Study of HUD's Site Contamination Policies

Final Report

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EXECUTIVE SUMMARY

ICF Consulting has been engaged by the U.S. Department of Housing and Urban Development to conduct a Study of HUD's Site Contamination Policies. Core questions for this study have focused on whether the Office of Housing should retain or change the policy of the Multifamily Accelerated Processing (MAP) Guide, Chapter 9, which does not permit the use of engineering and institutional controls on properties for which HUD is providing mortgage insurance. Other topics covered included overall systems and staffing for HUD's conducting of environmental review.

Our recommendations regarding Multifamily Housing are as follows:

- **Multifamily Housing should permit the use of "risk-based" methods**, including institutional and engineering controls, *but only if it also upgrades its risk-management capabilities.*

- **Housing must invest in upgrading its analytic capabilities** to manage the financial risk that comes from environmental contamination, independent of whether it permits the use of risk-based methods. We recommend that a small unit be created that includes analysts of financial risk and environmental contamination. This new analytic unit should insist that strict and consistent methods and standards be employed by environmental contractors who submit reports, especially when institutional and/or engineering controls are being used, and have the capacity to analyze such reports and direct further work.

- **The analytic unit should be available to all of HUD.** For a relatively low cost, HUD can have the highest level of guidance on this important area of risk. These analysts can be in-house or contractors. In our view, HUD needs at least some in-house expertise on the interaction of environmental risk and financial risk. Environmental engineering functions can be contractual, as long as there is strong internal oversight.

- **Multifamily Housing should approve applications for mortgage insurance *before* cleanup has occurred, to facilitate making the cleanup costs mortgageable**. Possible approaches that would protect HUD's finances include 1) making final approval contingent on the cleanup being completed successfully, and/or 2) requiring the lender or the developer to purchase environmental insurance.

Recommendations regarding other areas of HUD environmental review include:

- **HUD needs to continue to expand its capabilities to monitor and train localities that are responsible for Part 58 environmental reviews**, if HUD feels compelled to review each locality every three years.

- **HUD should continue its move toward having Field Environmental Officers responsible for all of HUD's offices.**

- **A "fresh look" should be taken at the whole structure of environmental review in the Office of Public and Indian Housing**, where we suspect the system is not functioning well.

Overview of the Study

ICF has been engaged by the U.S. Department of Housing and Urban Development (HUD) to complete a study of HUD's site contamination policies, so as to provide recommendations for how to improve HUD's approach to environmental review. The Office of Policy Development and Research (PD&R) provided funds and the lead staff for this work. PD&R also coordinated an advisory group of HUD staff from HUD's three main development offices (CPD, PIH and Housing), which provided guidance to ICF throughout the study.

There were seven tasks in this study. Each of the first six tasks resulted in a draft memorandum on a specific sub-topic. The purpose of this seventh and final task is to bring all of the tasks together in a final document, and include this Executive Summary. A summary of each Task is provided below.

Task 1 was entitled *Review and Assess State-of-the Art Risk-Based Cleanup Technology*. Work for this task consisted of reviewing published literature related to risk-based cleanup, searching Federal, State, and private Internet sources, and interviewing experts from the Federal government, state governments, and the private sector who could provide information related to current risk-based cleanup issues.

Tasks 2 and 3 were carried out concurrently, with Task 3 being delivered before Task 2 (as per the contractual requirements). Task 2 was entitled *Review and Assess HUD Site Contamination Policies, Procedures and Practices*. The main purpose of this task was to provide a solid grounding in HUD's current approaches to environmental diligence, out of which recommendations could be made.

Task 3 was entitled *Analyze and Assess Site Contamination Policies of Development Agencies*. The main purpose of this task was to understand the approaches that other comparable development organizations take to environmental due diligence. HUD approved the study of eight development organizations, which included federal agencies, a state agency, and private for-profit financial institutions. Federal agencies included the U.S. Department of Agriculture's Rural Housing Service (RHS), the U.S. Department of Commerce's Economic Development Administration (EDA), the U.S. Department of Defense's Base Realignment and Closure program (BRAC), the U.S. General Services Administration's Public Building Service (PBS), and the U.S. Department of Veterans Affairs' Home Loan Guaranty Services program. The state agency was the California Housing Finance Agency. Private financial institutions included Freddie Mac and PNC Bank.

The main methodological tool for these tasks was an analytic matrix, which facilitated our ability to compare and contrast how various HUD Offices and other agencies treated key themes for the study. The data for the matrix were developed and completed through interviews with staff from HUD and eight other agencies; lessons learned from a trip to HUD's Chicago Field Office; and

review of the agencies' regulations, handbooks, procedures, diagrams, Web sites and worksheets. From these resources, ICF not only completed the data in the analytic framework (as best as was possible), we also developed descriptions of the development agencies' policies, procedures and practices. In addition, we were able to identify common themes as well as differences. The common themes and differences were captured in the report for Task 4, *Similarities and Differences: HUD and Other Development Agencies*.

The report for Task 5, *Review and Assess Views of Users of HUD Programs*, was developed through discussions with representatives from cities that manage CDBG and HOME funds, developers, lenders, a public housing authority, and a state housing finance agency information. A site visit to Chicago, as referenced above, added an interactive session to Task 5 that facilitated our understanding of the views of key user types.

Task 6, *Identify and Assess Alternatives do Current Site Contamination Policies*, distills the research findings of this study into key conclusions and recommendations to HUD.

This final report is organized into seven main sections -- an introduction and a section for each of the six reports that were submitted earlier in this project. In the draft reports for Tasks 1, 2, 3 and 5, an Executives Summaries were parts of the deliverables. In this Final Document, these Executive Summaries have been removed for each task. In their places, we have brought the key conclusions for each task forward into this Executive Summary, to serve as an overall summary of the study.

Core Area of Focus and Additional Topics

The primary area of focus for this study has been the policies of Office of Multifamily Housing regarding the management of site contamination, as detailed in Chapter 9 of the MAP Guide. Some HUD staff and outside parties believe that Multifamily Housing is too restrictive in its approach to environmental contamination, stating that Multifamily Housing should: 1) be willing to accommodate "risk-based" cleanup at properties on which Multifamily Housing supports development projects, and 2) permit mortgage insurance to support environmental remediation by permitting approval of mortgage insurance before remediation has been completed. The MAP Guide prohibits both of these approaches.

Some key HUD staff is concerned that this prohibition limits Multifamily Housing's ability to fulfill HUD's development mission of providing affordable housing in "infill" locations. Others contest this point of view and believe that there are plenty of uncontaminated sites appropriate for affordable multifamily development in infill locations. Resolution of this disagreement would require additional research.

In order to understand better the context for Multifamily Housing's approach, HUD asked that ICF understand and characterize HUD's approaches to environmental review. The result was a presentation of HUD's overall construct for environmental review, and the raising of additional relevant concerns. Resources were not sufficient to pursue these other areas in detail, but key topics included HUD's monitoring of localities, staffing, and overall systems within the Office of

Public and Indian Housing. A few conclusions and recommendations were developed and presented in the seven main sections of this study.

