

November 2000

# HUD INSPECTIONS

## Steps Needed to Address Uncertainty in Inspection Scores



G A O

Accountability \* Integrity \* Reliability





**United States General Accounting Office**  
**Washington, D.C. 20548**

November 8, 2000

The Honorable Andrew M. Cuomo  
The Secretary of Housing and  
Urban Development

Dear Mr. Secretary:

In 1997, the Department of Housing and Urban Development (HUD) created the Real Estate Assessment Center (REAC) to, among other things, administer physical inspections of HUD's public and multifamily housing properties. REAC's new inspection system uses data gathered by inspectors to calculate scores that measure the physical condition of HUD's properties—that is, the extent to which the properties are safe, decent, and in good repair. REAC then uses these scores, which range from 0 to 100, to determine what follow-up is needed to address the problems identified during the inspections. Soon, REAC will also use these scores to determine when properties should be reinspected. The new system does not require the inspection of all units and buildings within each property because HUD's housing inventory is large and its resources for inspections are limited; instead, for most properties, the system provides for inspecting samples of units and buildings. Sampling introduces a degree of uncertainty, called sampling error, which statisticians commonly express as a range associated with numerical results, such as REAC's property inspection scores. Sampling error is a routine and accepted outcome of sampling.

We reported on various aspects of REAC's physical inspection program in July 2000.<sup>1</sup> Although we found that REAC's system improved on HUD's previous inspection systems, we also found that weaknesses in the system's quality assurance procedures limited REAC's effectiveness in ensuring the reliability of the inspections. We also found some sampling and statistical issues that affect the reliability of the inspection scores. As agreed with the requesters of our July report, we are transmitting this report to you on the impact of sampling on inspection scores. Specifically, this report examines (1) how REAC accounts for sampling error when calculating and reporting inspection scores and (2) whether the formula

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<sup>1</sup>*HUD Housing Portfolios: HUD Has Strengthened Physical Inspections but Needs to Resolve Concerns About Their Reliability* (GAO/RCED-00-168, July 25, 2000).

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that REAC uses to calculate inspection scores is consistent with the sampling procedures it uses to select buildings and units.

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## Results in Brief

Although REAC uses sampling to select units and buildings for inspection, it did not, at the time of our review, routinely calculate the sampling error associated with the physical condition score assigned to each property. REAC did, however, study the effects of sampling for about 8,800 out of 40,000 properties. Our analysis of these data indicates that the sampling error for about 71 percent of the properties was 3 or fewer points, but for less than 1 percent of the properties, it was much higher—from 8 to 19 points. Further analysis identified instances when the sampling error was great enough to create uncertainty about whether the properties' inspection scores fell above or below the administrative thresholds that HUD uses to determine what follow-up actions its field offices should take or when the property should be reinspected. For example, we found such uncertainty associated with about 8 percent of the multifamily properties whose inspection scores we analyzed. HUD recently agreed to take actions to address our concerns about its treatment of sampling error. These actions include routinely calculating the sampling error for each inspection score and revising the procedures for determining what key follow-up actions are needed when the sampling error would otherwise create uncertainty about the appropriate action for the property. When implemented, these actions should address our basic concerns.

Under the sampling procedure that REAC uses as part of its physical inspection process, buildings and units do not always have the same chance of being included in an inspection sample. This sampling procedure is acceptable, but the formula REAC uses to calculate inspection scores is not consistent with the procedure. As a result, some inspection scores are inaccurate. According to REAC's analysis of data for about 5,000 properties, correcting the formula to account for the probability of units' and buildings' inclusion in a sample changed the scores of about 30 percent of the properties inspected. For most of the properties whose scores changed, the change was minimal; however, for about 1.4 percent of the properties, the scores changed by 4 to 9 points—enough, potentially, to affect REAC's decisions about the type of follow-up and the frequency of reinspection. HUD's plans for changing its sampling and scoring processes should, when implemented, address our concerns.

