA) and Emergency Shelter Grants (ESG) programs.[2] In some ways, these trends have continued since 2006, leading to an even larger gap between resources and responsibilities. In the same report, GAO also noted that 39 percent of CPD field office staff would be eligible to retire by February 2009. That very month—February 2009—saw the passage of the American Reinvestment and Recovery Act,

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[1] "Community Development Block Grants; Program Offers Recipients Flexibility but Oversight Can Be Improved." July 2006. (http://www.gao.gov/new.items/d06732.pdf).

[2] http://www.hud.gov/offices/cpd/homeless/budget/esghistory.pdf.

which channels $6.75 billion through CPD programs. As CPD's responsibilities swell, its resources are increasingly strained.

It is more and more important that CPD's risk analysis and monitoring system is streamlined, efficient, and effective. A streamlined process reduces redundancy and avoids unnecessary complexity. An efficient process reduces the amount of time required by CPD staff to accomplish a set amount of work. An effective process ensures that the work being done is accomplishing its ultimate goals. Applied to risk analysis, this means a process that is simple and logical, can be done quickly and easily by CPD staff, and successfully identifies and targets resources to grantees that pose the greatest risk to HUD. The *Management Control Program* handbook stipulates that the risk-based monitoring strategy should be periodically evaluated to determine its effectiveness and whether modifications should be made to better achieve objectives. That directive is the impetus for this study.

The purpose of the CPD risk analysis process is to identify programs that pose the greatest risk to the integrity of CPD's programs, *so that a greater share of monitoring resources can be used to mitigate that risk*. The primary objective of the study is to use statistical analysis to determine how *effectively* CPD's risk analysis process targets monitoring resources to grantees that pose the greatest risk to HUD. The report will also identify opportunities to make the process more streamlined and efficient.

B. Extant Research

The concept of risk has been thoroughly studied by both academics and practitioners, but published research tends to be primarily in the fields of finance and medicine—the risk of a financial instrument defaulting, or the risk of a negative health outcome. These studies are relevant to the choice of statistical models; however, the types of risks differ so extensively from risk in a federal government grant program that this published research offers little guidance.

In the federal government, GAO is the primary watchdog for financial management. As noted previously, GAO has specifically studied CPD's risk-based monitoring process. Given the federal government's widespread use of grants—to states and local governments as well as non-governmental entities—the GAO has published an abundance of material on grants management and mitigating risk. However, it appears that the GAO has never published a rigorous statistical analysis of a federal agency's risk-based grants monitoring strategy, such as that which is presented in this report. The most relevant published report is a review of the Federal Motor Carrier

Safety Administration's (FMCSA's) program for reducing the number of crashes involving large trucks and buses that operate in interstate commerce.[3] FMCSA uses a data-driven analytical model called SafeStat to identify carriers that pose high crash risks. SafeStat creates a risk score using a formula that weights certain vehicle safety related data elements. SafeStat is similar in many respects to CPD's risk analysis process but relies more on data and less on subjective judgment. The GAO report used a negative binomial regression to conduct a parallel risk analysis and found that, over an 18-month followup period, the GAO model was more successful than SafeStat in identifying carriers that pose the greatest crash risk. The report recommended that FMCSA adopt a similar regression-based risk model.

C. Overview of Study Methodology

Several aspects of the CPD risk analysis and monitoring process make it highly conducive to statistical evaluation.

- First, the process includes a rating system that results in scores for each program and each grantee on a series of "subfactors." These subfactors work fairly well as independent variables that one would expect to contribute to a program's riskiness.

- Second, all instances of monitoring have a documented outcome: a finding, a concern, or neither. A finding can only be issued for a violation of a "statutory, regulatory or program requirement," which makes it more significant and more clearly defined than a concern. Although they are not perfectly indicative of "fraud, waste, abuse and mismanagement," findings work fairly well as a dependent variable that proxies risk.

- Third, both "high-risk" and "low-risk" programs (as determined by the risk analysis process) are monitored, allowing for comparison of the two groups. The extent to which "high-risk" programs have more findings than "low-risk" programs will indicate how effectively the risk analysis process identifies programs that actually are high risk.

- Finally, since 2003, all of this information has been systematically collected and stored in CPD's Grants Management Process (GMP) database.

Each year CPD issues a Notice that establishes the rating system to be used in that year's risk analysis process, and any other changes to the process. From 2005 to 2007, the process remained largely unchanged,

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[3] "Motor Carrier Safety; A Statistical Approach Will Better Identify Commercial Carriers That Pose High Crash Risks Than Does the Current Federal Approach." June 2007. (http://www.gao.gov/new.items/d07585.pdf).

thereby allowing those years to be combined for this study.[4] Although risk analysis and monitoring is conducted for almost all CPD grant programs (competitive and formula), this study focuses solely on CPD's four formula grant programs—CDBG, HOME Investment Partnerships Program (HOME), HOPWA, and ESG.[5] In theory, risk should manifest itself differently in each of these programs, so it would not be valid to use the same independent variables to predict findings for different programs. It is therefore highly appropriate that the existing risk analysis criteria are slightly different for each program. Because of this, each program will be modeled, analyzed, and presented separately. However, the basic methodology will be consistent.

As noted previously, the risk score subfactors serve as independent variables and findings serve as the dependent variable. The derivation and manipulation of these variables is described more thoroughly in Sections III and V of this report. The study uses two statistical techniques for to estimate the relevance of each subfactor. First is a simple bivariate correlation analysis, which examines the relationship between the dependent variable and each independent variable one at a time. Then a more thorough multivariate model is developed to account for interrelationships between independent variables. These techniques are used to determine the overall effectiveness of the risk analysis process and the effectiveness of each subfactor used in the process.

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[4] Changes primarily consisted of increasing or decreasing the score assigned to a particular subfactor.

[5] CPD's competitive grants go to non-governmental entities, which makes them much more difficult to match across the various GMP data elements. Nonetheless, because of the nature of the competitive grants (small dollar amounts but a very large number of grantees), risk analysis is critical. Further study of the CPD competitive grants risk analysis system is warranted.

III. Process

A. Annual Risk Analysis Procedure

This section presents the risk analysis process in a step-by-step manner to show how risk scores are calculated, and how that process leads to monitoring and findings.

Each year, CPD issues a Notice on the subject of Risk Analyses for Monitoring CPD Grant Programs.[6] This Notice provides a consistent methodology for conducting risk analyses, and sets priorities that will guide the process of determining which grant recipients should be monitored. All grantees with open grants must be reviewed, with a separate risk score assigned for each program they participate in. For example, the city of Boston will receive a separate score for CDBG, HOME, HOPWA, and ESG because it participates in all four formula grant programs. The review is conducted by a CPD staff member (CPD Rep) at the field office for the region in which the grantee operates. The CPD Rep is advised to use a variety of information sources to conduct his or her analysis, including:

- Integrated Disbursement and Information System (IDIS),

- Consolidated Annual Performance and Evaluation Reports (CAPERS),

- Annual Performance Reports (APRs),

- Prior monitoring visits,

- Audits, and

- Citizen complaints.

The annual Risk Analysis Notice also includes a series of attachments that constitute the risk analysis scoring rubric. There are five of these worksheets: one each for CDBG, HOME, HOPWA, ESG, and Competitive Grants. The worksheets are broken down into five factors (except for CDBG, which uses four factors). These factors are general themes, such as Financial and Management. Each factor is broken into the subfactors against which the grantee is actually scored, and which serve as the "red flags" that the *Departmental Management Control Program* handbook recommends. These red flags are the criteria for determining risk exposure to the Department, the likelihood that a program participant is out of compliance with program requirements, or that the participant has performed unacceptably.

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[6] For fiscal year (FY) 2008, Notice CPD-07-07; for FY 2007, Notice CPD-06-10; for FY 2006, Notice CPD-05-08; for FY 2005, Notice CPD 04-12.

For each subfactor, the CPD Rep chooses the level of risk (referred to as "risk definition" in the worksheet) that most accurately matches the grantee. The worksheet includes an explanation accompanying each risk level that is intended to guide the CPD Rep in choosing the appropriate category. Usually there are three options, corresponding to low, medium, and high levels of risk.[7] The CPD Rep must choose one risk level for each subfactor, using only the options provided. The excerpt in Figure 1, from the HOME risk analysis worksheet, illustrates the subfactor Grant Amount within the Financial factor, showing the criteria provided for high, medium, and low risk.

Although the subfactor in Figure 1 is relatively simple and straightforward, others are more complex. Figure 2 shows the Meeting National Objectives subfactor, within the Services factor for CDBG. Appendix G includes a complete list of subfactors and their definitions.

For each subfactor, the CPD Rep must determine which category the grantee falls into and assign the corresponding score. The risk levels and scores are not continuous, and only the listed options may be chosen. On the excerpt pasted as Figure 1, the CPD Rep cannot rate the grantee as "medium-high risk" and give a score of 4. The entire worksheet includes a total of 100 points, meaning that a grantee that is high risk on every subfactor for a particular program would get a risk score of 100 for that program. The lowest possible score is 16 for HOME, 17 for CDBG and HOPWA, and 18 for ESG.

Figure 1. **Excerpt From HOME Risk Analysis Worksheet**

Factor 1—Financial	Risk Definition	Risk Score	Evaluator's Rating	Evaluator's Comments
A. Grant Amount				
i. The Participating Jurisdiction's (PJ) grant amount for the most recently completed program year falls within the top quartile of all HOME funded communities within the Office's jurisdiction for the same program year.	High	5		
ii. The PJ's grant amount for the most recently completed program year falls within the second quartile of all HOME grants awarded within the Office's jurisdiction within the same program year.	Medium	3		
iii. The PJ's grant amount for the most recently completed program year falls within the third or fourth quartile of all HOME grants awarded within the Office's jurisdiction for the same program year.	Low	1		

[7] However, for some subfactors the choices are limited to high or low, or to high or none.

Figure 2. Excerpt From CDBG Risk Analysis Worksheet

Factor 4—Services	Factor Definition	Factor Score	Evaluator's Rating	Evaluator's Comments
A. Meeting National Objectives				
i. Sanctions have been placed on the grantee for noncompliance with national objectives or eligibility requirements during the most recently completed program year **OR** the grantee has not taken recommended corrective actions to address outstanding sanctions **OR** there are known problems identified through review of reports or information received that indicates that the grantee is currently not meeting the national objectives **OR** is implementing ineligible activities.	High	12		
ii. The grantee has been in noncompliance of program national objectives or eligibility requirements one or more times in the past three years **AND** the grantee has taken appropriate corrective actions to address any outstanding sanctions and/or monitoring audit findings related to eligibility and national objectives.	Medium	6		
iii. Activities carried out by grantee during the three most recent program years are in compliance with national objectives and eligible activity requirements **AND** there are no known problems.	Low	1		

After the risk analysis is complete, and the grantee is assigned a score for each open grant it administers, the field office must translate this into a monitoring work plan. First, all grantees are ranked by their overall risk score, from highest risk to lowest risk. Each grantee's overall risk score is simply the average of its individual program risk scores. All grantees with an overall risk score of 51 or higher are considered high risk. A grantee with a risk score between 30 and 51 is considered medium risk, and a grantee with a score less than or equal to 30 is considered low risk.[8] All high-risk grantees must be monitored, unless they are granted an *exception*. Low-risk grantees may also be monitored, depending on the available resources.

The process of granting exceptions is a key aspect of the overall risk assessment and monitoring process. This one step can substantially change the population being monitored; depending on how and when exceptions are granted, the subset of the grantee population that is actually monitored may suffer from selection bias that is not captured by the subfactor scores. The exceptions step in the process has changed over the years, and will be discussed below. After the scores have been tallied and exceptions granted,

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[8] In the remainder of this study, unless otherwise specified, we will use "low risk" to mean "not high risk." In other words, low risk (a score of 30 or less) and medium risk (a score of 31 to 50) have been grouped together.

the field office develops a work plan that sets forth which grantees will be monitored, when, and by whom. The work plan also establishes the method of monitoring—that is, whether the grantee will be monitored on site or remotely.[9]

In the case of on-site monitoring, a CPD Rep goes on site to meet with the grantee and review files. Depending on the program, the CPD Rep may also visit project sites and meet with organizations partnering with the grantee. Throughout this process, the Rep is guided by CPD's highly standardized, comprehensive Monitoring Handbook. The nearly 200 exhibits in the handbook address every program or activity a CPD Rep is likely to encounter, and ensure that monitoring is complete and consistent. These exhibits guide the CPD Rep through a series of questions that document the grantee's performance and whether the grantee is complying with all program requirements. Based on the answers to these questions, the handbook clearly prescribes when a finding should be issued. CPD Reps are required to document their efforts extensively and to enter that documentation into GMP when the monitoring is complete.

B. Year-to-Year Changes

In the annual Risk Analysis Notice, CPD has an opportunity to modify the risk analysis process for that year. These year-to-year changes may be problematic for statistical analysis; data from multiple years cannot be combined into a single sample if those data have different meanings. There are three primary types of changes to the process: changing the exceptions, changing or eliminating factors or subfactors, and changing the subfactor scores. Changing the exceptions is a problem if it means that the population of grantees monitored in different years was systematically different. Changing or eliminating subfactors is a problem because the subfactors are our independent variables, and must be available for the whole sample. Changing the subfactor scores is not as significant of a problem, especially if independent variables are normalized to adjust for their different ranges.