Major Conclusions from Tasks 1 - 6

Task 1 – Review and Assess State-of-the-Art Risk-Based Cleanup Methodology

- Risk-based cleanup, broadly understood, is widely and increasingly accepted as the preferred approach to site cleanup under state regulatory programs.

- The technical "state-of-the-art" in risk-based cleanup is embodied in integrated, tiered approaches such as ASTM RBCA, Illinois' TACO, and the Texas TRRP. Many states also employ tiered approaches similar to these examples, while others use less elaborate systems that rely heavily on "look-up" tables and/or simple screening risk equations.

- The apparent diversity in risk-based methodologies used by the states masks an underlying technical similarity. Features common to most systems include: equations that calculate exposure and risk, which are based on equations originally developed for the Federal Superfund programs; conservative target-risk values; and basic assumptions about generic exposure pathways and conditions, which vary depending on the intended use of the land.

- While many risk-based approaches are technically very similar to each other, the regulatory frameworks through which they are implemented are quite variable. Important features common to fully elaborated regulatory programs include: a requirement that regulators comply with expedited schedules for review and approval; the potential for liability relief for those who have conducted a remediation effort; the potential for liability protection for those who have purchased or are managing a property which has been remediated under the program; and policies related to the use of engineering barriers and institutional controls.

- Evidence from the literature and expert interviews indicate a high degree of acceptance of risk-based cleanup, both by regulators and users of the properties (developers, environmental contractors, etc.). Specifically, there is a strong consensus that modern risk-based cleanup approaches are adequately protective of health and the environment, and may even be more protective than previous methods.

- Regulators and users identify two major benefits of risk-based cleanup: 1) reduced remediation costs and 2) increased speed and predictability in the regulatory process. The extent to which these benefits are realized appears to be strongly related to specific regulatory policies, rather than to the technical aspects of cleanup methods.

- Irrespective of regulatory requirements, interviewees suggest that there is a tendency for developers to opt for the most stringent cleanup levels, or for complete contaminant removal, because doing so increases the value of the property and

reduces potential future liability. This tendency is especially true for relatively small and/or lightly polluted sites, where the costs of complete cleanup are not prohibitive.

- Expert opinion is divided on policies related to the use of engineering and institutional controls in conjunction with risk-based cleanup, particularly for residential projects. On one hand, allowing such controls instead of total removal of site contamination, is entirely consistent with the major thrust of risk-based cleanup, which is that cost-effective decisions should take into account all relevant site-specific considerations (including the feasibility of non-removal technologies). On the other hand, there is a deep reluctance in some segments of the remediation community (supported by at least one bad experience) against allowing engineering barriers and institutional controls, based on their belief that the continued effectiveness of such controls is very hard to guarantee.

- State policies regarding the allowance of engineering and institutional controls based on land use reflect this diversity of opinion. A minority of states allows such controls for both residential and non-residential projects, with few limitations. Other states place varying restrictions, up to and including total prohibition, on the use of engineering barriers or institutional controls. Existing data cannot yet support a systematic comparison of performance of programs according to whether they allow institutional and engineering controls. We presume that each program reflects local preferences about how potential risks and liability should be balanced against the need to reduce remediation costs and encourage development.

Task 2 -- Review and Assess HUD Site Contamination Policies, Procedures and Practices

- HUD has multiple systems for conducting environmental review, varying by Office and program.

    - Part 50 – HUD conducts environmental reviews on its own for mortgage insurance programs; when a recipient of HUD funds is not eligible to be a Responsible Entity (RE) under Part 58 and is not a Public Housing Authority; and when an RE is unable or unwilling to conduct a Part 58 review. Most programs under Housing fall under Part 50.
    - Part 58 – This regulation delegates responsibility for conducting environmental review for certain HUD program grants to REs. Most programs under CPD and PIH fall under Part 58.

- In general, HUD retains control under Part 50 when HUD faces direct financial risk as a result of the transaction. This point is discussed further in the Task 3 summary, below.

- HUD's implementation of its Part 58 system in CPD is unique and, for the most part, quite successful. Communication and collaboration occur in many places and help HUD staff to overcome certain deficits.

- Concerns regarding implementation of Part 58 include:

    - HUD does not have strong mechanisms to ensure that environmental policies and procedures are implemented in the field, either in CPD or PIH. In neither case is HUD fulfilling its commitment to the Council on Environmental Quality (CEQ) to make its best efforts to monitor state and local governments every 3 years for compliance with NEPA. HUD made this commitment in exchange for CEQ's agreeing to HUD's establishment of the Part 58 system.
    - HUD Headquarters and Field Staff acknowledge that there are some problems with compliance by local government Responsible Entities.
    - Staffing levels in the field are below the necessary numbers and training/expertise to monitor and ensure compliance.
    - HUD has recently hired new Field Environmental Officers and is taking steps to offer more training opportunities. This new total of approximately 30 FEOs will still not be sufficient to fulfill HUD's commitment to CEQ, but is far better than the 16 FEOs of only one year ago.
    - Part 58 delegation of NEPA review is incomplete in PIH.

- HUD is considering whether to retain Multifamily Housing's prohibition on the use of institutional controls and engineering barriers on sites for which HUD provides mortgage insurance. This prohibition is detailed in the Multifamily Accelerated Processing (MAP) Guide, in Chapter 9, which prohibits the use of caps and active monitoring wells and insists that cleanup be completed before HUD may approve an application for mortgage insurance. Whether to retain or change this approach is a core question for the study.

- Multifamily Housing will also not approve mortgage insurance until after cleanup (full removal) has been complete. As a result, developers are not able to finance remediation through the overall package of financing the development project. In brownfields redevelopment, the trend is toward incorporating the costs of remediation into the cost of the overall development.

- Key impacts of Multifamily Housing's conservative approach are the protection of HUD's financial resources and, for the most part, public health and the environment consistent with HUD's mission and obligations.

- Despite the strict language of MAP Chapter 9, Housing program officers (HUD Directors) in the field do have discretion not to follow the MAP on an individual site. Thus, sites using engineering and institutional controls do, on occasion, get approved. There is no consistent application of these exceptions; and no standards for managing risk in these cases exist.