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## Background

To ensure that families living in rental housing that is owned, insured, or subsidized by HUD have decent, safe, and sanitary accommodations, REAC conducts annual inspections of public housing and multifamily properties. For its first round (or baseline) of inspections, REAC inspected over 3,100 public housing authorities with 13,607 properties and 26,528 privately owned multifamily properties—a total of 40,135 properties. Public housing serves low-income families, the elderly, and persons with disabilities and is operated by public housing authorities using funds provided by HUD. Privately owned multifamily housing includes properties that receive some form of rental assistance, including Section 8 assistance, from HUD; properties whose mortgages are insured or held by HUD; and properties that are financed by HUD.<sup>2</sup>

During an inspection, an inspector enters observations into a hand-held computer and then electronically submits the data to REAC for verification and calculation of a score ranging from 0 to 100. Using this scoring range, HUD establishes administrative thresholds to determine what follow-up actions its field offices need to take and how soon the properties need to be reinspected. The thresholds for multifamily and public housing properties differ somewhat. Multifamily properties with scores below 60 are subject to greater follow-up requirements than properties with scores of 60 or higher, and properties with scores of 30 or below are referred to the Departmental Enforcement Center. Furthermore, multifamily properties that score below a certain threshold will be reinspected annually, whereas properties with higher scores will be reinspected less frequently. In November 2000, HUD expects to issue a final rule with the thresholds for reinspections of multifamily properties.

The follow-up requirements for public housing are more complex. A public housing authority receives a physical condition score for each of its public housing properties. The properties' scores are then combined into an overall indicator of the physical condition of the housing authority's properties. The indicator for physical condition is then combined with three other indicators, derived from assessments of the housing authority's financial health, management operations, and residents' satisfaction, to arrive at an overall score for the housing authority. Starting June 30, 2000,

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<sup>2</sup>Currently, HUD inspects housing that receives Section 8 project-based assistance ("project-based" assistance is attached to the structure, whereas "tenant-based" assistance is attached to the resident).

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HUD's policy has been to use this overall score to determine what follow-up actions its field offices need to take, as well as how soon the housing authority's properties should be reinspected. (Previously, HUD treated the scores for public housing authorities as advisory—i.e., nonbinding.<sup>3</sup>) When a housing authority receives an overall score below 70, HUD will generally require it to develop a formal improvement plan, and when an authority receives an overall score below 60, HUD will designate it as "troubled" and refer it to the Troubled Agency Recovery Center. Conversely, when a housing authority receives an overall score of at least 90, it may be designated as a "high performer." High-performing housing authorities that also receive a physical condition score of at least 90 will be reinspected every other year, rather than annually. The purpose of the thresholds for both multifamily and public housing is to allow HUD to concentrate its monitoring resources on properties with lower scores.

Most physical inspection scores are based on inspections that cover a sample of units or buildings. The results for the sample of units or buildings are then used to estimate a score that represents the condition of the entire property. REAC's protocol requires inspectors to inspect a statistical sample of units or buildings. HUD officials told us that sampling was the most cost-effective way to ensure that all properties get inspected. However, sampling introduces some uncertainty into the final inspection score. This uncertainty, or lack of precision, can be estimated using a measure called sampling error.

Because REAC employs a sampling procedure (called probability sampling) to select the sample of units and buildings used to estimate a property's physical condition score, each property's estimated score has a measurable precision, or sampling error, which may be expressed as a plus/minus figure. A sampling error indicates how closely HUD can reproduce from a sample the score that HUD would have obtained if all units and buildings at the property had been inspected. By adding the sampling error to and subtracting it from the estimate, HUD can develop upper and lower bounds for each property's estimated physical condition score. This range is called a confidence interval. Sampling errors and confidence intervals are stated at a certain confidence level—for example, 95 percent. A confidence interval, at the 95-percent confidence level, means

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<sup>3</sup>Prior to June 30, 2000, HUD reported the scores to housing authorities for informational purposes, requiring only that they correct any life-threatening health and safety violations found during inspections.

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that in 95 out of 100 instances, the sampling procedures that REAC used would produce a confidence interval containing the physical condition score that would have been obtained if all units and buildings at the property had been inspected.