From 2005 to 2006, the risk analysis process was coordinated, and the Notice remained entirely unchanged.[10] In 2007, CPD made moderate changes to the process. While the subfactors and their scores remained nearly identical, there were major changes to the exceptions. In 2005

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[9] According to Notice CPD-04-12 and Notice CPD-06-10, remote monitoring is encouraged for low-risk grantees; however, GMP data documenting monitoring type is inadequate. A total of 83 percent of monitoring observations did not document whether the monitoring occurred on site or remotely. Of the remaining 17 percent of observations, almost all were labeled as on-site monitoring.
[10] The FY 2006 notice, CPD-05-08 simply extends the provisions of Notice CPD-04-12.

and 2006, there were three exceptions: A, B, and X. Exception A could be used if the Office of Inspector General (OIG) was in the midst of an audit of the grant program or site. Exception B could be used if the CPD Director deemed monitoring of a particular program to be "administratively infeasible." Exception X was simply "Other (explain)," with no stated restrictions.[11] During 2005 and 2006, Exception A was used three times; Exception B was used 382 times, and Exception X was used 294 times.[12] In 2007, the available exceptions were changed to make them more consistent and less discretionary. Four exceptions were available but only two could be used to excuse a grantee from monitoring: if the grantee was being audited by OIG, or if the grantee had been monitored within the past two years. Thus, in 2006 a resource-constrained CPD office could use Exception B to avoid monitoring that would be "administratively infeasible"—such as a far-away grantee that would require travel—but in 2007 that grantee would have to be monitored. For these reasons, there may be systematic differences between the population monitored in 2007 and the population monitored in 2005 and 2006. However, we control for these differences by including program year as a variable in our model.

In 2008, the Notice was overhauled; several subfactors were deleted, others were added, and others were substantially modified. These changes prevent 2008 data from being combined with data from previous years, so this analysis considers only data from program years 2005 through 2007.

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[11] 2005 to 2006 Exceptions:
  A. The Office of Inspector General is currently auditing the grant program or project site.
  B. The CPD Director determines that monitoring of this program or project site is administratively infeasible in the current year, given other monitoring actions. HUD will make use of technical assistance support, as needed, to mitigate potential problems or already has the grantee working on a schedule for needed corrective actions. Future monitoring will give priority considerations if issues continue or extenuating circumstances or new information increases risk of this grantee.
  X. Other (explain).

[12] Exceptions were made for grantees in lower risk categories as well as high-risk grantees.

IV. General Analysis

A. Overview of Available Data

The comprehensive source of data documenting the risk assessment and monitoring process is the GMP system. The GMP system is the interface through which field offices enter information about grant recipients. It contains several "modules" that focus on various aspects of a grantee. Data analyzed in this report were harvested primarily from three modules—Risk Analysis, Monitoring, and Findings. See Appendix A for an explanation of how data from these modules were matched into analytic files.

The unit of analysis that we use is the program; each grant program, in each year, for each grantee, is a separate observation. For example, in 2005 the city of Boston administered all four formula grant programs, and each of these programs is a unique observation. A brief note about the calendar is in order. Every recipient of a grant through the four CPD formula programs goes through a Consolidated Planning process each year, in which it states, for each grant, what activities it plans to pursue. The grantee chooses the dates that start and end the year, establishing what is known as their "program year." Thus, the variable "program year" is only a rough approximation of calendar (or fiscal) year and depends on the particular grantee and on the CPD Rep who entered the information into GMP.

In program years 2005 through 2007, 6,773 programs went through the risk analysis process. Over this period, there were 1,192 individual cities and states administering the 6,773 grant programs. Forty-six percent of these grantees administered three or fewer programs over the three year period; almost all of these are grantees that participated only in CDBG each year (n=471). A total of 104 grantees used all four formula grants in all three years.

Because the programs have different subfactors and different scoring weights, the risk analysis process affects them differently. In addition, the process of granting exceptions and identifying low-risk grantees for monitoring may be biased by program type. Table 1 and the following series of figures illustrate the effects of the risk analysis and monitoring process on each of the four formula programs.

Table 1 and Figure 3 show the entire universe of 6,773 programs in this analysis, broken down by program type. The progression from Figure 3 to Figure 4 shows how the risk analysis process alters this universe; Figure 4 includes only high-risk programs. CDBG makes up more than 50 percent of all programs but only 41 percent of high-risk programs. Similarly, ESG

Table 1. Summary of Monitoring by Program Type for All Programs That Underwent Risk Analysis

	CDBG	ESG	HOME	HOPWA	Total
Number of programs	3,417	1,102	1,895	359	6,773
Average risk score	38	37	42	39	39
Number of programs monitored	983	167	549	69	1,768
Percent of programs monitored (within column)	29%	15%	29%	19%	26%

accounts for 16 percent of all programs but only 10 percent of high-risk programs. Balancing this out is the overrepresentation of HOME programs in the high-risk pool; the HOME share increases from 28 to 43 percent. From 2005 through 2007 the risk analysis system was more likely to identify HOME programs as high risk. Whether that identification is appropriate depends on whether HOME programs actually were more risky than the other programs.

Although CDBG programs make up only 41 percent of high-risk programs, Figure 5 shows that they account for 56 percent of all programs monitored. Conversely, ESG, HOME, and HOPWA are all much less likely to be monitored than their risk scores would suggest. In particular, HOME makes up 43 percent of all high-risk programs but only 31 percent of all programs monitored.

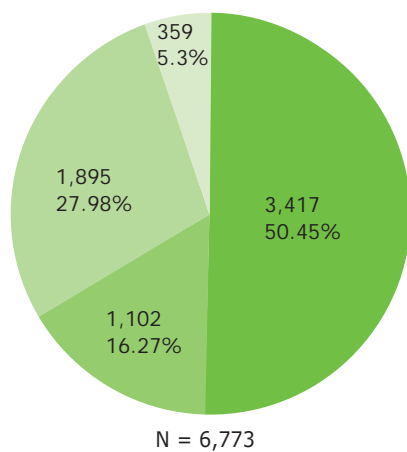**Figure 3.** All Programs Undergoing Risk Analysis, by Program Type, 2005–2007

Figure 4. All High-Risk Programs, by Program Type, 2005–2007
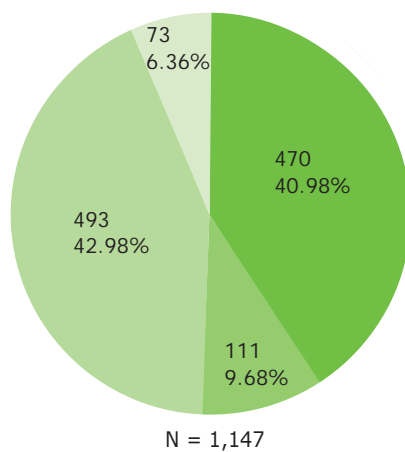
Figure 5. All Programs That Were Monitored, by Program Type, 2005–2007

359
5.3%

1,895
27.98%

3,417
50.45%

1,102
16.27%

N = 6,773

73
6.36%

470
40.98%

493
42.98%

111
9.68%

N = 1,147

69
3.9%

549
31.05%

983
55.6%

167
9.45%

N = 1,768
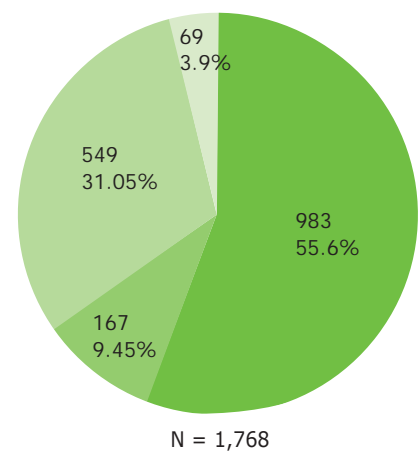
■ CDBG ■ ESG ■ HOME ■ HOPWA

Two factors cause the differences between Figures 4 and 5, and both introduce potential bias. First, many of the high-risk programs shown in Figure 3 were granted exceptions; of the 1,147 high-risk programs, 458 (40 percent) were not monitored.[13] Second, field offices have the discretion to monitor other low-risk programs if resources are available. Figure 4 includes 1,079 of these low-risk programs; *1,079 of the 1,768 programs (61 percent) that were monitored were low risk.*

B. Comparison of Means

Because of the abundance of monitoring done on lower risk programs, the population of monitored programs can be split into two groups for an independent samples t-test. Comparing the high-risk group and the low-risk group on a measure of actual risk shows whether the risk analysis process effectively identifies programs in violation of statutory, regulatory, or program requirements.

Table 2 shows the proportion of monitored programs that had a finding, by program type. A p-value of less than .05 means that the difference between the low-risk programs and the high-risk programs is statistically significant. For each of the four program types, those programs identified as high risk appear more likely to have a finding than the programs identified as low risk; however, for ESG and HOPWA this was not a statistically significant difference. While there is strong evidence that "high-risk" CDBG and HOME grantees really are a higher risk group than "low-risk" CDBG and HOME grantees, the evidence is inconclusive for ESG and HOPWA. This is heavily influenced by the small sample size; only 69 HOPWA programs and 167 ESG programs were monitored over the three years under analysis.

Table 2. **Proportion of Monitored Programs Having at Least One Finding**

	Low-Risk Programs	High-Risk Programs	P-Value
CDBG	51%	76%	0.00
ESG	35%	46%	0.15
HOME	42%	67%	0.00
HOPWA	53%	69%	0.19
Total	48%	69%	0.00

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[13] Presumably, these high-risk programs were not monitored because they were granted an exception, although GMP data cannot verify this with certainty. See Appendix A.

A slightly different picture emerges when looking at the *number* of findings as the dependent variable. Overall, programs identified as high risk had a mean of 2.58 findings, while low-risk programs averaged 1.26. However, the average number of findings is largely a function of the proportion of grantees with any findings; the large number of zero values skews the mean. Excluding those programs that had no findings illustrates the *extent* of the problems identified in certain programs. Table 3 shows that even with zero-finding observations excluded, high-risk programs had more findings than low-risk programs did. This observation was also true within each of the four program types, although for HOPWA the difference was not statistically significant. The difference was largest for HOME, perhaps justifying the higher risk scores for HOME programs.

Table 3. **Mean Number of Findings per Monitoring, Excluding Programs With Zero Findings**

	Low-Risk Programs	High-Risk Programs	P-Value	Increase
CDBG	2.8	3.5	0.00	25%
ESG	1.7	2.6	0.02	49%
HOME	2.7	4.4	0.00	63%
HOPWA	2.2	3.0	0.25	33%
Total	2.7	3.7	0.00	42%

C. General Conclusions

This simple statistical test indicates that the risk analysis process is having some success. Overall, it is identifying programs that are more likely to have findings and tend to have more of them. For the CDBG and HOME programs, an especially stark contrast exists. For CDBG, ESG, and HOME, among programs that have at least one finding, high-risk programs have a larger total number of findings than low-risk programs do.

However, there are still several reasons for concern. First of all, it is somewhat alarming that programs not identified as high risk still have findings at a rate of 48 percent. The programs in that 48 percent also average 2.7 findings. These two statistics combined indicate that programs for which monitoring is *not required* are still frequently found to be in violation of multiple program requirements. This may be partially due to our decision to group low-risk programs (those with risk scores of 30 or lower) and medium-risk programs (those with risk scores of 31 to 50) for the purposes of this analysis. Although low- and medium-risk programs are purportedly treated the same (in that monitoring is not required of either), the risk analysis process does draw a distinction between them and they *could* be

treated differently in the future. In fact, programs with risk scores of 30 or lower had findings only 36 percent of the time, while programs with risk scores of 31 to 50 had findings 49 percent of the time.

Finally, given the abundance of information available to HUD, this sort of predictive ability should be expected; the question is not whether the risk analysis process is successful, but whether it is successful *enough*. CPD's risk analysis process is already a valuable and effective tool in the effort to balance resources against risk, but it could be improved. The next section considers how the process could be improved, by analyzing the risk analysis subfactors.

V. Subfactor Analysis

A. Correlation Analysis

Simple bivariate correlation analysis provides a suitable starting point for exploring the relationship between the dependent variable—number of findings—and each of the independent variables. In addition to the subfactors, the following independent variables are analyzed: total risk score, total score on each of the factors (a simple sum of the subsidiary subfactors), and a dummy variable indicating high-risk status. These results are fully documented in Appendix B, with highlights provided below.

For bivariate analysis of CDBG, the notable finding is that almost every independent variable tested was correlated with findings. Because the CDBG risk analysis process was shown above to be working fairly well, this extensive correlation is not surprising. It is more noteworthy to observe the several variables that were not correlated with findings. Uncorrelated variables include three of the five financial subfactors—Grant Amount, Timeliness of Expenditures, and Program Income—as well as the Environmental/Relocation subfactor.

For ESG, only a few of the independent variables we tested were correlated with findings. The Financial and Management factors were correlated with findings; however, within those categories, the only individual subfactors with a statistically significant correlation coefficient were Expenditure Rate and Timely and Accurate Submissions.