- Strong arguments on both sides of whether to amend the policies in MAP Chapter 9 rest in questions of fact, science, HUD's technical capabilities, and HUD's mission and obligations. They include:

- *Question of Fact*: There is disagreement over whether there are a sufficient number of available and appropriate clean sites in infill locations, in order not to compromise HUD's development missions by, in effect, ruling out development on certain sites. Resolution of this question would require further study.
- *Question of Science*: There is disagreement within HUD regarding whether engineering and institutional controls (ICs and ECs) are trustworthy in the long run. HUD's question is shared by others, including environmental regulators. U.S. EPA has sponsored "roundtables" to explore this topic.
- *Question of HUD's Technical Capacity*: HUD does not have, at present, in-house capabilities to analyze risk at the level required to assess engineering and institutional controls.
- *Question of HUD's Mission and Obligation*: A natural and predictable tension exists between those who have program responsibilities at HUD and those who have responsibilities to manage HUD's exposure to environmental and financial risk. All parties agree that HUD's mission involves providing affordable housing and community development, and that HUD has the obligation and mission to do so in a manner that is safe and sanitary as well as financially prudent. One of the key challenges of this study is to evaluate the tradeoffs involved in these three elements.

Task 3 – Analyze and Assess Site Contamination Policies of Development Agencies

- The development agencies studied conduct environmental due diligence, but not for the same reasons. The agencies or programs studied do not have environmental protection as part of their core missions (with the exception of EPA, which was studies in this task but is not a development agency). The key reasons that agencies conduct environmental due diligence, and the factors that shape how their due diligence is conducted, include that the agencies:

  - Are required under NEPA to monitor and mitigate the environmental impacts of their actions;
  - Are concerned that site contamination will have negative impacts on the financial conditions of their transactions;
  - Are concerned about their own liability under CERCLA and other federal/state laws and regulations; and/or
  - Have an ancillary element of their missions that includes assuring that their developments are "safe and sanitary," that neighborhoods are safe, or something of a similar nature.
  - Are concerned about public relations.

- The key guiding influence on the environmental management framework for each agency or program is the nature of the transactions in which they are engaged. Agencies/programs studied are involved in grants, direct loans, loan guarantees, acquisition of properties, and disposition (sale) of properties.

  - Grants rarely place an agency at risk of liability. Grant-making programs tend to monitor projects for compliance with NEPA.
  - Programs that provide direct loans or loan guarantees have more rigorous approaches to screening and assessment. They are concerned that site contamination could have a negative impact on: 1) the financial health of the project and the related ability to repay the loan; 2) the value of the collateral, should the borrower default; and 3) the liability exposure of the agency, should it repossess a contaminated site.
  - Programs in direct ownership of sites have fully rigorous approaches.

- All agencies need to, and do, coordinate with other agencies in order to conduct their environmental reviews effectively. Coordination is most likely to be with EPA and state or local environmental regulators. Depending on the transaction, they may also coordinate with local development agencies and private developers.

- Development agencies differ in their approaches to providing guidance to staff. Some use regulations, others have detailed handbooks, and some do not provide any written guidance at all.

- Nearly all development agencies studied require some sort of screening or assessment for hazardous waste, but they do so for different reasons and at different levels of intensity. The more potentially liable/responsible an agency is, the more intensive is its systems for environmental due diligence. An agency's decision regarding whether to require or invest in further assessment, once an initial screening indicates the possibility of contamination, is related to both the program's mission and its exposure to liability.

- Agencies that are forced, by ownership or mission, to confront contaminated sites require that remediation be conducted. The DoD BRAC program must, by law and program mission, address the sites that DoD owns, irrespective of the level of contamination. In contrast, Freddie Mac attempts to avoid sites that require remediation.

- All agencies studied that are willing to deal with the cleanup of sites are willing to accommodate engineering and institutional controls. This statement is true for government agencies/programs such as DoD BRAC and GSA, as well as for for-profit companies such as PNC Bank. In each case, these agencies, through the use of high scientific and engineering standards, are able to accommodate these approaches, achieve their missions, and be protective to a high level of confidence.

- In interviews, all agencies indicated that health protectiveness is a higher priority than minimizing the amount of either time or cost in the remediation of a site. No agency, including the private businesses, indicated concerns about the time that cleanups take. Nonetheless, the embracing of risk-based approaches is an implicit endorsement of a trade-off between health protectiveness and cost.

- Agencies minimize costs to themselves by not assuming responsibility for sites for which: 1) no laws or regulations require them to do so, or 2) there is no liability implication of their actions. That responsibility is left to the site owner or responsible party.

- EPA has no prohibition on the use of institutional and engineering controls at residential sites, and has overseen such controls being used on many occasions. Nonetheless, some EPA staff interviewed for this study indicated skepticism regarding this approach.

Task 4 – Similarities and Differences: HUD and Other Development Agencies

- Environmental due diligence for HUD's grant programs (e.g., CDBG) is similar to that in other agencies (e.g., EDA), in focusing exclusively on implementing NEPA.

- HUD is the only agency studied that delegates NEPA reviews to grant recipients, or Responsible Entities (REs). All other agencies conduct their environmental reviews internally with their own staff, as HUD does in its Part 50 reviews.

- HUD's standards for remediation in the context of providing grants are similar to those at the comparison agencies, in that none have elaborated specific standards.

- Development agencies that provide direct loans or mortgage insurance all have a higher level of due diligence with respect to site contamination for these programs than do those that provide grants. All of the public agencies, including HUD Housing, require Phase I assessments.

- Once contamination is discovered, there is quite a bit of variety among agencies in terms of how that contamination is managed.

- HUD's MAP Guidance, as discussed in great detail in Task 2, requires that cleanup be complete before it will approve an application for mortgage insurance, and it will not permit approval when institutional and/or engineering controls are required as part of remediation. Though most agencies studied are reluctant to approve such sites, no other public agency is as strict in its prohibition as is the MAP Guidance.

Task 5 – Review and Assess Views of Users of HUD Programs

- In general, localities with whom we spoke seemed satisfied with their interactions with HUD when they carried out their Part 58 environmental reviews, and they did not seem concerned about HUD's policies. Their view of the quality of HUD staff is, for the most part, favorable. Other views reflected concern about the *quantity* of staff available to provide support to localities.

- There are significant problems in the implementation of Part 58 reviews in Public and Indian Housing (PIH). The current Part 58 structure, which asks localities to conduct

Part 58 environmental reviews on behalf of the PHAs, is frequently not functioning as intended. In one case, the locality admitted to refusing to do the Part 58 reviews, leaving the responsibility to HUD.

- Mortgage lenders and developers whose projects depend on receiving FHA mortgage insurance, and the localities that promote this development, have expressed the most concern regarding HUD's policies with respect to site contamination. Concern is focused on MAP Guide Chapter 9, Environmental Review. The Mortgage Bankers Association of America (MBA) has taken the initiative to draft, for discussion, a revised Chapter 9. Changes that they recommend include:

  - Establish minimum qualifications regarding who can produce Phase I and Phase II environmental site assessments.
  - Establish standardized reporting formats for Phase I and II assessments.
  - Accept Phase I environmental site assessments for up to one year after they have been conducted**,** rather than the far-shorter time currently permitted.
  - Gain access to unbiased, high-level technical support in order to understand adequately the reports produced by environmental consultants and to make decisions for complex sites.
  - Permit the use of institutional and engineering controls, including caps and monitoring wells, on sites that receive FHA mortgage insurance.
  - Permit initial endorsement to occur before remediation has been complete, as long as a remediation plan, acceptable to regulators, has been approved.
  - Permit remediation to be a mortgageable expense, covered by FHA insurance.