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## Sampling Leads to Uncertainty About Follow-up Requirements

Nearly all of the properties that HUD inspects using the new physical inspection protocol are subject to a sampling of units, and a much smaller percentage are subject to a sampling of buildings. However, we found that, in its baseline inspections, HUD did not routinely estimate or consider the sampling error for each score. Using the information that REAC provided for a subset of inspected properties, we found that the sampling error was generally no more than 3 points, but for less than 1 percent of the properties, it was much higher—from 8 to 19 points. As a result, sampling caused some uncertainty about the appropriate type of follow-up required for some properties.

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## Sampling Error Varies Widely

Under its new physical inspection protocol, HUD inspects a sample of units for about 95 percent of the 40,000 properties it inspects, and for about 20 percent of the properties, it inspects a sample of buildings. We asked REAC for information on the sampling error of the physical condition scores it had estimated for inspected properties. REAC provided us with the data it had used to study the effects of its current sampling procedures on 8,813 properties—6,291 multifamily and 2,522 public housing properties.<sup>4</sup> Using REAC's information, we computed the sampling error for these properties. We determined that the sampling error was 3 or fewer points for about 70 percent of the 8,813 properties. However, the sampling error varied widely—from 0 to 19 points—as shown in table 1.

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<sup>4</sup>HUD's current sampling procedures require the inspection of no more than 27 units, when dwelling units are sampled, and no more than 27 buildings with dwelling units, when buildings are sampled. The actual number of units and buildings sampled depends on the number of units and buildings in the property. For example, any property with more than 1,461 units would have 27 units sampled for inspection.

**Table 1: Sampling Error for 8,813 Physical Inspection Scores**

Sampling error in points			
Sampling error of score	Frequency	Percent	Cumulative percent
0	1,884	21.4%	21.4%
1	1,497	17.0%	38.4%
2	1,543	17.5%	55.9%
3	1,341	15.2%	71.1%
4	1,130	12.8%	83.9%
5	782	8.9%	92.8%
6	441	5.0%	97.8%
7	143	1.6%	99.4%
8	28	0.3%	99.7%
9	11	0.1%	99.9%
10-19	13	0.1%	100.0%
<b>Total</b>	<b>8,813</b>	<b>100%</b>	

Note: The sampling error, rounded to the nearest whole point, is calculated at the 95-percent confidence level for inspections using the current maximum sample size of 27. We multiplied the standard error, supplied by REAC, by a t-value of 2 to obtain the sampling error. REAC's samples ranged from 5 to 27 units. The appropriate t-values were 2.776 and 2.056 when the numbers of units sampled were 5 and 27, respectively. Because we used a t-value that was consistently lower than appropriate, our estimates somewhat understate the sampling error. We could not use the appropriate t-value because the data we obtained did not include the number of units sampled.

Source: GAO's analysis of REAC's data.

### Sampling Caused Uncertainty About Follow-up for Some Multifamily Properties

Multifamily properties are placed in one of four categories, depending on their inspection scores. Properties with scores of 60 and above are required only to correct deficiencies found during inspection, whereas properties with lower scores have additional requirements. When a property's physical condition score is from 31 through 59, a HUD field office imposes follow-up requirements. When the score is 30 or below, the property is referred to the Departmental Enforcement Center. Table 2 lays out the different requirements for multifamily properties.

**Table 2: Follow-up Requirements for Multifamily Properties Based on Their Inspection Scores**

<b>Physical inspection score</b>	<b>Follow-up requirement</b>
60 and above	No certification or corrective plan is required unless the field office requests one.
46 – 59	The HUD field office requires the property owner to inspect all units and buildings and develop a plan of correction. The plan should give the results of the owner's own inspection, list corrections already made to identified deficiencies, discuss plans to correct the remaining deficiencies, and list the resources to be used by the owner to make repairs.
31- 45	In addition to complying with the requirements for properties that received scores from 46 through 59, the property owner must develop a management improvement plan and complete its goals for correcting deficiencies. The field office can require another inspection to confirm the completion of repairs.
30 and below	The property is referred to the Departmental Enforcement Center (DEC) for evaluation. DEC conducts an evaluation to confirm that the property should be assigned to it. The property owner is required to develop a plan to correct deficiencies, and the field office is required to ensure that all health and safety deficiencies are corrected in a timely manner.