HOME data, like CDBG data, showed that most independent variables we tested were correlated with findings. Notable exceptions were the Financial factor and three of the five subfactors that it comprises. Grant Amount, CHDO (Community Housing Development Organization) Reservations, and Program Income all were shown to be uncorrelated with findings. In addition to the Financial subfactors, six other subfactors did not have a statistically significant correlation with findings: Multiple Funding Sources, Program Delegations, Affordability Requirements, OIG Audit, Environmental/Relocation, and Responsiveness.

Bivariate correlation analysis of HOPWA data revealed few independent variables with a statistically significant correlation with findings. The Satisfaction factor and both of its component subfactors—Citizen Complaints and Responsiveness—were very highly correlated with findings. Multiple Sponsors and Size of Funding were also significant subfactors.

This simple analysis is a good starting point for examining whether particular subfactors are useful, but it must be supplemented. The primary weakness is that this analysis does not account for how the subfactors (and other independent variables) are correlated *with each other*. To illustrate this correlation between subfactors, we created a full correlation matrix for CDBG and HOME, included in Appendix C. Although it is difficult to distill this large amount of information, it is clear that there is a very high degree of correlation between the subfactors. For example, the Audit and Financial Compliance subfactors, under the Financial factor, are both correlated with findings. However, they are also both correlated with *every other subfactor* used in the risk analysis process.

B. Multivariate Analysis

For CDBG and HOME, the relatively large sample size allows for a more rigorous analysis to address the weaknesses of the previous section—namely the correlation between subfactors. To do this, the analysis must estimate the marginal effect of each subfactor on findings, while controlling for mean effects of the remaining independent variables. The most common way of doing this is via ordinary least squares (OLS) regression; however, OLS would not be appropriate for this analysis for two reasons. First, the dependent variable (findings) is discrete, rather than continuous. Second, the distribution of values is highly skewed to the right, with a large number of zeroes. The mean number of findings is 1.77, but 63 percent of monitored programs have either zero or one finding.

Appropriate regressions include models for count data (negative binomial or Poisson distributions) and ordinal data (cumulative logit or probit distributions). Models for count data were fairly accurate in predicting the number of findings, but did a very poor job of predicting the high number of cases with zero findings. This report presents findings from a cumulative logit model, which was the best among the models tested at predicting whether a program would have any findings at all and also at predicting the total number of findings.

In this model the dependent variable is not a number, but the likelihood of the outcome being in a certain category. Tests indicated eight categories of findings were sufficient to adequately model the data. Figure 6 depicts the distribution of findings, with all programs having 7 or more findings grouped together.

Figure 6. Distribution of Number of Findings for All Programs That Were Monitored
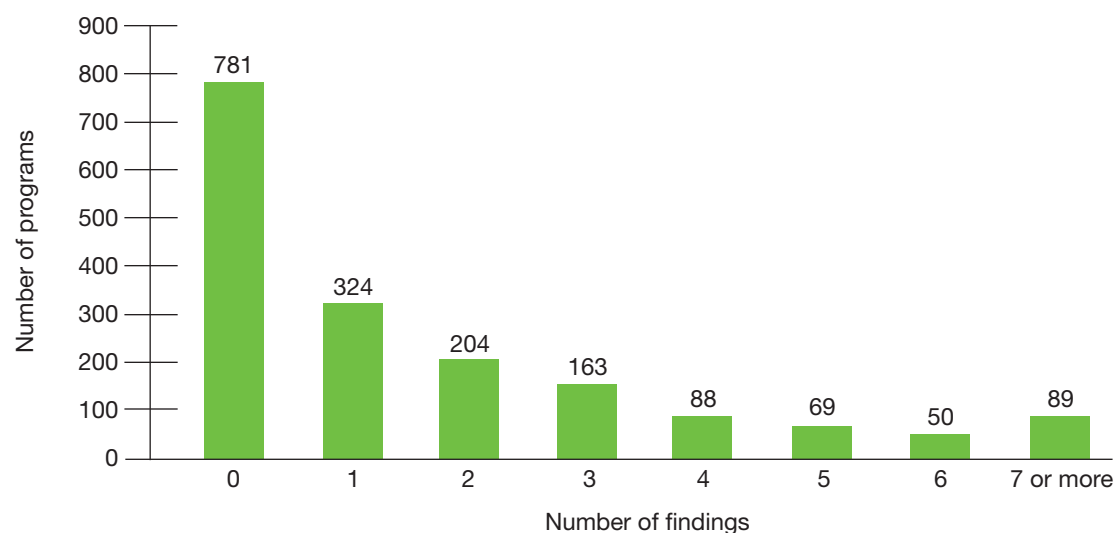
The independent variables in the model include the following: all the risk analysis subfactors, a dummy variable to distinguish program years 2005 to 2006 from 2007, and dummy variables for the different field offices. Separate models were estimated for CDBG and HOME, but the only differences are the subfactor variables. Appendixes D and E include full documentation of these models and their results. The ensuing sections briefly present the statistically significant findings.

CDBG

The CDBG logit model contains 17 subfactors, of which five are statistically significant determinants of findings: Grant Amount, Financial Compliance, Program Complexity, Timely and Accurate Submissions, and Responsiveness. The 2007 dummy variable is not statistically significant, indicating that there were no differences between the years in the underlying process.

Several subfactors that were correlated with findings in the simple bivariate analysis above do not appear statistically significant in multivariate analysis. For example, two subfactors are related to audits—one under the Financial factor (A-133 Audits) and one under the Management factor (OIG Audit). Bivariate analysis shows both of these subfactors to be correlated with findings, but when we control for the other variables in a regression, that correlation dissipates. The same happens with the Staff Capacity, Financial Compliance, and Meeting National Objectives subfactors, perhaps due to the fact that they are all correlated with each of the other 16 subfactors. The opposite effect occurs with the Grant Amount subfactor; it was not

statistically significant in the correlation analysis, but it is in the regression analysis. More interesting is the fact that the impact is *negative*. If two grantees have the exact same subfactor scores on everything except Grant Amount, the one with a larger grant is likely to have *fewer* findings. This may be due to the fact that larger grantees are more sophisticated and less prone to findings; however, grantee sophistication should be accounted for by the Staff Capacity subfactor. Either there is some other reason that large grantees get fewer findings, or the Staff Capacity subfactor is poorly specified.

A second interesting result is the very strong, and statistically significant, relationship between the subfactor Responsiveness (under the Satisfaction factor) and findings. The magnitude of this effect is more than three times as large as the next most influential subfactor (Timely and Accurate Submissions). This suggests that a grantee's failure to respond to citizen complaints is a very strong predictor of findings.

Finally, the field office random effects show considerable variation between field offices. Field offices fall into three categories. Most (27 out of 43) do not have any statistically significant difference from the mean; they identified findings at the rate we would expect, given the risk scores of the programs they were monitoring. Nine were *more* likely to give findings than their grantees' risk scores would suggest. Seven were *less* likely to give findings than their grantees' risk scores would suggest. For example, the Portland field office had an above-average likelihood of giving findings, but the Seattle field office was not different from the mean. The field offices in both Minneapolis and Atlanta also had an above-average likelihood of giving findings, while the field offices in Denver and San Francisco had a *below-average* likelihood of giving findings. Appendix F contains the full list of field office effects.

HOME

The HOME logit model contains 21 subfactors, of which only four are statistically significant determinants of findings: Commitments and Expenditures,[14] A-133 Audits, Staff Capacity, and Program Progress. As with CDBG, many HOME subfactors that appeared important in the simple analysis above drop out in the multivariate analysis. Subfactors such as Financial Compliance, Physical Condition of Projects, Affordability Requirements, and On-Site Monitoring no longer appear to be good predictors of findings. The full correlation matrix in Appendix C shows that these subfactors were frequently correlated with all, or nearly all, of the other subfactors. The HOME risk assessment has so many subfactors that the marginal effect of each one is often zero.

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[14] The full name of this subfactor is "Commitments, CHDO Reservations, and Expenditures."

As with CDBG, the field office random effects show variation between field offices. However, there is less variation; 33 out of 43 field offices did not have a statistically significant effect on findings (compared with 27 for CDBG). Five field offices were *more* likely to give findings than their grantees' risk scores would predict, and five offices were *less* likely to give findings than their grantees' risk scores would predict. For both CDBG and HOME, field offices in Minneapolis, Portland, Ft. Worth, and Atlanta issued more findings that our model would have predicted, and field offices in Denver, Columbus, San Francisco, and Birmingham all issued fewer findings than our model would have predicted. The fact that these field offices exhibited the same tendency in **both** the HOME and CDBG models is a clear indicator that something is different in those field offices.

It is critical to fully understand the meaning, and potential causes, of these field office random effects. Essentially, it means that some field offices gave more or fewer findings than our risk analysis model would predict based on the risk scores. One explanation is that the risk analysis process is missing something—for example, it could be that programs in Minneapolis and Portland are riskier in some way that is not captured by the existing risk analysis subfactors. Similarly, the Denver and San Francisco field offices' lower-than-expected rate of findings could mean that programs in those cities are very well run in some way that the existing risk analysis subfactors do not capture. A second possible explanation is that some HUD staff are more (or less) zealous or demanding. Perhaps staff in the Minneapolis and Portland offices are better at identifying findings, or more willing to issue them, than the average CPD Rep. Finally, this pattern could be caused by the choices each field office makes about whom to monitor—which high-risk programs get exceptions and which low- or medium-risk programs are chosen to be monitored. Some field offices may choose to monitor the most difficult grantees, while others may choose to monitor more low-risk grantees.

It is impossible for our analysis to determine which of these scenarios is occurring. What is clear is that the risk analysis process does not perfectly capture a program's risk level, and field office staff can contribute valuable insight.

C. Subfactor Conclusions

It appears that quite a few subfactors are not contributing to the accurate identification of risk; should they simply be removed? That action alone would not necessarily improve the statistical model or the risk analysis process. As demonstrated in Appendix C, a very high degree of correlation exists between the subfactors; this collinearity undermines the strength of the ordinal logit model, especially when one considers adding or dropping

variables in the model. As a result, it would be unwise to rely exclusively on the results of statistical analysis to revise the risk analysis process. Statistical models should always be guided by theory, and the theory of risk must form the context of this analysis.

The HOME regression results demonstrate the limits of the statistical model. The four subfactors that show up as significant are Commitments and Expenditures, A-133 Audits, Staff Capacity, and Program Progress. Of those subfactors, a strong *a priori* case exists for Staff Capacity being an indicator of likely findings; it flags grantees that have "demonstrated an inability to administer the HOME program," or have open vacancies for key staff. Program Progress and Commitments and Expenditures both flag grantees that are missing deadlines or submitting incomplete reports. The A-133 Audits subfactor would seem to fall into this category as well (failing to submit a report).[15] Missing reporting deadlines probably does indicate risk, but these subfactors do not intuitively seem to be among the four *most important* subfactors.

CPD management is ideally suited to understand the theoretical basis of risk in its grant programs and to select the most important causes of grantee risk, based on that theory. Discussions with CPD staff indicate that two major causes of risk are insufficient staff capacity and highly complicated programs. Unqualified, inexperienced, or short-handed staff are at risk for waste and mismanagement, no matter what other characteristics their programs have, and even competent staff can botch a very challenging or complex program. Program complexity may also be associated with outright fraud, because complex programs may be easier to manipulate without being noticed. These complementary factors—staff capacity and program complexity—must both be accounted for in any theoretically valid model of risk. However, staff capacity and program complexity alone may not sufficiently explain the variation in grantee risk. Including an indicator of past performance can serve as a proxy for some of the other risky aspects of a grantee or program that are difficult to measure.

In light of these three themes of grantee risk—staff capacity, program complexity, and past performance—the subfactors identified by our ordinal logit model as statistically significant can be more properly assessed. Tables 4, 5, and 6 highlight key language from the definitions of several statistically significant subfactors, showing how they relate to these three themes.

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[15] The A-133 Audits subfactor flags grantees that failed to submit their A-133 Audit on time, OR have open findings and are overdue in carrying out corrective actions. Currently, there is no way to know which of those two clauses make this subfactor significant.

Table 4. **Statistically Significant Subfactors Related to Staff Capacity**

Subfactor	Key clauses related to staff capacity
CDBG—Financial Compliance	"…staff has demonstrated an inability to administer the financial management responsibilities for the CDBG program…." "…vacancies for key financial management staff (have existed for X months)…." "…key financial staff have been hired in the past program year and have not received CDBG financial management training."
CDBG—Program Complexity	"…(grantee uses) CBDOs and/or subrecipients to assist in carrying out such activities."
CDBG—Responsiveness	"Grantee has failed to respond to complaints and/or citizen inquiries…."
HOME—Staff Capacity	"…staff has demonstrated an inability to administer the HOME program…." "…vacancies for HOME key staff (have existed for X months)…." "…key HOME staff have been hired in the past program year and have not received HOME program training."

Table 5. **Statistically Significant Subfactors Related to Program Complexity**

Subfactor	Key clauses related to program complexity
CDBG—Program Complexity	"Grantee or State recipients undertakes activities beyond those described in 24 CFR 570.201 and 570.202." "…(grantee uses) CBDOs and/or subrecipients to assist in carrying out such activities."