- A key philosophical point made by one interviewee is that Housing should be willing to take more risk, even environmental risk, than the private sector. After all, the purpose of FHA mortgage insurance *is* to bear risk.

Task 6 – Conclusions and Recommendations

Multifamily Housing

Our conclusions and recommendations regarding Multifamily Housing are as follows:

- One of the missions of FHA is to *bear risk that the private sector would otherwise not be willing to bear,* in service of public development goals. There is no reason that we can see to exclude financial risk stemming from environmental contamination from being one of the areas of financial risk that FHA helps to bear.

- *Multifamily Housing should permit the use of "risk-based" methods,* including institutional and engineering controls, *but only if it also upgrades its risk-management capabilities.*

  - Risk-based cleanup, broadly understood, is widely and increasingly accepted as the preferred approach to site cleanup under state regulatory programs. The two

main benefits of risk-based cleanup are: 1) reduced remediation costs and 2) increased speed and predictability in the regulatory process.
- HUD has no health- or environment-driven need, which would come from its mission, to impose a cleanup standard that is stricter than that of U.S. EPA. Its primary concerns are related to liability and financial risk.
- Financial risk resulting from environmental contamination can be, and is, managed by both government agencies and for-profit companies. For-profit companies are able to make profitable investments in such sites.

- *Housing must invest in upgrading its analytic capabilities* to manage the financial risk that comes from environmental contamination, independent of whether it changes MAP policies.

  - At present, HUD does not have the in-house technical capacity to analyze environmental risk appropriately, including its linkages to financial risk and to HUD's overall portfolio of properties. Neither the Appraisers in Housing who conduct Part 50 reviews nor CPD Field Environmental Officers (FEOs) have this high-level expertise. Without additional resources, it might make sense for HUD to be even *more* conservative than it currently is, given that field program directors have the authority to make exceptions and not to follow the MAP restrictions.
  - HUD needs access to expertise in two key disciplines: financial risk and environmental risk. With that expertise, and with appropriately implemented systems to ensure that the guidance is taken into account, HUD should be able to provide mortgage insurance on site that have engineering and institutional controls.
  - One option would be to create a single unit that would be available for consultation and support on sites throughout the country. The expert on financial risk should probably be in-house staff; experts on environmental risk could be in-house or on-call contractors who do not have conflicts of interest. Many private banks, including PNC, have such an on-call unit that serves the entire country, and beyond.
  - This new analytic unit should insist that environmental contractors who submit reports to HUD use rigorous standards. HUD should consider adopting the approach of PNC, which insists that properties on which it conducts loans meet the standards of states that are scientifically rigorous. If a project is located in a state that PNC considers not to be rigorous enough to protect PNC's financial interests, PNC insists that its borrowers meet New Jersey's remediation standards. New Jersey does not prohibit engineering and/or institutional controls on residential sites, but it does requires that such approaches be supported by as strict an approach as the state of modern practice and knowledge permits.

- *Multifamily Housing should find a mechanism to approve applications for mortgage insurance before cleanup has occurred, to permit developers to finance cleanup costs*. Remediation in modern practice, especially in brownfields redevelopment, is frequently carried out as part of the overall construction project. Separating

remediation from development makes certain projects almost impossible to undertake. Possible approaches for HUD that would protect HUD's finances include 1) providing a contingent approval, making final approval contingent on the cleanup being completed successfully; and/or 2) requiring the lender or the developer to purchase environmental insurance.

Other Matters

Our recommendations regarding other areas of HUD environmental review include:

- *HUD needs to continue to expand its capabilities to monitor and train localities that are responsible for Part 58 environmental reviews.* HUD is not fulfilling its responsibility to monitor state and local governments to ensure that they are completing environmental reviews properly. Staffing has been severely limited, with some Field Offices not having Field Environmental Officers (FEOs) for 15-20 years. HUD has been addressing this problem over the past year, increasing the number of FEOs from 16 to more than 30. HUD should continue this trend and develop a strategy to meet its obligation.

- *HUD should finalize its movement toward making Field Environmental Officers responsible for all of HUD,* de-linking them from CPD. As with site contamination, HUD should ensure that, among the environmental staff, there are experts in each of the key areas of environmental review.

- *A "fresh look" should be taken at the whole structure of environmental review in the Office of Public and Indian Housing*, where the system is not functioning well. The current structure asks localities to conduct Part 58 environmental reviews on behalf of the PHAs. We believe that there may be pervasive problems. In one of our interviews, the locality admitted to refusing to do the Part 58 reviews, leaving the responsibility to HUD.

- *HUD does not have strong mechanisms to ensure that agency-wide or Office-wide policies are implemented in the field.* Environmental Clearance Officers in both Housing and PIH indicated that they do not necessarily know when field program staff uses alternative approaches. HUD should explore "feedback" mechanisms that would help headquarters staff better understand the practices in the field, to promote consistency of policy and practice.

INTRODUCTION TO THE FINAL REPORT

1.1 Background

ICF has been engaged by the U.S. Department of Housing and Urban Development (HUD) to complete a study of HUD's site contamination policies. Because the Department exercises leadership in the growth of these urban areas, HUD's major offices (i.e., Housing, Community Planning and Development (CPD), Public and Indian Housing (PIH)) are expected to exercise leadership in the renaissance of America's urban areas and must frequently address the redevelopment of potentially contaminated sites.

For the purposes of this report, a contaminated site can be considered to be a property of real estate where there is high suspicion of onsite substances that, depending on specific circumstances, may be hazardous to human health and environmental quality. According to the U.S. Environmental Protection Agency (EPA), more than "40 million tons of hazardous waste is produced in the United States each year. It is produced by large industrial facilities such as chemical manufacturers, electroplating companies, petroleum refineries, and by more common businesses such as dry cleaners, auto repair shops, hospitals, exterminators and photo processing centers."[1] Contamination that is relevant to this study can be of the ground or groundwater at a particular property.

The use or reuse of a potentially contaminated site raises issues of health and safety, underwriting issues of cost and financial soundness, timeliness of the development process, as well as design quality and urban form. HUD's requirements and guidelines play important roles in determining how the Department's resources address these issues. In most cases, HUD delegates primary authority to address environmental review and the management of site contamination to states, tribes, and local authorities. While HUD establishes general guidelines for states and localities to follow in the management of site contamination, it is state or local agencies that approve remediation plans and provide final environmental approvals for development projects. For many programs and in many circumstances, however, HUD retains its responsibility for environmental review. In this case, HUD assures that its standards are met before it approves its own resources being directed toward development projects.

Based on specific program needs, different offices in HUD have adopted a variety of policies and practices for dealing with site contamination. These policies include varying requirements for the timing of remediation, general guidance for site remediation, and policies concerning the role of engineering and institutional controls.