Note: At all properties, regardless of score, deficiencies found during inspection must be corrected. Moreover, life-threatening health and safety deficiencies are expected to be corrected within a certain time frame, usually within a few days of the inspection.

Using information provided by REAC on 6,291 of the over 26,000 multifamily properties it inspected, we determined the follow-up category to which each property would have been assigned, given its reported physical inspection score. We then determined, after considering the sampling error of the estimated score, whether HUD could be confident that the property would have been placed in the same follow-up category if its score, based on a full inspection of all of its buildings and units, had been known. For example, if a property's score, based on a sample, was 33 and the sampling error for the estimated score was plus or minus 5, the resulting confidence interval would range from 28 through 38. HUD therefore could not be sure whether this property belonged in the "30 and below" or the "31-45" category. As shown in table 3, sampling produced uncertainty about the appropriate requirements for 7.6 percent of the 6,291 multifamily properties tested.

**Table 3: Follow-up Referrals for 6,291 Multifamily Properties**

Follow-up category based on physical inspection score of	Number of properties placed in category	Properties whose placement in category was questionable after sampling error was considered	
		Number	Percent
60 and above	5,684	157	2.8%
46-59	384	218	56.8%
31-45	150	90	60.0%
30 and below	73	16	21.9%
<b>Total</b>	<b>6,291</b>	<b>481</b>	<b>7.6%</b>

Note: For an additional 4 to 6 percent of the multifamily properties, we could not tell whether the scores were reliable enough to place the properties in the correct follow-up category. The sampling error for these properties appeared to be reported as 0 simply because no variation in physical condition was observed among the sampled units or buildings. In such cases, the sampling error cannot be calculated, and we could not tell whether the score could reliably be used to determine the appropriate follow-up actions for the property. We assumed that appropriate actions could be determined for these properties, but, in so doing, we may have understated the percentage of properties whose categories may be affected by sampling error.

Source: GAO's analysis of REAC's data.

Besides using the physical condition scores to determine the follow-up requirements for multifamily properties, HUD plans to use the scores to determine how soon the properties will be reinspected once it issues the scoring thresholds for reinspection. For some properties, such decisions will also be subject to uncertainty because of sampling error.

Sampling will also cause uncertainty for some public housing properties. Once the public housing scores become binding, HUD will use the scores to determine the follow-up and reinspection requirements for public housing properties. However, the effect of sampling may be lessened for two reasons. First, the thresholds will be based on the physical condition of all properties within an authority. Second, the thresholds will be based on a number of factors in addition to the physical inspection score, including the authority's financial health and management.

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REAC officials told us that REAC has established many safeguards to ensure that the physical inspection process is accurate and fair. These include quality assurance activities at various levels of the inspection process, technical reviews of inspections, appeals procedures, and postinspection reviews. They said that all of these processes can be used to help address concerns about the accuracy and reliability of inspections. However, none of these processes directly deal with uncertainties in inspection scores stemming from sampling error.<sup>5</sup>

In an August 2000 meeting, REAC's Director told us that REAC was planning, on the basis of discussions with us about sampling issues, to calculate confidence intervals for all inspection scores for internal use. In addition, for properties whose scores are close to the administrative thresholds HUD uses in determining follow-up actions (30 and 60), REAC would request that HUD field offices consider other information on the condition of these properties to help ensure that they are placed in the appropriate follow-up category. Finally, for other properties whose scores are associated with unusually large sampling errors, REAC would examine the reasons for the large sampling errors and either take actions to reduce the errors or alert the appropriate HUD field offices if there is uncertainty about what follow-up actions should be taken.

In its October 13, 2000, letter commenting on our draft report, HUD stated that it plans to use an alternative approach for addressing our concerns about sampling error. HUD is now proposing that when the confidence interval for a property's inspection score crosses one of its key administrative thresholds for determining follow-up actions (30 or 60 points), it will adjust the score downward so that the property will be treated as if its score falls into the follow-up category requiring more intensive monitoring. While this approach differs somewhat from the approach that HUD proposed in the August 2000 meeting and that we had discussed with REAC officials, we believe that it should still address our basic concerns.<sup>6</sup>

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<sup>5</sup>Our July report discusses other concerns about the reliability of REAC's inspection scores.