Table 6. **Statistically Significant Subfactors Related to Past Performance**

Subfactor	Key clauses related to past performance
CDBG—Timely and Accurate Submissions	"…grantee's required submissions are incomplete OR are received 30 days or more after prescribed timeframes." (or were late/incomplete in the prior 3 years)
CDBG—Responsiveness	"Grantee has failed to respond to complaints and/or citizen inquiries… during the most recent program year."
HOME—Commitments, CHDO Reservations, and Expenditures	"…the most recent commitment and expenditure deadlines were not met." "… the PJ missed a deadline one or more times within three most recent program years…."
HOME—Audits	"An A-133 audit … has not been submitted to the Federal Audit Clearinghouse." "…PJ has open findings and is overdue in carrying out any agreed upon corrective action…."

The subfactors have complex definitions with multiple clauses; most of the subfactors in the tables above have other clauses that were left out because they were not relevant to staff capacity, program complexity, or past performance. These multiple clauses obscure the real "meaning" of a subfactor, and blur the lines between the various subfactors; the Financial Compliance and Staff Capacity subfactors contain clauses that are nearly identical.[16] Still, it is important that these subfactors are not only statistically significant but also have some clauses connected to theoretical causes of risk. Because the current form of these subfactors is far from ideal, the risk analysis process could be improved and simplified by revising and consolidating these subfactors under the themes of staff capacity, program complexity, and past performance.

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[16] "staff has demonstrated an inability to administer the financial management responsibilities for the CDBG program" and "staff has demonstrated an inability to administer the CDBG program".

VI. Potential Improvements

Statistical analysis shows that the CPD risk analysis process is identifying higher risk grantees, but the process could be more effective and efficient. Many of the subfactors show no statistical relationship with the number of findings a program has. In such cases, it is difficult to determine *why* no relationship exists, due to the fact that these subfactors often have complicated, multifaceted definitions.

Several possible changes to the risk analysis process could have a variety of benefits, including saving staff time, making better use of monitoring resources, and increasing the potential for future research. CPD could consider the following five changes:

1. Use fewer subfactors, which simply and directly estimate the critical themes of staff capacity, program complexity, and past performance.

2. Develop a subfactor to explicitly incorporate the judgment of the CPD Rep and/or CPD Management Representative.

3. Ensure strict adherence to limited exception criteria.

4. Randomly sample low- and medium-risk grantees for monitoring.

5. Increase reliance on remote monitoring for low- and medium-risk grantees.

1. Fewer Subfactors

This first recommendation is the one most clearly supported statistical analysis. The fact that so many subfactors are not functioning as "red flags" for risk indicates that a more parsimonious model could be just as effective. The subfactors that remain should be *simple* (that is, they should incorporate fewer "**AND**"s and "**OR**"s) and focus on a few key determinants of risk.

Because of the complex and overlapping definitions of the current subfactors, simply keeping some subfactors and dropping others would be ill advised. Instead, we recommend that CPD develop one or two simple indicators for each of the following three categories: program complexity, staff capacity, and past performance. These indicators could effectively identify those programs most susceptible to waste, fraud, abuse, or mismanagement, using only a small amount of information that CPD Reps can easily supply.

2. Field Office Adjustment

This study also shows variation across field offices that is not captured by the risk analysis process. This variation could become more prevalent if some subfactors are eliminated. Currently, the only outlets for the subjective judgment of field office staff are the use of exceptions, deliberate selections for low or moderate risk monitoring, and outright manipulation of subfactor scores. The risk analysis process should explicitly acknowledge and incorporate the subjective judgment of HUD field office staff. For example, the evaluator could be given the opportunity to adjust a program's risk score up or down within a certain range if he or she thinks that the score does not otherwise accurately reflect the risk posed by that program. This will enable field office staff to contribute their valuable perspective, giving them more ownership over the risk analysis selections and correcting any weaknesses in the rest of the risk analysis process. Furthermore, by quantifying the field office judgment and explicitly including it in the process, future analysis will be much more rigorous and useful (for instance, management will be better able to identify trends across field offices).

3. Limited Use of Exceptions

From 2005 through 2007, 40 percent of high-risk programs were not monitored; that is an alarmingly high exception rate. Giving CPD field office staff an explicit outlet for their unique local knowledge and opinions makes it even more important to strictly adhere to the extremely limited exception criteria. If the field office can directly influence the score and a grantee is still high risk, it should be monitored. Of course, exceptions do make sense in some situations, and exceptions used in FY 2008 and FY 2009 are reasonable. Being monitored and audited by the OIG at the same time would be somewhat redundant and a huge burden on the grantee. Grantees that have recently been monitored or are set to receive technical assistance should already be "on the radar" of CPD staff, and monitoring them may not reveal anything interesting. Nonetheless, CPD management should ensure that these exceptions are not being abused.

4. Random Sampling

The greatest benefit of these changes would be a reduction in the time and resources required for risk analysis and monitoring, but these changes offer two very valuable additional benefits, particularly from random sampling. First, including an element of randomness in the process should improve performance by maintaining a constant possibility of monitoring—grantees must be prepared to be monitored each year and will be deterred from

malfeasance or negligence. Second, randomly selecting a subset of the grantees to be monitored would allow for extremely rigorous statistical analysis, overcoming several methodological limitations to this particular study.

A strategy for implementing a random sample could start with the fact that 61 percent of all monitoring in program years 2005 through 2007 was done on low- and medium-risk programs. This directly contradicts the guidance in the *Departmental Management Control Program* handbook that a greater share of monitoring resources should be used to address high-risk programs. These low- and medium-risk programs do not *have to be* monitored, and CPD has flexibility in deciding whether to do so. CPD could continue to monitor all high-risk programs but implement a random sampling regimen for low- and medium-risk programs. One way to do this would be:

- Have each field office rank its programs in order of risk.

- Label the top 20 percent of programs as "high risk," and monitor all of them.

- Label the next 30 percent of programs as "medium risk," and use simple random sampling to monitor 50 percent of them.

- Label the bottom 50 percent of programs as "low risk" and use simple random sampling to monitor 10 percent of them.

- If exceptions must be allowed, they should be available to low-, medium-, and high-risk programs and used in only very limited situations.

One drawback to this system is that randomly sampling grantees could prove administratively difficult. A random sample could identify a group of programs that the field office could not possibly monitor in the same year due to insufficient travel funds. There are three possible solutions to this dilemma. The first is that CPD devote more resources to travel and find a way to share those resources across field offices; while a few field offices may randomly be required to monitor many faraway grantees all at once, it is highly unlikely that all field offices will find themselves in that predicament at the same time. The second possible solution is that the sampling system be geographically weighted, to make faraway grantees less likely to be selected; however, this could cause a moral hazard among those faraway grantees, since they may know they are less likely to be monitored. The third possible solution, discussed in more detail in the following section, is to increase reliance on remote monitoring for the low- and medium-risk grantees that would make up the random sample.

5. Remote Monitoring

The subfactors that are not statistically valid predictors of risk still identify important pieces of information. Although Environmental/Relocation is, for all four formula programs, one of the weakest subfactors for predicting findings, it is part of the rules for each program, and compliance must be ensured. But compliance is the purpose of monitoring; it is not the purpose of risk analysis. Fewer subfactors will result in less compliance information being collected through risk analysis, but that could be balanced out by the collection of more compliance information through monitoring. While on-site monitoring requires significant resources, many elements of compliance can be verified off site with a high level of accuracy. Obviously, any compliance issue contained in the risk analysis process has been verified off site. Relying more heavily on remote monitoring—perhaps relying *exclusively* on remote monitoring for low-risk programs—will enable CPD to continue collecting compliance information but to do so within the proper framework: monitoring.

It may not be possible to conduct remote monitoring as thoroughly as on-site monitoring. Program compliance issues can be observed from documents and phone calls, but fraud and waste may require an on-site visit. As a result, high-risk grantees should continue to be monitored on site.

These five changes could cause significant upheaval if instituted immediately. As a result, PD&R staff has been working with CPD staff, particularly from the Office of Policy Development and Coordination, to plan a phased implementation. In addition, many decisions still need to be made by the program experts in CPD before a new risk analysis model can be developed. As CPD considers the possibility of modifying the risk analysis and monitoring process, PD&R staff will remain available for support.

Appendix A. Data Management and Manipulation

The final analysis was conducted on data downloaded on March 9, 2009 via ODBC connection to CPD's Grants Management Process system. The Tables from which data were pulled are:

- Table 2-39: Findings
- Table 2-42: Grantee
- Table 2-49: Monitoring
- Table 2-72: Risk Formula Exception
- Table 2-73: Risk Formula Program CDBG
- Table 2-74: Risk Formula Program ESG
- Table 2-75: Risk Formula Program HOME
- Table 2-76: Risk Formula Program HOPWA

From the Findings table, the critical variables downloaded were findings_id, monitor_id and finding_number. Monitor_id uniquely identifies each monitoring case (monitoring of one program type at one grantee). A single monitoring can have more than one finding, and each finding is recorded as a separate observation in this table. Thus the unique identifier (or primary key) within this table is findings_id. Finding_number enumerates the findings for a particular monitoring case.

From the Monitoring table, the critical variables downloaded were monitor_id, full_grantee_id, prg_yr, program_type_id, and monitor_type. Monitor_id is the same as in the Findings table. Full_grantee_id uniquely identifies each grantee, and program_type_id identifies the type of program being monitored. Prg_yr identifies the program year of the program at the time it was monitored. Monitor_type indicates whether the monitoring was remote or on-site (though it was frequently blank).

From each of the four "Risk Formula Program" tables, a similar set of variables was downloaded. Each table includes the variables full_grantee_id, prg_yr, and grant_amount. Each table then includes a variable for every subfactor used for that particular program type, with a prefix indicating the program type and the factor grouping (i.e. financial, management, physical, services, satisfaction). For instance, the CDBG table (2-73) includes variables cdbg_f_audits and cdbg_mgt_staff_cap, and the HOME table (2-75) includes variables home_f_audits and home_mgt_staff_cap. These files do not contain the variable program_type_id, but we created it easily, since data for each program type was in separate tables.

The Risk Formula Exception table includes documentation of all exceptions granted. This table includes full_grantee_id, pgr_yr, f_excep_code, and f_excep_comment. However, it does not include monitor_id. Because the monitoring table has programs as its observations, but the exception table has grantees as its observations, we cannot explain perfectly which *programs* got exceptions.

From the Grantee table, a variety of grantee details were downloaded, including full_grantee_id, fo_code and fo_name (Field Office identifiers), and prg_start_date (month and day on which the grantee's program year begins).

Merging to analytic files and processing

The tables above had to be processed, formatted, and merged together to analyze the relationships between variables contained in different tables. First, we aggregated the Findings table by monitor_id and created a new variable, finding_sum. This showed the total number of findings issued for each instance of monitoring. We then merged this data to the Monitoring table, linked on the monitor_id variable. This new file contained observations for all monitoring cases, including the full_grantee_id, monitor_id, program_type_id, and finding_sum. Using the full_grantee_id and program_type_id variables as links, we could then merge this file with the data from the risk analysis tables.

To create our analytic files, we focused only on cases where the prg_yr was 2005, 2006, or 2007, and where risk analysis was conducted. There were 25 cases where a program was monitored but had no risk analysis; these cases were deleted. We created new binary variables to identify state programs, programs that were monitored, programs that had findings, and programs that were high risk. We also created a file with grantees as observations to indicate which grantees oversaw all program types or only 1, 2, or 3 of them; while variables like these could reveal interesting trends, they were not featured in this analysis.

Appendix B. Bivariate Correlation Analysis

The following four tables present Pearson's coefficients of the correlation between each of the independent variables and the dependent variable, number of findings. Variables in bold are analytical variables derived from the risk analysis subfactors. For instance, **Risk Score** is the sum of all subfactors. **High Risk** is a dummy variable where 1 indicates a risk score over 50. **Financial Factor** is the sum of all subfactors grouped under the financial factor. Highlighted P-values exceed the .05 threshold for statistical significance.