This overall study seeks to determine:

- The degree to which current HUD policies and procedures are: 1) clear and consistent, 2) coordinated among other HUD policies and procedures, 3) based on substantive program requirements, and 4) coordinated with agencies that have regulatory responsibilities.

[1] http://www.epa.gov/ebtpages/wasthazardouswaste.html

- The kinds of typical problems, if any, that project sponsors experience in carrying out prescribed site assessment and/or site cleanup activities.
- Whether there are alternatives to the ASTM[2] protocols (Phase I, Phase II, RBCA[3]) that would be appropriate and acceptable as a prescribed standard for carrying out site examinations.
- When it is appropriate to use risk-based cleanup standards.
- The similarities and differences, and their relevance to HUD, in the policies and requirements of other federal agencies with comparable program responsibilities.
- The similarities and differences, and their relevance to HUD, in the policies and requirements of major conventional mortgage finance programs.

Findings from this study were delivered in a series of reports (draft memoranda), each of which focused on a particular task of this examination.

- The draft memoranda for Task 1 provided an overview of the current "state of the art" in risk-based cleanup for contaminated sites.
- Task 2 reviewed and assessed HUD's site contamination policies.
- Task 3 described and assessed the site contamination policies and procedures of other agencies.
- Task 4 compared and contrasted the policies and procedures of HUD and other agencies.
- Task 5 investigated the views of "users" of HUD programs.
- Task 6 identified possible alternatives to HUD's current practices.

This report is the product of Task 7, which asks ICF Consulting to produce a final report that incorporates the findings and recommendations from the six previous tasks.

1.2 Study Methodology and Organization of This Report

In September 2001, HUD contracted with ICF Consulting to conduct a Study of HUD's Site Contamination Policies. ICF began this project by meeting with an oversight group consisting of the General Technical Manager for the project, Edwin Stromberg from HUD's Office of Policy Development and Research (PD&R), and representatives from the HUD offices that are most impacted by contaminated sites. These Offices include Housing, Community Planning and Development (CPD), and Public and Indian Housing (PIH). At this meeting, the oversight group "set the stage" by explaining how HUD is impacted by site contamination, and by laying out suggestions for how ICF should complete the study. This group became an oversight group that has provided feedback in several facilitated sessions, participated in several interviews, and commented on each of the draft reports

ICF began work on the Task One Draft Report – *Review and Assess State-of-the Art Risk-Based Cleanup Technology* in Fall 2001. Work for this task consisted of reviewing published literature related to risk-based cleanup, searching Federal, State, and private Internet sources, and interviewing experts from the Federal government, state governments, and the private sector who could provide information related to current risk-based cleanup issues.

[2] Formerly known as the American Society for Testing and Materials
[3] Risk-based corrective action

ICF researched and wrote the draft reports for Task 2 (*Review and Assess HUD Site Contamination Policies, Procedures and Practices*) and Task 3 (*Analyze and Assess Site Contamination Policies of Development Agencies*) concurrently. The main methodological tool for these tasks was an analytic matrix, which facilitated our ability to compare and contrast how various HUD Offices and other agencies treated key themes for the study. The data for the matrix were developed and completed through interviews with staff from HUD and eight other agencies; lessons learned from a trip to HUD's Chicago Field Office; and review of the agencies' regulations, handbooks, procedures, diagrams, Web sites and worksheets. From these resources, ICF not only completed the data in the analytic framework (as best as was possible), we also developed descriptions of the development agencies' policies, procedures and practices. In addition, we were able to identify common themes as well as differences. The common themes and differences were captured in the report for Task 4, *Similarities and Differences: HUD and Other Development Agencies*.

The report for Task 5, *Review and Assess Views of Users of HUD Programs*, was developed through discussions with representatives from cities that manage CDG and HOME funds, developers, lenders, a public housing authority, and a state housing finance agency information. A site visit to Chicago, as referenced above, added an interactive session to Task 5 that facilitated our understanding of the views of key user types.

Task 6, *Identify and Assess Alternatives do Current Site Contamination Policies*, distills the research findings of this study into key conclusions and recommendations to HUD.

This final report is organized into seven main sections -- an introduction and a section for each of the six reports that were submitted earlier in this project. In the draft reports for Tasks 1, 2, 3 and 5, an Executive Summary was part of the deliverable. In this Final Document, these Executive Summaries have been removed for each task. In their places, we have brought the key conclusions for each task forward into an overall Executive Summary, to serve as an overall summary of the study.

SECTION 1. INTRODUCTION TO TASK 1

1.1 Background

ICF has been engaged by the U.S. Department of Housing and Urban Development (HUD) to provide support in evaluating the department's policies, practices, and procedures for addressing the challenges presented by environmental contamination at properties ("sites"). This chapter is the product of Task 1 under that effort. The objective here is to provide an overview of the current "state-of-the-art" in risk-based cleanup methods for these sites.

Risk-based cleanup is the process whereby site contamination is characterized, potential risks are evaluated, and potentially dangerous contamination is remediated to a degree that is determined by the estimated levels of risk. In some cases, exposures to hazardous contamination may be limited through the use of engineering controls (physical barriers), or through institutional controls on specific land uses or practices (such as preventing the use of affected groundwater as a source of domestic drinking water).

Risk-based cleanup represents only one part of the process that HUD uses in its development of contaminated sites. This report focuses on situations in which site contamination is already known to exist or is found during the development process. Issues relating to other aspects of the development process, such as environmental due diligence, preliminary site assessments, underwriting, and the broader liability aspects of site contamination, will be addressed in subsequent reports or in other venues.

1.2 The Role of Risk-Based Cleanup in HUD Development Projects[4]

HUD plays a major role in the development and redevelopment of America's cities. Because the Department is expected to exercise leadership in the growth of these urban areas, HUD's major offices (i.e., Housing, Community Planning and Development (CPD), Public and Indian Housing (PIH)) frequently must address the redevelopment of potentially contaminated sites.

In most cases, HUD delegates primary authority to address site contamination, cleanup, and environmental review to states and local authorities. While HUD establishes general guidelines for states to follow in site cleanup, it is the states or local health agencies that approve cleanup plans and provide final environmental approvals for development projects. Based on specific program needs, different offices in HUD have adopted a variety of policies and practices for dealing with site contamination. These policies include varying requirements for the timing of remediation, general guidance for site remediation, and policies concerning the role of engineering and institutional controls.
CPD and PIH have policies that allow HUD to approve a project before site cleanup is complete. These programs also allow the use of engineering and institutional controls to reduce exposure to pollutants. In contrast, the Office of Housing requires a complete remediation of a site prior HUD's fiscal commitment, and does not allow for use of engineering and institutional controls at sites intended for residential use. The more stringent and conservative approach taken by the

[4] Much of the language from Section 1.2 is taken from the Statement of Work for this project.