<sup>6</sup>The approaches that we had discussed generally focused on having HUD program offices perform additional analyses for properties whose scores could not be relied on to ensure that appropriate follow-up actions were taken. For example, if there were uncertainty due to sampling error about whether a property's score was above or below 60, staff might take into account the owner's past responsiveness in addressing physical defects when determining whether a written corrective action plan should be required.

We recognize that HUD’s proposal focuses on two key administrative thresholds (30 and 60 points) and does not specifically cover other administrative thresholds that HUD uses to determine follow-up or reinspection requirements. However, the fact that HUD will routinely calculate the sampling error for all inspection scores should help it determine the extent to which sampling may cause uncertainty about decisions in these areas as well. This should put HUD in a good position to continue identifying strategies and opportunities to mitigate the effects of uncertainty caused by sampling.

## REAC’s Scoring Formula Is Not Consistent With Its Sampling Technique

REAC attempted to reduce the sampling error associated with its inspection scores by giving buildings with a large number of units a greater chance of being selected for inspection than other buildings. Although the use of such a sampling procedure is acceptable, the formula that REAC used to calculate the inspection scores was not consistent with this sampling approach. REAC used a formula that was appropriate only when all units and all buildings with dwelling units at a property had an equal chance of being inspected. As a result, HUD incorrectly calculated some inspection scores. HUD tested a method for calculating the score that corrected this problem, using data for 5,030 properties, and found that the revision changed the scores of about 30 percent of these properties (see table 4).

**Table 4: Change in Physical Condition Score After Accounting for the Probability of Selection for Inspection**

Change in points		
Change in score	Number of properties	Percentage of properties
0	3,561	70.8%
1	1,058	21.0%
2	258	5.1%
3	84	1.7%
4–9	69	1.4%
<b>Total</b>	<b>5,030</b>	<b>100.0%</b>

Source: GAO’s analysis of REAC’s tables.

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While the scores of 97 percent of the properties tested changed by no more than 2 points, the scores for 69 (or 1.4%) of the 5,030 properties changed by 4 to 9 points. As noted, when a score changes by even one point, the follow-up requirements can change. Among the 69 properties whose scores changed by 4 or more points, REAC identified 6 properties whose follow-up requirements could have been affected.<sup>7</sup> For example, one multifamily property in this analysis received a score of 64. Given this score, HUD would not have required a corrective plan for the property. However, when the differing probabilities of buildings' and units' selection for inspection were considered, the property received a score of 58 points. With this score, the HUD field office would require the owner to inspect all of the property's units and buildings and develop a corrective plan to ensure the repair of all deficiencies.

REAC agrees that, for complete accuracy, the scores estimated from samples of units and buildings should account for differing probabilities of selection. In an August meeting, REAC officials told us they were introducing new sampling procedures that would nearly equalize the chance that each of a property's dwelling units would be selected for inspection. They said that information obtained during the baseline inspections made the new sampling method feasible.

In its October 13, 2000, letter commenting on our draft report, HUD agreed to take further actions to address our concerns. HUD said it would change its sampling procedures to obtain a self-weighting sample of units and modify the inspection-scoring algorithm to include the probability of selection for sampled buildings. These actions, when implemented, should address our concerns in this area.

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## Conclusions

We understand REAC's need to sample buildings and units when performing physical inspections and recognize the inherent uncertainty associated with sampling. However, it is important for REAC to recognize both the extent to which this uncertainty affects its inspection scores and the need for appropriate procedures to mitigate the effects of the uncertainty. The actions that HUD is proposing to take in response to our concerns about its sampling procedures should, we believe, basically address these concerns.

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<sup>7</sup>REAC did not provide information on how frequently the changes in the scores for the other 1,400 properties affected their follow-up requirements.

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## Agency Comments and Our Evaluation

We provided HUD with a draft of this report for its review and comment. HUD said that to resolve our concerns, it has revised its procedures to ensure that all inspected properties are properly and consistently monitored in accordance with risk management practices and it will alter scoring-related processes to increase precision.