CDBG Pearson's Correlation Coefficients

Variable	Correlation	P-Value
Risk Score	0.2698	0.0000
High Risk	0.2156	0.0000
Financial Factor	0.1569	0.0000
CDBG_F_GRANT_AMT	0.0204	0.5226
CDBG_F_TIMELINESS	0.0316	0.3230
CDBG_F_PROG_INCOME	0.0477	0.1352
CDBG_F_AUDITS	0.1628	0.0000
CDBG_F_FINANCIAL_COMP	0.2207	0.0000
Management Factor	0.2340	0.0000
CDBG_MGT_PRG_COMPLEX	0.0941	0.0031
CDBG_MGT_COMPLIANCE	0.2038	0.0000
CDBG_MGT_PRG_ADM_ALLOW	0.0658	0.0390
CDBG_MGT_STAFF_CAP	0.1893	0.0000
CDBG_MGT_OIG	0.0733	0.0215
CDBG_MGT_MONITOR	0.0642	0.0443
CDBG_MGT_SEC108	0.1281	0.0001
CDBG_MGT_ENV_RELOC	0.0575	0.0716
Satisfaction Factor	0.0966	0.0024
CDBG_CS_CITZ_COMP	0.0865	0.0067
CDBG_CS_RESPONSE	0.1050	0.0010
Services Factor	0.2034	0.0000
CDBG_PSD_NATL_OBJ	0.2014	0.0000
CDBG_PSD_PUB_ALLOW	0.0643	0.0439

ESG Pearson's Correlation Coefficients

Variable	Correlation	P-Value
Risk Score	0.1547	0.0459
High Risk	0.2339	0.0024
Financial Factor	0.1576	0.0420
ESG_F_GRANT_AMT	− 0.0574	0.4616
ESG_F_AUDITS	− 0.0131	0.8667
ESG_F_EXP_RATE	0.3817	0.0000
ESG_F_FINANCIAL_COMP	0.1147	0.1400
Physical Factor	0.0761	0.3285
ESG_PHY_REHAB	0.0761	0.3285
Management Factor	0.1799	0.0200
ESG_MGT_PRG_COMPLEX	0.0619	0.4265
ESG_MGT_COMPLIANCE	0.1695	0.0286
ESG_MGT_PRG_ADM_ALLOW	− 0.0595	0.4446
ESG_MGT_STAFF_CAP	0.1323	0.0883
ESG_MGT_OIG	− 0.0243	0.7555
ESG_MGT_REVIEW	0.1301	0.0938
ESG_MGT_STAFF_COSTS	0.0214	0.7839
ESG_MGT_ENV_RELOC	− 0.0522	0.5030
Satisfaction Factor	− 0.0241	0.7573
ESG_CS_CITZ_COMP	0.0002	0.9979
ESG_CS_RESPONSE	− 0.0469	0.5476
Services Factor	− 0.0374	0.6310
ESG_PSD_NATL_OBJ	0.0655	0.4006
ESG_PSD_HOMELESS_PREV	− 0.0722	0.3539
ESG_PSD_ESS_SERVICE	− 0.0878	0.2590

HOME Pearson's Correlation Coefficients

Variable	Correlation	P-Value
Risk Score	0.2858	0.0000
High Risk	0.2735	0.0000
Financial Factor	0.0778	0.0684
HOME_F_GRANT_AMT	− 0.0277	0.5169
HOME_F_EXP_CHDO	− 0.0401	0.3480
HOME_F_PROG_INCOME	0.0144	0.7355
HOME_F_AUDITS	0.1021	0.0168
HOME_F_FINANCIAL_COMP	0.1533	0.0003
Physical Factor	0.1750	0.0000
HOME_PHY_COND_PROJ	0.1750	0.0000
Management Factor	0.2621	0.0000
HOME_MGT_FUNDING	0.0194	0.6504
HOME_MGT_PRG_DESIGN	0.1104	0.0096
HOME_MGT_CHDO_ACTV	0.1111	0.0092
HOME_MGT_PRG_DELEG	0.0562	0.1887
HOME_MGT_AFFORDABILITY	0.0398	0.3523
HOME_MGT_STAFF_CAP	0.1550	0.0003
HOME_MGT_MONITOR_BY_PJ	0.1488	0.0005
HOME_MGT_CAP_OVERSIGHT	0.1313	0.0021
HOME_MGT_AUDIT	0.0230	0.5906
HOME_MGT_MONITOR	0.1812	0.0000
HOME_MGT_ENV_RELOC	0.0234	0.5849
Satisfaction Factor	0.1078	0.0115
HOME_CS_CITZ_COMP	0.1048	0.0141
HOME_CS_RESPONSE	0.0777	0.0690
Services Factor	0.2399	0.0000
HOME_PSD_INC_TARGET	0.1465	0.0006
HOME_PSD_PRG_PROGRESS	0.2156	0.0000

HOPWA Pearson's Correlation Coefficients

Variable	Correlation	P-Value
Risk Score	0.0949	0.4380
High Risk	0.2006	0.0984
Financial Factor	0.1146	0.3486
HOPWA_F_AUDITS	0.0752	0.5390
HOPWA_F_TIMELY_EXP	− 0.0006	0.9962
HOPWA_F_FUNDING	0.2505	0.0379
HOPWA_F_MONITOR_MGT	0.0231	0.8505
Physical Factor	0.0475	0.6984
HOPWA_PHY_ASSET_PROB	0.0535	0.6623
HOPWA_PHY_ACQ	0.0247	0.8404
HOPWA_PHY_MULTIPLE_SITES	0.0393	0.7486
Management Factor	− 0.0498	0.6846
HOPWA_MGT_OIG	0.0996	0.4153
HOPWA_MGT_STAFF_CAP	0.0547	0.6554
HOPWA_MGT_ONSITE_MONITOR	− 0.1223	0.3167
HOPWA_MGT_ACCURATE_SUBM	0.0562	0.6467
HOPWA_MGT_PROG_ADM_CAP	− 0.1098	0.3692
HOPWA_MGT_ENV_RELOC	− 0.1679	0.1678
Satisfaction Factor	0.3095	0.0097
HOPWA_CS_CITZ_COMP	0.2772	0.0211
HOPWA_CS_RESPONSE	0.2851	0.0176
Services Factor	0.1507	0.2165
HOPWA_PSD_MEET_PROG_OBJ	− 0.0824	0.5010
HOPWA_PSD_MUTIPLE_PRG	0.2502	0.0381

Appendix C. Full Correlation Matrix

CDBG Subfactor Correlation Matrix

Subfactors that were not correlated to each other are marked by highlighted cells. Cells with no background color indicate a statistically significant correlation between two subfactors; the number in the cell is the correlation coefficient.

Variable	F_Grant_Amt	F_Timeliness	F_Prog_Income	F_Audits	F_Financial_Comp	Mgt_Prg_Complex
F_GRANT_AMT	1.00		0.37	0.05	0.09	0.42
F_TIMELINESS		1.00		0.15	0.19	
F_PROG_INCOME	0.37		1.00	0.06	0.07	0.30
F_AUDITS	0.05	0.15	0.06	1.00	0.27	0.08
F_FINANCIAL_COMP	0.09	0.19	0.07	0.27	1.00	0.15
MGT_PRG_COMPLEX	0.42		0.30	0.08	0.15	1.00
MGT_COMPLIANCE	0.05	0.15		0.23	0.36	0.09
MGT_PRG_ADM_ALLOW		0.09		0.07	0.23	0.06
MGT_STAFF_CAP	0.08	0.17	0.03	0.22	0.52	0.18
MGT_OIG	0.08		0.07	0.14	0.18	0.11
MGT_MONITOR				0.10	0.13	0.04
MGT_SEC108	0.30		0.26	0.11	0.12	0.28
MGT_ENV_RELOC	0.14		0.04	0.07	0.15	0.13
CS_CITZ_COMP	0.20	0.10	0.09	0.11	0.19	0.19
CS_RESPONSE	0.10	0.08	0.06	0.11	0.13	0.08
PSD_NATL_OBJ	0.15	0.13	0.11	0.22	0.37	0.23
PSD_PUB_ALLOW	0.03			0.11	0.17	0.06

CDBG Subfactor Correlation Matrix, continued

Variable	Mgt_Compliance	Mgt_Prg_Adm_Allow	Mgt_Staff_Cap	Mgt_Oig	Mgt_Monitor	Mgt_Sec108
F_GRANT_AMT	0.05		0.08	0.08		0.30
F_TIMELINESS	0.15	0.09	0.17			
F_PROG_INCOME			0.03	0.07		0.26
F_AUDITS	0.23	0.07	0.22	0.14	0.10	0.11
F_FINANCIAL_COMP	0.36	0.23	0.52	0.18	0.13	0.12
MGT_PRG_COMPLEX	0.09	0.06	0.18	0.11	0.04	0.28
MGT_COMPLIANCE	1.00	0.16	0.41	0.12	0.14	0.10
MGT_PRG_ADM_ALLOW	0.16	1.00	0.19	0.06	0.07	0.06
MGT_STAFF_CAP	0.41	0.19	1.00	0.14	0.16	0.12
MGT_OIG	0.12	0.06	0.14	1.00		0.14
MGT_MONITOR	0.14	0.07	0.16		1.00	
MGT_SEC108	0.10	0.06	0.12	0.14		1.00
MGT_ENV_RELOC	0.16	0.06	0.20	0.07	0.08	0.09
CS_CITZ_COMP	0.14	0.08	0.21	0.13	0.04	0.13
CS_RESPONSE	0.13		0.14			0.09
PSD_NATL_OBJ	0.32	0.15	0.40	0.18	0.13	0.17
PSD_PUB_ALLOW	0.19	0.29	0.19	0.10	0.05	0.05

Variable	Mgt_Env_Reloc	Cs_Citz_Comp	Cs_Response	Psd_Natl_Obj	Psd_Pub_Allow
F_GRANT_AMT	0.14	0.20	0.10	0.15	0.03
F_TIMELINESS		0.10	0.08	0.13	
F_PROG_INCOME	0.04	0.09	0.06	0.11	
F_AUDITS	0.07	0.11	0.11	0.22	0.11
F_FINANCIAL_COMP	0.15	0.19	0.13	0.37	0.17
MGT_PRG_COMPLEX	0.13	0.19	0.08	0.23	0.06
MGT_COMPLIANCE	0.16	0.14	0.13	0.32	0.19
MGT_PRG_ADM_ALLOW	0.06	0.08		0.15	0.29
MGT_STAFF_CAP	0.20	0.21	0.14	0.40	0.19
MGT_OIG	0.07	0.13		0.18	0.10
MGT_MONITOR	0.08	0.04		0.13	0.05
MGT_SEC108	0.09	0.13	0.09	0.17	0.05
MGT_ENV_RELOC	1.00	0.15	0.12	0.17	0.04
CS_CITZ_COMP	0.15	1.00	0.39	0.19	0.04
CS_RESPONSE	0.12	0.39	1.00	0.13	
PSD_NATL_OBJ	0.17	0.19	0.13	1.00	0.15
PSD_PUB_ALLOW	0.04	0.04		0.15	1.00

HOME Subfactor Correlation Matrix

Subfactors that were not correlated to each other are marked by high-lighted cells. Cells with no background color indicate a statistically significant correlation between two subfactors; the number in the cell is the correlation coefficient.

Variable	F_Grant_Amt	F_Exp_Chdo	F_Prog_Income	F_Audits	F_Financial_Comp	Phy_Cond_Proj	Mgt_Funding
HOME_F_GRANT_AMT	1.00		0.06	0.08	0.12	0.05	0.35
HOME_F_EXP_CHDO		1.00	0.21	0.08	0.27	0.12	
HOME_F_PROG_INCOME	0.06	0.21	1.00	0.16	0.27	0.10	
HOME_F_AUDITS	0.08	0.08	0.16	1.00	0.26	0.07	0.07
HOME_F_FINANCIAL_COMP	0.12	0.27	0.27	0.26	1.00	0.16	0.07
HOME_PHY_COND_PROJ	0.05	0.12	0.10	0.07	0.16	1.00	0.07
HOME_MGT_FUNDING	0.35			0.07	0.07	0.07	1.00
HOME_MGT_PRG_DESIGN	0.32			0.05	0.10	0.12	0.40
HOME_MGT_CHDO_ACTV	0.17	0.24	0.11	0.10	0.21	0.11	0.24
HOME_MGT_PRG_DELEG	0.17	0.07			0.11	0.12	0.16
HOME_MGT_AFFORDABILITY		0.10	0.06	0.09	0.22	0.11	
HOME_MGT_STAFF_CAP		0.23	0.17	0.16	0.50	0.12	0.08
HOME_MGT_MONITOR_BY_PJ		0.18	0.12	0.11	0.32	0.33	0.09
HOME_MGT_CAP_OVERSIGHT	0.05	0.25	0.18	0.11	0.38	0.19	0.05
HOME_MGT_AUDIT	0.10		0.05	0.16	0.20	0.05	0.10
HOME_MGT_MONITOR		0.08	0.05	0.09	0.16	0.45	0.05
HOME_MGT_ENV_RELOC	0.12	0.10			0.19	0.12	0.09
HOME_CS_CITZ_COMP	0.12	0.13	0.12	0.12	0.22	0.10	0.07
HOME_CS_RESPONSE	0.08	0.09	0.10	0.09	0.12	0.12	0.05
HOME_PSD_INC_TARGET		0.11	0.12	0.08	0.13	0.36	0.08
HOME_PSD_PRG_PROGRESS	0.11	0.28	0.26	0.12	0.37	0.19	0.13