Office of Housing is seen as necessary to avoid hazards to public health and possible HUD liability through ownership in the case of foreclosure.

Current HUD guidance does not specify or endorse specific methods for risk-based cleanup, or require cleanup of specific contaminants to specific levels. Whereas, EPA Regions and states have adopted a wide range of approaches to setting site cleanup levels based on risks to human health and the environment, and with regard to the use of engineering and institutional controls to address site contamination. Thus, HUD finds itself faced with many different sets of standards and methods as it evaluates development projects across the country. In the remainder of this report, we review and evaluate a number of different approaches to risk-based cleanup that have been adopted by different states and EPA regions.

1.3 Study Methodology and Organization of This Report

The initial phase of this task consisted of a review of published literature related to risk-based cleanup, and a search of Federal, State, and private Internet resources. The focus for the search of literature and the Internet was to assess current approaches to addressing site contamination, specifically with respect to residential sites. The overall scope and direction of the research was refined through meetings with HUD headquarters personnel familiar with risk-based cleanup issues.

Based on the literature search, meetings with HUD, and ICF's prior knowledge, individuals were identified in the Federal government, state governments, and the private sector who could provide information related to current risk-based cleanup approaches and who could describe their experience with these approaches as they have been applied in actual projects. A limited number of telephone interviews were then conducted with these experts, and the results of the interviews were used to evaluate the state-of-the-art in risk-based cleanup.

Section 2 of this report briefly describes the development of risk-based cleanup methods, illustrating how they have descended from other less-refined approaches to site cleanup. Section 3 provides examples of several commonly used approaches to risk-based cleanup that have been developed by the EPA, states, and by the American Society for Testing and Methods (ASTM). Section 4 provides a brief characterization of approaches to risk-based cleanup used in 48 states. Section 5 discusses the interview findings and provides a review and assessment of risk-based cleanup approaches. Section 6 provides a summary of the major findings and a brief discussion of implications for HUD.

Appendix A provides a tabular summary of the classification of current state cleanup protocols. Interview participants are listed in Appendix B, and Appendix C provides a list of the questions that were posed in the telephone interviews.

SECTION 2. ORIGIN AND MAJOR FEATURES OF RISK-BASED CLEANUP METHODS

2.1 Evolution of Risk-Based Cleanup Approaches

The National Research Council defines a risk-based cleanup as "a process that combines environmental data obtained for a hazardous waste site, risk assessment calculation(s), and a series of risk-management decisions."[5] "Risk-based" means that decisions regarding cleanup levels, resource allocation, remedial measures, and use of engineering and institutional controls are based on current and reasonably foreseeable potential future risks to human health and environmental resources.

Broadly interpreted, risk-based cleanup could describe any site-cleanup method meant to reduce risks. In current practice, risk-based cleanup refers to approaches that provide systematic guidance for:

- evaluating the risks posed by site contamination;
- establishing remedial goals to reduce risks to acceptable levels; and
- balancing the need to reduce risks against the costs of remediation. (This "balancing" is sometimes more implicit than explicit in regulation or policy.)

The balancing calculation is reflected in the desired levels of risk that are to be achieved by a cleanup and in prescribed methods for achieving the desired reduction of risk (e.g., through removal of contamination or through the use of engineering or institutional controls).

When site contamination first came to be recognized as a serious problem in the 1970s, little was known about the relationship between the severity of contamination and potential risks to human health and/or the environment. The only alternatives available for setting cleanup levels were 1) cleaning up to "background" levels (removing all detectable contamination) or 2) relying on complex, data-intensive site-specific risk assessments. The first approach, cleaning up to "background" was found to be not only prohibitively expensive, but also technically infeasible. Site-specific risk assessments were also found to be very expensive and time-consuming. At a relatively high proportion of sites, risks were found to be so low that remediation was not necessary, thereby calling into question whether the high costs incurred during in site investigation were necessary.

Risk-based cleanup methods were developed over time by private-sector groups and government agencies for two reasons: 1) to avoid both remediation "overkill" at sites where it was unnecessary or impossible to clean up to background; and 2) to avoid "paralysis by analysis," where site risks were believed to be relatively low and detailed risk assessments were not justified. As we discuss further in Section 3, one of the first comprehensive approaches to risk-based cleanup was developed by ASTM. The context of ASTM's approach was to address the

[5] National Research Council (NRC), 1999, Environmental Cleanup at Navy Facilities: Risk-Based Methods, National Academy Press, Washington, DC.

needs of underground storage tank (UST) programs, through which a large number of sites had to be managed, where the contaminants were similar across the sites, and where a large proportion of sites were expected to pose relatively low risks under plausible future land uses.

2.2 Goals of Risk-Based Cleanup

Depending upon the specific program for which they were developed, risk-based cleanup approaches have the following general goals:

- Provide a transparent, standardized approach to site cleanup;
- Allow sites not needing remediation to be identified quickly;
- Simplify risk assessment and cleanup goal-setting;
- Assure protection of public health under plausible future land-uses;
- Allow remedial design to be dependent on both intended land-use and magnitude of risks;
- Reduce administrative delays and speed project execution; and
- Reduce overall development costs.

The motivations for developing risk-based cleanup methodologies are both technical and economic. Such systems are intended both to provide consistent guidance in complex risk-related decisions, and to insure that such decisions can be made cost-effectively and with minimum delay. Also, adoption or acceptance of risk-based systems by state governments may help developers and lenders to improve their management of potential liabilities that are associated with site contamination. Risk-based cleanup methods themselves do not, however, directly address issues of financial liability, which, in general, need to be resolved in the context of specific state laws and programs.

As will be discussed in more detail in the next section, government programs that encourage risk-based cleanup sometimes provide statutory timetables for the agency to review and approve projects. Developers see this expedited consideration of project cleanup decisions as a key advantage of such programs.

The use of risk-based cleanup goals are not inherently any more “lenient” than systems based on site-specific risk assessments. Consistent with their name, most risk-based cleanup methods set goals for remediation that are based on “de minimis” or nearly “de minimis” risk levels, as established by health and safety statutes embodied in both federal and state law. The flexibility in cleanup levels that is built into some risk-based systems is based on variations in use of both land and resources, due to how they increase or reduce the potential for exposure. In general, they tend not to vary based on different target risks for different populations. For those risk-based systems that allow the option of engineering or institutional controls, such measures tend to be permitted only if the controlling local authority judges that they will achieve acceptable levels of risk reduction.

2.3 Common Features of Risk-Based Cleanup Approaches

As noted above, different organizations have developed widely varying approaches to risk-based cleanup, with the specific characteristics of their methods depending on the nature of the programs that they support. Common features shared by many risk-based cleanup methodologies include:

- Prescribed requirements for assessment of site contamination;
- Tiered approach to risk assessment and cleanup goal-setting;
- Screening concentrations in environmental media that identify contaminants not needing remediation;
- Non-risk-based "cleanup to background" as a default option;
- Risk-based cleanup levels from look-up tables;
- Risk-based cleanup levels derived with screening risk equations;
- Rules for dealing with partial cleanups, cleanup of different media; and
- Rules governing the use of engineering and institutional controls that are designed to achieve risk targets.