More specifically, to address the recommendations we made in our draft report, HUD stated that it would begin calculating the confidence interval for every inspection score. In addition, HUD said that when the confidence interval for a property's inspection score crossed one of the key administrative thresholds for determining follow-up actions (30 or 60 points), it would adjust the score downward so that the property would be treated as if its score fell into the follow-up category requiring more intensive monitoring by HUD. According to HUD, this action would reduce or eliminate the risk of inadequate monitoring. HUD noted that it expected this action would affect only about 3 percent of its multifamily properties and that the benefits of increased scrutiny would exceed the inconvenience to a small number of property owners.

HUD also agreed to change its data collection, scoring, and reporting processes to incorporate new sampling procedures in its inspection data collection device to obtain a self-weighting sample of units, modify the inspection-scoring algorithm to include the probability of selection for sampled buildings, and modify its inspection summary report to show the probability of selection for sampled buildings.

We revised our report to include the actions HUD is proposing. We also dropped our draft report's recommendations for improvements in these areas, since HUD's actions, when implemented, should address our basic concerns about HUD's sampling procedures. The complete text of HUD's comments appears in appendix I.

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## Scope and Methodology

To determine whether REAC's procedures were producing inspection scores that could reliably be used to determine the appropriate follow-up requirements for inspected properties, we reviewed REAC's current sampling procedures and discussed these procedures with the appropriate REAC officials. We also obtained REAC's calculations of standard errors and scores for 8,813 properties—including 6,291 multifamily and 2,522 public housing properties—inspected using the current sampling procedures. We calculated the sampling error for each property using its

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inspection score and standard error. From the 6,291 multifamily properties, we identified those for which the sampling error introduced uncertainty about the appropriate follow-up action.

To determine whether the method used to compute scores was correctly estimating the score a property would have received if the entire property, and not just a sample of its dwelling units or buildings, had been inspected, we reviewed REAC's documentation for sampling procedures and formula for calculating scores. We obtained REAC's analysis of how the scores for 5,030 properties would change if the formula were changed. We also discussed REAC's procedures and analysis with appropriate REAC officials. We conducted our work from December 1999 through October 2000 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to Honorable Rick Lazio, Chairman, and the Honorable Barney Frank, Ranking Minority Member, Subcommittee on Housing and Community Opportunity, House Committee on Banking and Financial Services, who requested our July 2000 report on HUD's physical inspection system. We will also make copies of this report available to others on request. If you or your staff have any questions about this report, please call me at (202) 512-7631. Key contributors to this report were Karen Bracey, Martha Chow, and Richard Hale.

Sincerely yours,

A handwritten signature in black ink that reads "Stanley J. Czerwinski". The signature is written in a cursive, flowing style.

Stanley J. Czerwinski  
Director, Physical Infrastructure Issues

# Comments From the Department of Housing and Urban Development

U.S. Department of Housing and Urban Development  
1280 Maryland Avenue, SW  
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Washington, D.C. 20410-0100



REAL ESTATE ASSESSMENT CENTER

OCT 13 2009

Stanley J. Czerwinski  
U. S. General Accounting Office  
441 G Street, NW  
Washington, DC 20548

Dear Mr. Czerwinski:

The Department of Housing and Urban Development has examined the United States General Accounting Office's draft report titled "HUD Inspections—Steps Needed to Address Uncertainty in Inspection Scores" (Job Code 385874). HUD would like to thank the United States General Accounting Office for the opportunity to work with them as they performed the audit of the new physical inspection protocol and process at HUD.

To fully resolve all concerns raised in the draft report, HUD has revised its procedures to assure that all inspected properties are properly and consistently monitored based on risk management practices and will alter scoring related processes to increase precision. The actions described in this letter represent a change from earlier talks with the GAO, but the changes were necessary based on further discussions with the Offices of Housing and Public Housing. Unlike our earlier direction, this alternate approach increases HUD's efficiency and effectiveness by directing resources, not to all properties, but to a specific set of properties, within specifically identified score ranges. The changes to our operating methods are straightforward and we believe that all concerns, raised in the draft audit report, are entirely mitigated. Based on our discussions during this audit, we are of the opinion that GAO agrees with and supports the HUD methods for scoring and also supports our approach to address their concerns as more fully described in this letter.