HOME Subfactor Correlation Matrix, continued

Variable	Mgt_Prg_Design	Mgt_Chdo_Actv	Mgt_Prg_Deleg	Mgt_Afford	Mgt_Staff_Cap	Mgt_Monitor_By_Pj	Mgt_Cap_Oversight
HOME_F_GRANT_AMT	0.32	0.17	0.17				0.05
HOME_F_EXP_CHDO		0.24	0.07	0.10	0.23	0.18	0.25
HOME_F_PROG_INCOME		0.11		0.06	0.17	0.12	0.18
HOME_F_AUDITS	0.05	0.10		0.09	0.16	0.11	0.11
HOME_F_FINANCIAL_COMP	0.10	0.21	0.11	0.22	0.50	0.32	0.38
HOME_PHY_COND_PROJ	0.12	0.11	0.12	0.11	0.12	0.33	0.19
HOME_MGT_FUNDING	0.40	0.24	0.16		0.08	0.09	0.05
HOME_MGT_PRG_DESIGN	1.00	0.25	0.26	0.07	0.10	0.14	0.15
HOME_MGT_CHDO_ACTV	0.25	1.00	0.17	0.16	0.28	0.19	0.25
HOME_MGT_PRG_DELEG	0.26	0.17	1.00	0.09	0.10	0.12	0.20
HOME_MGT_AFFORDABILITY	0.07	0.16	0.09	1.00	0.25	0.26	0.25
HOME_MGT_STAFF_CAP	0.10	0.28	0.10	0.25	1.00	0.36	0.42
HOME_MGT_MONITOR_BY_PJ	0.14	0.19	0.12	0.26	0.36	1.00	0.51
HOME_MGT_CAP_OVERSIGHT	0.15	0.25	0.20	0.25	0.42	0.51	1.00
HOME_MGT_AUDIT	0.09	0.14	0.07	0.09	0.18	0.13	0.13
HOME_MGT_MONITOR	0.09	0.11	0.09	0.09	0.16	0.31	0.19
HOME_MGT_ENV_RELOC	0.10	0.18	0.19	0.12	0.20	0.15	0.21
HOME_CS_CITZ_COMP	0.11	0.14	0.13	0.09	0.19	0.20	0.20
HOME_CS_RESPONSE	0.07	0.09	0.07	0.08	0.11	0.13	0.11
HOME_PSD_INC_TARGET	0.08	0.10		0.17	0.14	0.29	0.17
HOME_PSD_PRG_PROGRESS	0.15	0.38	0.12	0.22	0.38	0.29	0.36

HOME Subfactor Correlation Matrix, continued

Variable	Mgt_ Audit	Mgt_ Monitor	Mgt_ Env _ Reloc	Cs_ Citz _ Comp	Cs_ Response	Psd_ Inc_ Target	Psd_ Prg _ Progress
HOME_F_GRANT_AMT	0.10		0.12	0.12	0.08		0.11
HOME_F_EXP_CHDO		0.08	0.10	0.13	0.09	0.11	0.28
HOME_F_PROG_INCOME	0.05	0.05		0.12	0.10	0.12	0.26
HOME_F_AUDITS	0.16	0.09		0.12	0.09	0.08	0.12
HOME_F_FINANCIAL_COMP	0.20	0.16	0.19	0.22	0.12	0.13	0.37
HOME_PHY_COND_PROJ	0.05	0.45	0.12	0.10	0.12	0.36	0.19
HOME_MGT_FUNDING	0.10	0.05	0.09	0.07	0.05	0.08	0.13
HOME_MGT_PRG_DESIGN	0.09	0.09	0.10	0.11	0.07	0.08	0.15
HOME_MGT_CHDO_ACTV	0.14	0.11	0.18	0.14	0.09	0.10	0.38
HOME_MGT_PRG_DELEG	0.07	0.09	0.19	0.13	0.07		0.12
HOME_MGT_AFFORDABILITY	0.09	0.09	0.12	0.09	0.08	0.17	0.22
HOME_MGT_STAFF_CAP	0.18	0.16	0.20	0.19	0.11	0.14	0.38
HOME_MGT_MONITOR_BY_PJ	0.13	0.31	0.15	0.20	0.13	0.29	0.29
HOME_MGT_CAP_OVERSIGHT	0.13	0.19	0.21	0.20	0.11	0.17	0.36
HOME_MGT_AUDIT	1.00	0.06	0.10	0.11		0.06	0.15
HOME_MGT_MONITOR	0.06	1.00	0.05	0.07		0.30	0.18
HOME_MGT_ENV_RELOC	0.10	0.05	1.00	0.18	0.11	0.10	0.14
HOME_CS_CITZ_COMP	0.11	0.07	0.18	1.00	0.50	0.05	0.13
HOME_CS_RESPONSE			0.11	0.50	1.00	0.08	0.11
HOME_PSD_INC_TARGET	0.06	0.30	0.10	0.05	0.08	1.00	0.22
HOME_PSD_PRG_PROGRESS	0.15	0.18	0.14	0.13	0.11	0.22	1.00

Appendix D. CDBG Ordinal Logit

Model Information	
Data Set	GMP.HOME4
Response Variable	findtrunc
Response Distribution	Multinomial (ordered)
Link Function	Cumulative Logit
Variance Function	Default
Variance Matrix Blocked By	FO_NAME
Estimation Technique	Residual PL
Degrees of Freedom Method	Containment
Number of Observations Read	983
Number of Observations Used	983

Parameter Estimates: Highlighted rows indicate parameters that are statistically significant at the .05 level.

Variable	Variable label	Parameter	Pvalue
Intercept	7	− 3.762	0.000
Intercept	6	− 3.115	0.000
Intercept	5	− 2.595	0.000
Intercept	4	− 2.179	0.000
Intercept	3	− 1.454	0.000
Intercept	2	− 0.773	0.000
Intercept	1	0.201	0.286
CDBG_F_GRANT_AMT		− 0.089109	0.048
CDBG_F_TIMELINESS		0.0036072	0.863
CDBG_F_PROG_INCOME		0.0099297	0.809
CDBG_F_AUDITS		0.0452403	0.293
CDBG_F_FINANCIAL_COM		0.121874	0.017
CDBG_MGT_PRG_COMPLEX		0.0924893	0.024
CDBG_MGT_COMPLIANCE		0.1857741	0.000
CDBG_MGT_PRG_ADM_ALL		0.0146532	0.836
CDBG_MGT_STAFF_CAP		0.0875281	0.058
CDBG_MGT_OIG		0.1197305	0.547
CDBG_MGT_MONITOR		0.0112862	0.481
CDBG_MGT_SEC108		0.068088	0.098
CDBG_MGT_ENV_RELOC		0.0239441	0.894
CDBG_CS_CITZ_COMP		− 0.04677	0.466
CDBG_CS_RESPONSE		0.7036885	0.040
CDBG_PSD_NATL_OBJ		0.0244642	0.224
CDBG_PSD_PUB_ALLOW		0.0150065	0.791
fy2	FY 2005,06	0.0913601	0.490
Intercept	ALBUQUERQUE	− 0.821196	0.084
Intercept	ANCHORAGE	− 0.479994	0.361

Parameter Estimates, continued

Variable	Variable label	Parameter	Pvalue
Intercept	ATLANTA	0.8095092	0.048
Intercept	BALTIMORE	0.3225549	0.530
Intercept	BIRMINGHAM	− 1.271152	0.002
Intercept	BOSTON	− 0.039254	0.890
Intercept	BUFFALO	− 0.641203	0.051
Intercept	CARIBBEAN	0.713128	0.091
Intercept	CHICAGO	− 0.611947	0.046
Intercept	COLUMBIA	− 0.82816	0.048
Intercept	COLUMBUS	− 0.874876	0.010
Intercept	DENVER	− 1.150944	0.000
Intercept	DETROIT	0.7110142	0.010
Intercept	FT WORTH	0.82225	0.002
Intercept	GREENSBORO	− 0.361672	0.338
Intercept	HARTFORD	− 0.008295	0.985
Intercept	HONOLULU	0.2654118	0.634
Intercept	HOUSTON	0.5306184	0.444
Intercept	INDIANAPOLIS	0.802613	0.096
Intercept	JACKSON	− 0.129098	0.830
Intercept	JACKSONVILLE	− 0.488812	0.202
Intercept	KANSAS CITY	− 0.081212	0.853
Intercept	KNOXVILLE	0.1675342	0.704
Intercept	LITTLE ROCK	0.7279195	0.045
Intercept	LOS ANGELES	0.6093267	0.016
Intercept	LOUISVILLE	0.5315575	0.297
Intercept	MILWAUKEE	− 0.368817	0.361
Intercept	MINNEAPOLIS	2.030676	0.000
Intercept	NEW ORLEANS	− 0.151728	0.763
Intercept	NEW YORK	− 0.082174	0.830
Intercept	NEWARK	− 0.061503	0.851
Intercept	OKLAHOMA CITY	− 0.966685	0.078
Intercept	OMAHA	0.8772831	0.022
Intercept	PHILADELPHIA	0.1459947	0.694
Intercept	PITTSBURGH	− 0.384321	0.411
Intercept	PORTLAND	1.0379489	0.021
Intercept	RICHMOND	− 1.104926	0.004
Intercept	SAN ANTONIO	− 0.217111	0.649
Intercept	SAN FRANCISCO	− 0.822653	0.002
Intercept	SEATTLE	0.3465583	0.327
Intercept	SOUTH FLORIDA	0.7781131	0.043
Intercept	ST LOUIS	− 0.449168	0.479
Intercept	WASHINGTON DC	0.1668885	0.785

CDBG Predicted Findings: The graphic below depicts the relationship between the number of findings predicted by our logit model and the actual number of findings (truncated at 7). There is a tendency for higher actual findings to have higher predicted findings. For instance, of the 192 programs with 1 finding, our model predicted more than 2 findings only 51 times (27%). But for the 34 programs with 6 findings, our model predicted more than 2 findings 26 times (77%). This relationship is captured by our statistical model. However, a casual glance at this graphic shows how imprecise the model is. In several instances, the model predicted more than 3 findings for programs that actually had zero. Similarly, the model predicted less than 3 findings for 48 of the 80 programs that actually had 6 or more findings.

CDBG Logit Predictions
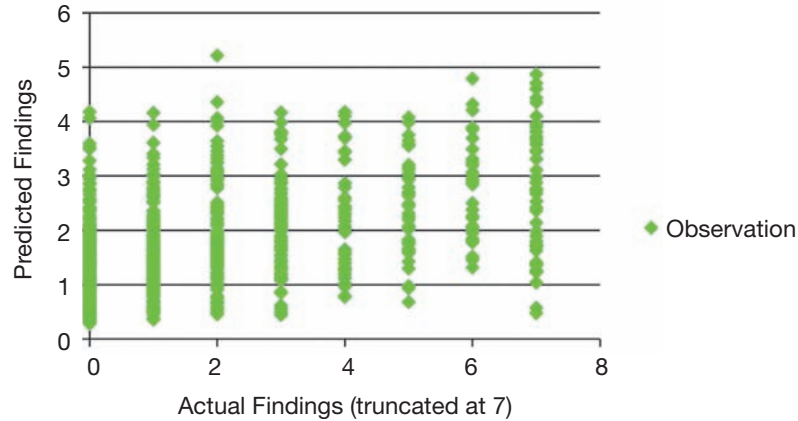
Appendix E. HOME Ordinal Logit

Model Information	
Data Set	GMP.HOME4
Response Variable	findtrunc
Response Distribution	Multinomial (ordered)
Link Function	Cumulative Logit
Variance Function	Default
Variance Matrix Blocked By	FO_NAME
Estimation Technique	Residual PL
Degrees of Freedom Method	Containment
Number of Observations Read	549
Number of Observations Used	549

Parameter Estimates: Highlighted rows indicate parameters that are statistically significant at the .05 level.