Some of the systems discussed in Section 3 include all of these features, while some more-limited systems address only specific steps in the risk-management process, such as screening for contaminants or cleanup goal-setting. In general, the systems that are more advanced and well-developed (e.g., ASTM RBCA) provide a wide degree of flexibility by allowing or mandating "tiered" approaches to risk assessment and cleanup goal-setting. Simple and inexpensive analyses that use conservative screening methods are first employed. The user then proceeds to more complex methods, as required by the nature of the contamination and the intended use of the site.

Several of the systems evaluated provide or rely on look-up tables of pre-defined screening or cleanup levels. As noted above, agencies tend to set these levels based on conservative exposure assumptions, using conservative target-risk levels. Some systems have different sets of look-up tables, with recommended cleanup levels that vary depending on the intended land-use or expected exposure conditions.

Approaches to addressing partial site cleanups and requirements for remediation of specific media prior to residential uses of the land (e.g., addressing groundwater and subsurface soils, in addition to surface soils) vary from program to program. Similarly, policies concerning the use of engineering and institutional controls tend to be program-specific, and decisions on the permissibility of such measures are often regulatory decisions made outside of the formal risk-based cleanup framework. A common, but not universal, tendency is for developers to avoid the use of engineering and institutional controls even when regulatory agencies permit their use; especially when the site will be used for residential purposes.

The following section provides a more detailed description of several of the more widely used and well-developed risk-based cleanup approaches.

SECTION 3. DESCRIPTION OF CURRENTLY USED RISK-BASED CLEANUP APPROACHES

In this section, we provide brief descriptions of the major features of selected risk-based cleanup approaches. We begin with an approach that requires a detailed site-specific risk assessment, which follows the model in EPA's Risk Assessment Guidance for Superfund (RAGS), part A. This approach is presented as a conservative "default" against which the other approaches can be compared.

We then discuss three well-developed risk-based cleanup approaches, i.e., two developed by states (Illinois and Texas) and one developed by the ASTM (RBCA). These approaches were chosen because they were identified by experts in the field as being well-conceived and indicative of the current state-of-the-art, because they have been in use for significant lengths of time, and because they have been cited as models for other state cleanup programs. As will be discussed in Section 4, many other states have similar risk-based approaches.

Finally, we briefly discuss several supporting and auxiliary cleanup approaches that are often referenced or incorporated into state cleanup programs. These include methods for setting risk-based screening and cleanup levels using look-up tables or screening-risk calculations.

3.1 RAGS – Detailed Site-Specific Risk Assessment

The Risk Assessment Guidance for Superfund (RAGS), developed by the EPA, represents the original paradigm for risk assessment used for sites in the Superfund and RCRA programs, beginning in the mid-1980s. Part A of the guidance prescribes a general approach to setting cleanup goals that first requires detailed site-specific assessment of risks to public health through all potential viable exposure pathways. Part B of RAGS prescribes methods for establishing preliminary remediation goals (PRGs), which are cleanup levels calculated using simplified screening equations and are based on "applicable and relevant" health-protection standards. PRGs were generally set at levels that afforded protection against lifetime cancer risks on the order of one-per-million to one-per-one-hundred-thousand (10^{-6} to 10^{-4}) and protection against potentially harmful levels of exposure to non-cancer toxic agents. PRGs were intended for use only during the Remedial Investigation/Feasibility Study (RI/FS) phase of site cleanup, with the expectation that detailed risk calculations would again be performed to determine the final remediation goals.

In general, RAGS required that risks and all potential routes of exposure be calculated based on the assumption that the land would be used for residential purposes almost irrespective of the likelihood that housing would be developed. In setting final cleanup goals, the assumption of residential land-use was permitted to be relaxed and unlikely exposure pathways could be dropped from consideration. In practice, this approach often required extended negotiations among risk assessors, EPA, state regulators, and "responsible parties."

Achieving cost-effective cleanup using RAGS was seen by all parties involved as being a difficult, time-consuming process. Problems arose both because of the technical complexity of the risk assess9ment requirements and because of the lengthy administrative procedures that

were involved in arriving at acceptable cleanup goals. RAGS did (and still does) provide useful technical guidance on how risk assessment should be performed and many current risk-based approaches draw on methods that were first developed by EPA for the Superfund program. However, most of the risk-based methodologies treat the detailed risk assessment approach embodied in RAGS only as a "last resort," but still useful for complex or seriously contaminated sites. A few states that rely on pre-established cleanup levels do not even allow site-specific risk assessment to be used to set cleanup goals because of their technical complexity.

Another feature of RAGS/Superfund and RCRA risk-based cleanup standards that persists in most modern systems is that of the target risk levels. Cleanup goals that have persisted include 1) maintaining the target level for lifetime cancer risks to a range of 10^{-4} to 10^{-6} for cancer-causing contaminants, and 2) limiting exposures to non-cancer causing chemicals in such a way that the "hazard index" (the ratio of estimated doses to a defined "safe" dose levels) is below 1.0 or 0.1.

3.2 Fully Integrated Risk-Based Corrective Action Approaches

3.2.1 American Society for Testing and Materials (ATSM) Risk-Based Corrective Action (RBCA)

While there are many different approaches available when environmental professionals refer to "risk-based cleanup" they are most often referring to the set of methods contained in the ASTM standard E – 2081-00. Risk-Based Corrective Action (RBCA), as developed by the ASTM, refers to specific standard approach for managing site where contaminants have been released. ASTM RBCA was originally designed to address remediation efforts at underground storage tank (UST) facilities and there is still a separate standard for UST cleanup that is distinct from that approach for other types of contaminated sites. Nonetheless, the principles involved in the risk-based corrective action process are broadly applicable to many types of release sites, including RCRA and CERCLA sites, less-contaminated "brownfield" sites, voluntary cleanup sites, and land parcels intended for residential use. As a result, several states have incorporated elements of ASTM RBCA into other programs where cost-effective assessment and remediation are seen as critical.

The ASTM *Guide for Risk-Based Corrective Action*[6] describes RBCA as a structured and iterative site-evaluation and remediation process, which combines site characterization, risk management, and remedial action. RBCA was developed to provide a flexible framework for corrective action that can be applied to sites that vary in terms of complexity, physical and chemical characteristics, and in the risk they pose to human health and the environment. The RBCA process recognizes that there is diversity in sites and therefore utilizes a "tiered" approach to risk evaluation. The process integrates site assessment and response actions both to determine the need for remedial action and to tailor corrective actions to site-specific conditions and risks.

[6] American Society for Testing and Materials. 2000. Standard Guide for Risk-Based Corrective Action. West Conshohocken, PA. E 2081-00.