The GAO report discusses the fact that "sampling error" is a *normal and standard outcome from using statistical methods*. Sampling is a common practice in all business and government applications, where it is important to estimate outcomes, while controlling costs. Sampling does not 100% guarantee an outcome, but provides reasonable confidence that decisions based on the outcomes are appropriate. Sampling of units and buildings in the HUD portfolio is essential to control inspection costs of operations. One alternative to sampling, an inspection of all buildings and units, could increase costs as much as three times over present levels.

The first GAO issue revolves around a concern that some properties may not receive adequate monitoring unless HUD takes into account confidence intervals that

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**Appendix I  
Comments From the Department of Housing  
and Urban Development**

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span key administrative thresholds. This issue arises in a small number of instances where scores are close to one of HUD's major administrative thresholds, specifically 30 or 60 points. HUD's objective in the inspection program is to *reliably identify* properties that are not maintained in decent, safe and sanitary condition and then *act, promptly and efficiently*, to correct conditions/defects that do not meet acceptable standards. The risk that HUD does not apply appropriate levels of monitoring, to the properties with confidence intervals spanning the 30 or 60 point thresholds, is small. However the estimated cost to assure that the calculated score results in absolutely correct monitoring is high. To eliminate the potential for mis-monitoring without adding significant cost, HUD has decided to adopt specific procedures to address the GAO concerns and reduce the likelihood of inadequate monitoring.

First, HUD will calculate all actual confidence intervals for every inspection. As this calculation is routinely performed, HUD will take action to assure an adequate level of oversight. Specifically, when a property score is at or above either the 30 or 60 point administrative threshold, **and** the confidence interval for the inspection score crosses an administrative threshold requiring enhanced monitoring, the score will be adjusted downward to the lower administrative action level. In this way, HUD can assure that the risk from inadequate monitoring is reduced or eliminated. A small number of property owners will be inconvenienced, but HUD believes that the overall benefits from the increase in monitoring scrutiny exceed the inconvenience that may be experienced. HUD believes, based on present information that this policy will not impact more than approximately 3% of the multifamily property inventory (900 cases of approximately 29,000). In addition, the Office of Housing has in place a means by which field offices may, after a specific evaluation of all facts, grant relief from some administrative steps. The Housing protocol documents any decision made in this regard. HUD will advise participants of this revision to policy via appropriate notice.

The second issue raised in the GAO audit discusses changes to the inspection scoring process to improve precision. HUD is changing its data collection, scoring and reporting processes to: incorporate new sampling procedures in the inspection data collection device to obtain a self weighting sample of units, modify the inspection scoring algorithm to include the probability of selection of sampled buildings and will modify the inspection summary report to show the probability of selection of sampled buildings.

The adoption of the procedures discussed in this letter eliminates the concerns of GAO in the draft audit. These procedural changes further increase the overall objective of HUD to assure decent, safe and sanitary housing for all tenants of HUD housing. The HUD inspection protocol is defect driven and whenever observed defects are corrected, conditions for tenants are improved and the overall risk of loss to HUD decreases. These alterations further the HUD/REAC quality

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**Appendix I  
Comments From the Department of Housing  
and Urban Development**

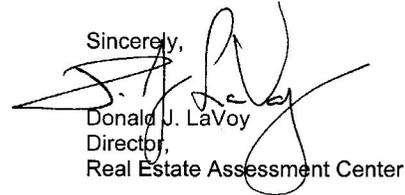
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assurance objectives that already include technical review and database adjustments to ameliorate any potential negative result from errors in the inspection process or local conditions that could not have been foreseen in the development of the inspection protocol.

We look forward to continuing our productive working relationship. Working together we can make the goals of HUD a reality.

Sincerely,



Donald J. LaVoy  
Director,  
Real Estate Assessment Center

cc: Larry McGhee  
Ernie Parker  
Saundra Green  
Jim Martin

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General Accounting Office  
Washington, D.C. 20548-0001**

**Official Business  
Penalty for Private Use \$300**

**Address Correction Requested**

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<p><b>Bulk Rate Postage &amp; Fees Paid GAO Permit No. GI00</b></p>
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