Variable	Variable label	Parameter	Pvalue
Intercept	7	− 3.1396	0.0000
Intercept	6	− 2.7671	0.0000
Intercept	5	− 2.2419	0.0000
Intercept	4	− 1.7354	0.0000
Intercept	3	− 1.0788	0.0001
Intercept	2	− 0.4469	0.0705
Intercept	1	0.3705	0.1295
HOME_F_GRANT_AMT		− 0.0546	0.3532
HOME_F_EXP_CHDO		− 0.1698	0.0272
HOME_F_PROG_INCOME		− 0.1562	0.2708
HOME_F_AUDITS		0.1732	0.0076
HOME_F_FINANCIAL_COM		0.0312	0.6851
HOME_PHY_COND_PROJ		0.0090	0.6934
HOME_MGT_FUNDING		− 0.1335	0.2200
HOME_MGT_PRG_DESIGN		0.1847	0.0857
HOME_MGT_CHDO_ACTV		0.0752	0.4521
HOME_MGT_PRG_DELEG		0.0035	0.9717
HOME_MGT_AFFORDABILI		− 0.1911	0.2722
HOME_MGT_STAFF_CAP		0.0708	0.0322
HOME_MGT_MONITOR_BY_		0.0152	0.8331
HOME_MGT_CAP_OVERSIG		0.0551	0.2391
HOME_MGT_AUDIT		− 0.6050	0.1588
HOME_MGT_MONITOR		0.0435	0.0780
HOME_MGT_ENV_RELOC		− 0.1261	0.5984
HOME_CS_CITZ_COMP		0.0986	0.3372
HOME_CS_RESPONSE		0.1417	0.8000

Parameter Estimates, continued

Variable	Variable label	Parameter	Pvalue
HOME_PSD_INC_TARGET		0.0433	0.6846
HOME_PSD_PRG_PROGRES		0.1860	0.0040
fy2	FY 2005,06	− 0.3450	0.0539
Intercept	ALBUQUERQUE	− 0.3237	0.5905
Intercept	ANCHORAGE	0.0144	0.9815
Intercept	ATLANTA	1.8503	0.0002
Intercept	BALTIMORE	1.1717	0.0674
Intercept	BIRMINGHAM	− 1.0648	0.0435
Intercept	BOSTON	− 0.4145	0.3340
Intercept	BUFFALO	− 0.3383	0.4473
Intercept	CARIBBEAN	0.5526	0.2873
Intercept	CHICAGO	− 0.2155	0.6320
Intercept	COLUMBIA	− 0.6676	0.2471
Intercept	COLUMBUS	− 1.3107	0.0081
Intercept	DENVER	− 1.5769	0.0018
Intercept	DETROIT	− 0.1784	0.6586
Intercept	FT WORTH	0.9994	0.0228
Intercept	GREENSBORO	− 0.3507	0.4052
Intercept	HARTFORD	0.1299	0.8444
Intercept	HONOLULU	0.3323	0.6278
Intercept	HOUSTON	0.2603	0.7081
Intercept	INDIANAPOLIS	0.0986	0.8506
Intercept	JACKSON	0.1328	0.8459
Intercept	JACKSONVILLE	0.5388	0.2492
Intercept	KANSAS CITY	− 0.4973	0.3543
Intercept	KNOXVILLE	− 0.2965	0.5860
Intercept	LITTLE ROCK	− 1.2983	0.0316
Intercept	LOS ANGELES	− 0.2484	0.4790
Intercept	LOUISVILLE	0.4108	0.5443
Intercept	MILWAUKEE	− 0.9295	0.1123
Intercept	MINNEAPOLIS	2.0643	0.0002
Intercept	NEW ORLEANS	1.0978	0.0291
Intercept	NEW YORK	− 0.6333	0.2050
Intercept	NEWARK	− 0.1153	0.7677
Intercept	OKLAHOMA CITY	− 0.5968	0.3934
Intercept	OMAHA	0.9257	0.0898
Intercept	PHILADELPHIA	0.2294	0.5765
Intercept	PITTSBURGH	− 0.5058	0.3683
Intercept	PORTLAND	1.7320	0.0032
Intercept	RICHMOND	− 0.3702	0.4467
Intercept	SAN ANTONIO	0.3994	0.5342
Intercept	SAN FRANCISCO	− 1.2106	0.0025
Intercept	SEATTLE	− 0.0514	0.9116
Intercept	SOUTH FLORIDA	0.3756	0.4829
Intercept	ST LOUIS	− 0.8573	0.2938
Intercept	WASHINGTON DC	0.7354	0.2299

HOME Predicted Findings: The graphic below depicts the relationship between the number of findings predicted by our logit model and the actual number of findings (truncated at 7). There is a tendency for higher actual findings to have higher predicted findings. This is more visible graphically than it was for the CDBG Logit Predictions plot. There is still a large range for predicted values; programs that actually had 7 or more findings were predicted by the model to have anywhere from 1 to 6.

HOME Logit Predictions
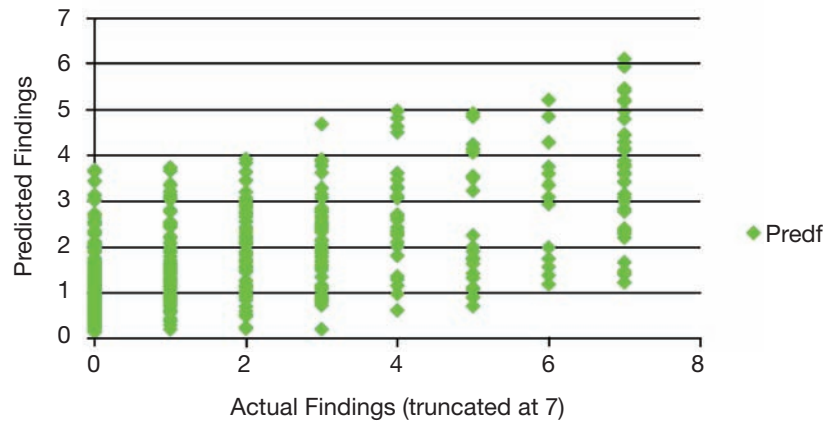
Appendix F. Field Office Random Effects

CDBG: Field offices with no statistically significant effect on findings are listed alphabetically in the first column. Field offices with a statistically significant positive effect on findings (issuing more findings, on average, than risk scores would suggest) are listed are listed in Group 2, in order of the magnitude of that effect. Field office with a statistically significant negative effect on findings (issuing fewer findings, on average, than risk scores would suggest) are listed in Group 3, in order of magnitude of that effect.

Group 1: No Effect	Group 2: More Findings	Group 3: Fewer Findings
ALBUQUERQUE	MINNEAPOLIS	BIRMINGHAM
ANCHORAGE	PORTLAND	DENVER
BALTIMORE	OMAHA	RICHMOND
BOSTON	FT WORTH	COLUMBUS
BUFFALO	ATLANTA	COLUMBIA
CARIBBEAN	SOUTH FLORIDA	SAN FRANCISCO
GREENSBORO	LITTLE ROCK	CHICAGO
HARTFORD	DETROIT	
HONOLULU	LOS ANGELES	
HOUSTON		
INDIANAPOLIS		
JACKSON		
JACKSONVILLE		
KANSAS CITY		
KNOXVILLE		
LOUISVILLE		
MILWAUKEE		
NEW ORLEANS		
NEW YORK		
NEWARK		
OKLAHOMA CITY		
PHILADELPHIA		
PITTSBURGH		
SAN ANTONIO		
SEATTLE		
ST LOUIS		
WASHINGTON DC		

HOME: Field offices with no statistically significant effect on findings are listed alphabetically in the first column. Field offices with a statistically significant positive effect on findings (issuing more findings, on average, than risk scores would suggest) are listed are listed in Group 2, in order of the magnitude of that effect. Field office with a statistically significant negative effect on findings (issuing fewer findings, on average, than risk scores would suggest) are listed in Group 3, in order of magnitude of that effect.

Group 1: No Effect	Group 2: More Findings	Group 3: Fewer Findings
ALBUQUERQUE	MINNEAPOLIS	DENVER
ANCHORAGE	ATLANTA	COLUMBUS
BALTIMORE	PORTLAND	LITTLE ROCK
BOSTON	NEW ORLEANS	SAN FRANCISCO
BUFFALO	FT WORTH	BIRMINGHAM
CARIBBEAN		
CHICAGO		
COLUMBIA		
DETROIT		
GREENSBORO		
HARTFORD		
HONOLULU		
HOUSTON		
INDIANAPOLIS		
JACKSON		
JACKSONVILLE		
KANSAS CITY		
KNOXVILLE		
LOS ANGELES		
LOUISVILLE		
MILWAUKEE		
NEW YORK		
NEWARK		
OKLAHOMA CITY		
OMAHA		
PHILADELPHIA		
PITTSBURGH		
RICHMOND		
SAN ANTONIO		
SEATTLE		
SOUTH FLORIDA		
ST LOUIS		
WASHINGTON DC		

Appendix G. Subfactor Definitions (adapted from the Notice CPD-06-10)

These are the high risk definitions for all subfactors in the 2007 risk analysis process. To view the full definitions, consult the appendixes of Notice CPD-06-10, at: http://www.hud.gov/offices/cpd/lawsregs/notices/2006/.

CDBG subfactors

Factor 1—Financial

A. Grant Amount *Maximum of 5 points*	The community's grant amount for the most recently completed program year falls within the top quartile of all CDBG-funded communities within the Office's jurisdiction for the same program year.
B. Timeliness *Maximum of 10 points*	**If evaluating an entitlement grantee—**The grantee is currently untimely as the amount of CDBG funds available to the grantee 60 days prior to the end of the most recent program year is more than 1.5 times the grant amount for the current program year. **If evaluating a State grantee—**The current rate of expenditure for the past 12 months is less than 1.0 and the State has a ratio of greater than 2.5, 60 days prior to the start of the program year or the State has not distributed and announced 100% of its State CDBG grant excluding State Administration and TA within 15 months of the date of its last grant award.
C. Program Income *Maximum of 5 points*	The grantee, State recipient(s) or its sub-recipient(s) received program income over $100,000 per year directly generated from the use of CDBG funds during the most recently completed program year.
D. Audits *Maximum of 5 points*	An A-133 audit due for the most recently completed reporting period or any previous reporting period within the three most recent program years has not been submitted to the Federal Audit Clearinghouse within prescribed timeframe OR a grantee has open findings and is overdue in carrying in carrying out any agreed upon corrective action.
E. Financial Compliance *Maximum of 5 points*	During the most recent program year, staff has demonstrated an inability to administer the financial management responsibilities for the CDBG program as evidenced thru one or more violation(s) of regulations or deficiencies of Part 85, Part 84, A-87 or A-110 or such equivalent requirements as set forth by the State CDBG program OR one or more vacancies for key financial management staff of CDBG programs have existed for more than six months (key financial management staff is defined as staff with direct oversight of financial records and or distribution of program funds).

Factor 2—Management

A. Program Complexity *Maximum of 5 points*	Grantee or State recipients undertakes activities beyond those described in 24 CFR 570.201 and 570.202 AND utilizes Community Based Development Organizations (CBDOs) and/or subrecipients to assist in carrying out such activities.
B. Timely and Accurate Submissions *Maximum of 5 points*	One and/or more of grantee's required submissions are incomplete OR are received 30 days or more after prescribed timeframes. This includes: Consolidated Plans, Annual Action Plans, PERS and CAPERS during the most recent program year.
C. Program Administration CAP *Maximum of 5 points*	The grantee has exceeded the administration CAP for the CDBG program for the most recently completed program year.
D. Staff Capacity *Maximum of 5 points*	During the most recent program year, staff has demonstrated an inability to administer the CDBG program as evidenced through one or more violations of regulations, or monitoring findings related to the CDBG program that the grantee has failed to resolve within the last six months OR there are one or more vacancies for CDBG key staff that have existed for more than six months (key staff is defined as staff with assigned management and administrative responsibilities for program compliance with rules and regulations).

CDBG subfactors, continued

E. OIG Audit *Maximum of 5 points*	An OIG Audit is scheduled or currently underway and a final report has not been issued OR a previous OIG Audit identified one or more recommendations that have not been cleared AND the grantee is not on schedule for carrying out such recommendations as of the date of this review.
F. On Site Monitoring *Maximum of 15 points*	HUD has not conducted an on-site monitoring of the CDBG program for this grantee within the last two program years OR there are one or more overdue open findings.
G. Section 108 Activity *Maximum of 5 points*	The grantee manages a Section 108 Loan portfolio of more than $2,000,000 or funds that are the equivalent of 25% or more of the grantee's most recent CDBG grant amount.
H. Environmental/ Relocation *Maximum of 2 points*	The grantee has not demonstrated a record of program compliance or currently has known compliance problems with either Environmental (Part 50 or 58) or Uniform Relocation Acquisition Act requirements.

Factor 3—Satisfaction

A. Citizen Complaints *Maximum of 5 points*	Citizen complaints have been received during the most recently completed program year through such sources as; citizen letters, phone calls, hot line complaints, newspapers articles, etc., and when considering the grantee's response resulted in violations of CDBG regulations or findings.
B. Responsiveness *Maximum of 2 points*	Grantee has failed to respond to complaints and/or citizen inquiries forwarded through HUD within prescribed timeframes during the most recent program year.

Factor 4—Services

A. Meeting National Objectives *Maximum of 12 points*	Sanctions have been placed on the grantee for noncompliance with national objectives or eligibility requirements during the most recently completed program year OR the grantee has not taken recommended corrective actions to address outstanding sanctions OR there are known problems identified through review of reports or information received that indicates that the grantee is currently not meeting the national objectives OR is implementing ineligible activities.
B. Public Service CAP *Maximum of 6 points*	Grantee exceeded the public service CAP for the most recently completed program year.

HOME subfactors

Factor 1—Financial

A. Grant Amount *Maximum of 5 points*	The Participating Jurisdiction's (PJ) grant amount for the most recently completed program year falls within the top quartile of all HOME funded communities within the Office's jurisdiction for the same program year.
B. Commitments, CHDO Reservations, and Expenditures *Maximum of 5 points*	HOME Production Reports indicate that the most recent commitment and expenditure deadlines were not met.
C. Program Income *Maximum of 3 points*	The PR 27 indicates that the PJ is not receipting program income.
D. Audits *Maximum of 5 points*	An A-133 audit due for the most recently completed reporting period or any previous reporting period within the three most recent program years has not been submitted to the Federal Audit Clearinghouse within prescribed timeframe **OR** a PJ has open findings and is overdue in carrying out any agreed upon corrective action.
E. Financial Compliance *Maximum of 5 points*	During the most recent program year, staff has demonstrated an inability to administer the financial management responsibilities for the HOME program as evidenced through one or more violations of regulations or deficiencies of Part 85, Part 84, A-87 or A-110 **OR** one or more vacancies for key financial management staff of HOME programs have existed for more than six months (key financial management staff is defined as staff with direct oversight of financial records and or distribution of program funds).

HOME subfactors, continued

Factor 2—Physical

A. **Physical Condition of Projects**
Maximum of 12 points

HUD has not conducted an onsite review of the physical conditions of any HOME units in more than 3 years **OR** Previous monitoring (on-site or remote) identified findings concerning the physical condition of HOME properties which have not been resolved as of this date **OR** HOME projects did not meet applicable standards at completion or are not maintained in standard and habitable conditions for the last two most recently completed program years which was determined by such means as the CAPER review or citizen correspondence.

Factor 3—Management

A. **Multiple Funding Sources**
Maximum of 2 points

There are large (25 or more units) rental projects **OR** other projects with three or more funding sources.

B. **Program Design**
Maximum of 2 points

PJ is administering more than three HOME-funded programs/activities **OR** since the HOME program was last monitored on-site, the PJ has undertaken new activities or made changes to an existing program.

C. **CHDO activities**
Maximum of 2 points

Based on the PR 25 or SNAPSHOT reports, the PJ's CHDO activities are not progressing from reservations to commitment, from commitments to disbursement or CHDOs are responsible for carrying out activities that are complex (i.e., funding from more than one source, more than 25 units, or new project types) in nature.

D. **Program Delegations**
Maximum of 2 points

Program functions are being delegated to, and carried out by other entities such as: state recipients, contractors, lenders, and/or real estate professionals.

E. **Affordability Requirements**
Maximum of 2 points

More than one project in the most recently completed program year has not complied with affordability requirements.

F. **Staff Capacity**
Maximum of 9 points

During the most recent program year, staff has demonstrated an inability to administer the HOME program as evidenced through one or more violations of regulations or monitoring findings related to the HOME program, that the grantee has failed to resolve within the last six months **OR** one or more vacancies for HOME key staff have existed for more than six months **(Key staff is defined as staff with assigned management and administrative responsibilities for program compliance with rules and regulations)**.

G. **Ongoing Project Monitoring by PJ's**
Maximum of 5 points

In the most recent program year, monitoring or other information available to the field office (e.g., through sampling, inquiries or complaints) indicated that the PJ was not monitoring or might not be adequately monitoring HOME rents, occupancy requirements, and physical conditions of projects under a period of affordability.

H. **Subrecipient/Consortia Members/CHDOs/State Recipient Capacity and Oversight**
Maximum of 7 points

Available information (e.g., internal PJ monitoring reports, monitoring plans, audits, citizen correspondence, previous HUD monitoring audits, etc.) indicate that PJ has not carried out oversight responsibilities in regards to subrecipients/state recipients or has not reviewed performance of subrecipients/state recipients within the last two program years.

I. **OIG Audit**
Maximum of 2 points

An OIG Audit is scheduled or currently underway and a final report has not been issued **OR** a previous OIG Audit identified one or more recommendations that have not been cleared and the grantee is not on schedule for carrying out such recommendations as of the date of this review.

J. **On-Site Monitoring**
Maximum of 15 points

HUD has not conducted an on-site monitoring of the HOME program for this grantee within the last two program years **OR** there are one or more overdue open findings.

K. **Environmental/ Relocation**
Maximum of 2 points

The grantee has not demonstrated a record of program compliance or currently has known compliance problems with either Environmental (Part 50 or 58) or Uniform Relocation Acquisition Act requirements.

Factor 4—Satisfaction

A. **Citizen Complaints**
Maximum of 5 points

Citizen complaints have been received during the most recently completed program year through such sources as: citizen letters, phone calls, hot line complaints, newspapers articles, etc., and when considering the PJ's response resulted in violations of HOME regulations or findings.

HOME subfactors, continued

B. Responsiveness *Maximum of 2 points*	Grantee has failed to respond to complaints and/or citizen inquiries forwarded through HUD within prescribed timeframes during the most recent program year.

Factor 5—Services

A. Income Targeting *Maximum of 3 points*	Income determinations procedures have not been monitored within the most recent three program years, **OR** the previous monitoring has found that the PJ did not meet income-targeting requirements or was incorrectly determining income.
B. Program Progress *Maximum of 5 points*	PR 22 report (IDIS Report), HOME SNAPSHOT or other information show that more than 20% of PJ projects are not moving from commitment to construction and from construction to completion within prescribed timeframe **OR** PR 16 and 22 indicate that occupancy data is not being entered for completed projects.

ESG subfactors

Factor 1—Financial

A. Grant Amount *Maximum of 5 points*	The community's grant amount for the most recently completed program year falls within the top quartile of all ESG funded communities within the Office's jurisdiction for the same program year.
B. Audits *Maximum of 5 points*	An A-133 audit due for the most recently completed reporting period or any previous reporting period within the three most recent program years has not been submitted to the Federal Audit Clearinghouse within prescribed timeframe **OR** a grantee has open findings and is overdue in carrying out any agreed upon corrective action.
C. 24 Month Expenditure Provisions *Maximum of 5 points*	The grantee has failed to carry out activities that would provide for all funds to be expended within the most recent 24-month timeframe as evidenced by the most currently submitted CAPER and other reports as of the date of this review.
D. Financial Compliance *Maximum of 5 points*	During the most recent program year, staff has demonstrated an inability to administer the financial management responsibilities for the ESG program as evidenced through one or more violation of regulations or deficiencies of Part 85, Part 84, A-87 or A-110 **OR** one or more vacancies for key financial management staff of ESG programs have existed for more than six months (Key financial management staff is defined as staff with direct oversight of financial records and or distribution of program funds).

Factor 2—Physical

A. Rehabilitation *Maximum of 10 points*	HUD has not conducted an onsite review of the physical conditions of any ESG rehabilitation project in more than three program years **OR** previous monitoring (on-site or remote) identifies findings concerning the physical condition of ESG rehabilitated properties **OR** the grantee has not met its services obligation (either ten or three years as applicable).

Factor 3—Management

A. Program Complexity *Maximum of 5 points*	Grantee undertakes three or more activities provided for at 24 CFR 576.21 OR uses a sub-recipient to assist in carrying out such activities; **OR** activities are being currently undertaken that have not been carried out since the grantee was last monitored on site for the ESG program.
B. Timely and Accurate Submissions *Maximum of 5 points*	One and/or more of grantee's required submissions are incomplete **OR** are received 30 days or more after prescribed timeframes. This includes: Consolidated Plans, Annual Actions Plans and CAPERS during the most recent program year.
C. Program Administration CAP *Maximum of 5 points*	The grantee has exceeded the administration CAP for the ESG program for the most recently completed program year.
D. Staff Capacity *Maximum of 5 points*	During the most recent program year, staff has demonstrated an inability to administer the ESG program as evidenced through one or more violations of regulations or monitoring findings related to the ESG program that the grantee has failed to resolve within the last six months **OR** there are one or more vacancies for ESG key staff have existed for more than six months **(Key staff is defined as staff with assigned management and administrative responsibilities for program compliance with rules and regulations)**.
E. OIG Audit *Maximum of 3 points*	An OIG Audit is scheduled or currently underway and a final report has not been issued **OR** a previous OIG Audit identified one or more recommendations that have not been cleared **AND** the grantee is not on schedule for carrying out such recommendations as of the date of this review.

ESG subfactors, continued

F. On-Site Monitoring *Maximum of 15 points*	HUD has not conducted an on-site monitoring of the ESG program for this grantee within the last two program years **OR** there are one or more overdue open findings.
G. Staff Costs *Maximum of 5 points*	Staff operating costs are classified improperly **OR** have exceeded ten percent of annual allocation during the most recently completed program year.
H. Environmental/ Relocation *Maximum of 2 points*	The grantee has not demonstrated a record of program compliance or currently has known compliance problems with either Environmental (Part 50 or 58) or Uniform Relocation Acquisition Act requirements.

Factor 4—Satisfaction

A. Citizen Complaints *Maximum of 5 points*	Citizen complaints have been received during the most recently completed program year through such sources as: citizen letters, phone calls, hot line complaints, newspapers articles, etc., and when considering the grantee's response resulted in violations of ESG regulations or findings.
B. Responsiveness *Maximum of 5 points*	Grantee has failed to respond to complaints and/or citizen inquiries forwarded through HUD within prescribed timeframes during the preceding program year.

Factor 5—Services

A. Meeting Program Objectives *Maximum of 5 points*	Sanctions have been placed on grantee for failing to meet program requirements during the most recently completed program year **OR** the grantee is not complying with sanctions that were previously placed on them within the three most recent program years **OR** there are known problems identified through review of reports or information received that indicate grantee is currently not in compliance or is carrying out ineligible activities.
B. Homeless Prevention *Maximum of 5 points*	Homeless prevention activities are classified improperly **OR** exceed more than 30 percent of the annual allocation during the most recently completed program year.
C. Essential Services *Maximum of 5 points*	Essential services activities are classified improperly **OR** exceed more than 30 percent during the most recently completed program year and no waiver was granted.

HOPWA subfactors

Factor 1—Financial

A. Audits *Maximum of 5 points*	An A-133 audit due for the most recently completed reporting period or any previous reporting period within the three most recent program years has not been submitted to the Federal Audit Clearinghouse within prescribed timeframe **OR** a grantee has open findings and is overdue in carrying out any agreed upon corrective action.
B. Timely Expenditures *Maximum of 10 points*	A grantee's performance has been untimely in the expenditure of funds in accordance with program requirements **OR** a prior problem of this nature was not resolved as of the date of this assessment.
C. Size of funding *Maximum of 5 points*	The total amount of unexpended balances under the program as of the date of this review is $2,000,000 or more.
D. Financial Compliance *Maximum of 5 points*	During the most recent program year, staff has demonstrated an inability to administer the financial management responsibilities for the HOPWA program as evidenced through one or more violation of regulations or deficiencies of Part 85, Part 84, A-87 or A-110 **OR** one or more vacancies for key financial management staff of HOPWA programs have existed for more than six months (Key financial management staff is defined as staff with direct oversight of financial records and or distribution of program funds).

Factor 2—Physical

A. Existing or Previous Physical Asset Problems *Maximum of 5 points*	A problem or finding has been identified in the development, maintenance or operation of a HOPWA-funded physical asset or other physical site-related activity; and has not been resolved as of the date of this review **OR** the physical asset has not been monitored within the most recent three program years.

HOPWA subfactors, continued

B. Acquisition, Construction and Rehabilitation of Physical Assets *Maximum of 5 points*	HOPWA funds were used for the acquisition or construction or rehabilitation of twenty-four or more units of a physical asset within the most recent three program years.
C. Multiple Sites for Physical Assets *Maximum of 5 points*	HOPWA funds are used for the development, or maintenance or operation of physical assets at more than 7 current facility sites within the most recent three program years.

Factor 3—Management

A. OIG Audit *Maximum of 3 points*	An OIG Audit is scheduled, or is currently underway and a final report has not been issued, **OR** a previous OIG Audit identified one or more recommendations that have not been cleared, and the grantee is not on schedule for carrying out such recommendations as of the date of this review.
B. Staff Capacity *Maximum of 10 points*	During the most recent program year, staff has demonstrated an inability to administer the HOPWA program as evidenced through one or more violations of regulations, or monitoring findings related to the HOPWA program that the grantee has failed to resolve within the last six months **OR** there are one or more vacancies for HOPWA key staff have existed for more than six months (Key staff is defined as staff with assigned management and administrative responsibilities for program compliance with rules and regulations).
C. On-Site Monitoring *Maximum of 15 points*	HUD has not conducted an on-site monitoring of the HOPWA program for this grantee within the last three program years OR there are one or more overdue open findings.
D. Timely and Accurate Submissions *Maximum of 5 points*	One and/or more of grantee's required submissions are incomplete **OR** are received 30 days or more after prescribed timeframes. This includes: Consolidated Plans, Annual Action Plans, PERS and CAPERS during the most recent program year.
E. Program Administration CAP *Maximum of 2 points*	The grantee has exceeded the administration CAP for the HOPWA program for the most recently completed program year.
F. Environmental/ Relocation *Maximum of 5 points*	The grantee has not demonstrated a record of program compliance, or currently has known compliance problems with either Environmental (Part 50 or 58) or Uniform Relocation Acquisition Act requirements.

Factor 4—Satisfaction

A. Citizen Complaints *Maximum of 5 points*	Citizen complaints have been received during the most recently completed program year through such sources as: citizen letters, phone calls, hot line complaints, newspapers articles, etc., and when considering the grantee's response resulted in violations of HOPWA regulations or findings.
B. Responsiveness *Maximum of 5 points*	Grantee has failed to respond to complaints and/or citizen inquiries forwarded through HUD within prescribed timeframes during the most recent program year.

Factor 5—Services

A. Meeting Program Objectives *Maximum of 5 points*	Sanctions have been placed on grantee for failing to meet program requirements during the most recently completed program year **OR** the grantee has not taken corrective actions to address outstanding sanctions that were previously placed on them within the three most recent program years **OR** there are known problems identified through review of reports or information received that indicate grantee is currently not in compliance, or is carrying out ineligible activities.
B. Multiple Sponsors *Maximum of 5 points*	A grantee carries out a program with five or more sponsors **AND/OR** the grantee or sponsor receives funding from more than two additional entities (e.g., HHS, State, City, Foundation, etc.) within the most recent three program years