Figure 1 summarizes how RBCA's three-tiered approach allows the user to collect data necessary for decision-making at each tier.

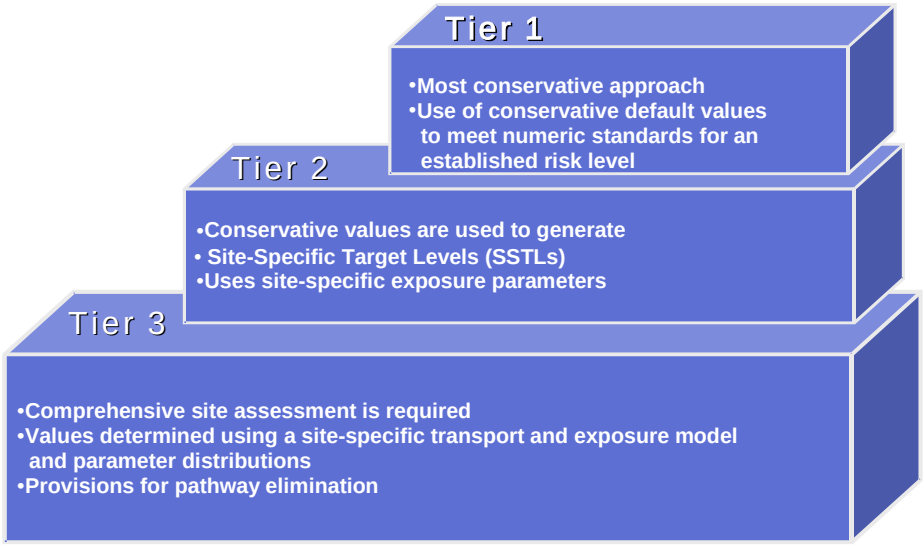

Figure 1. ASTM RBCA Tiered Approach to Site Remediation

The three tiers of ASTM RBCA constitute responses to progressively more complex and severe site contamination problems. Sites enter the system at Tier 1 (even if it is clear at the outset that more complex analyses will be needed), and move to "higher" tiers until sufficient data have been gathered and appropriate risk evaluations can be made to support the development of protective cleanup goals.

Tier 1 evaluations compare maximum-contaminant-concentrations to non-site-specific risk-based screening levels (RBSLs) for human-exposure pathways and ecological receptors and habitats. ASTM indicates that RBSLs can be obtained from pre-determined "safe" levels (such as the look-up tables provided by EPA Region 3 discussed below) or can be calculated using screening risk equations.

The corrective action goals developed in Tier 1 are based on conservative[7] assumptions, and do not consider site-specific conditions that could limit exposures. If all contaminant concentrations at the site are below RBSLs, then corrective action is considered unnecessary. If the Tier 1 analysis shows contaminant concentrations to be above RBSLs, the user may either elect to clean up to these very conservative levels, or may go on to a Tier 2 assessment. That option is selected if cleanup to RBSLs is not feasible or is considered to be too expensive.

The Tier 2 evaluation refines and expands the Tier 1 analysis to include the development of site-specific risk-based corrective action goals (cleanup levels). The analysis usually involves

[7] "Conservative" in this context, means that the goals must be based on the assumption that any use of land might occur in the future, and that all exposure pathways are possible.

development of statistically representative concentrations of contaminants of concern (those exceeding RBSLs). Site-specific target levels (SSTLs) are calculated by applying the corrective-action goals that were established under the Tier 1 evaluation, at exposure locations determined by the Tier 2 site-specific analysis (e.g., are contaminant levels above the levels of concern at locations where exposures are likely to occur?). The corrective-action goals for different exposure pathways are compared to representative contaminant concentrations to determine if further action (remediation or further analysis) is necessary. As for Tier 1, the user has the choice of remediating to the Tier 2 SSTLs or moving on to a Tier 3 analysis, whichever is considered to be more cost-effective.

A Tier 3 evaluation is basically a detailed site-specific risk assessment. The Tier 3 evaluation utilizes comprehensive site-specific exposure assessment, and detailed techniques to assess toxicity and risk to allow maximum flexibility to develop SSTLs or cleanup levels. Tier 3 analyses allow derivation of cleanup goals tailored to site-specific exposure conditions, meaning that some exposure pathways can be eliminated. Pathways may be eliminated either for reasons inherent to the site (e.g., there are no groundwater resources that could be developed for domestic use) or taking into account the presence of future engineering barriers or limitations on future land use (institutional controls). ASTM RBCA is generally supportive of the use of these types of controls if their effectiveness can be adequately assured.

ASTM RBCA incorporates many features derived from the RAGS and related methods, including the calculation of cleanup levels that start with simplified, conservative screening equations. The actual equations recommended for use in deriving cleanup goals are very nearly identical to those recommended in RAGS Part B. While RBCA does not specifically prescribe the risk targets on which cleanup goals should be based, the most common practice appears to be to use the same range of risk targets that are defined under the Superfund program.

3.2.2 Texas Risk Reduction Program (TRRP)[8]

The Texas Risk Reduction Program (TRRP) is a risk-based cleanup system that establishes requirements for the corrective-action programs of the Texas Natural Resource Conservation Commission (TNRCC). This rule was developed by TNRCC to allow flexibility and encourage voluntary environmental cleanups of sites contaminated by releases from regulated industrial facilities.

The TRRP defines the requirements for assessing the extent of environmental contamination, establishing human-health and environmentally protective concentration levels (PCLs), and cleaning up or controlling environmental contamination. The rule establishes guidelines to assess the contamination of soil and groundwater at sites and takes into account the intended or expected use of the land. PCLs can vary based on expected land-use and potential exposures to humans and environmental resources.

[8] Texas Natural Resource Conservation Program. 2001. An Introduction to the Texas Risk Reduction Program. Remediation Division. RG-366/TRRP-1.

Similar to the RBCA process, PCLs are determined using a three-tiered approach. The process is not necessarily stepwise, and those who carry out the remediation regularly choose to skip Tier 1 and proceed directly to Tier 2. As in ASTM RBCA, Tier 1 is the simplest, in that it requires minimal calculations, and results in the most stringent cleanup levels. Tier 2 uses site-specific data to calculate cleanup levels. It tends to entail higher site-assessment costs, but it may result in less-stringent cleanup levels, depending on the expected use of the land and the exposure pathways. Tier 3 uses the most sophisticated methods, up to and including site-specific risk assessments similar to those under RAGS, to determine PCLs. Therefore Tier 3 is generally the most expensive and time-consuming, but is most likely to allow the user to set less stringent PCLs.

Regardless of which tier is chosen, the remediator has the choice of selecting one of the two sets of standards, "A" or "B". Utilizing Standard A, a site is remediated by removing all contamination to the required levels. Standard B allows the use of both institutional and engineering controls. A higher concentration of the contaminant is allowed to remain on the property with Standard B and cleanup may be less expensive. However, a restriction on how the land may be used is placed on the deed. Under the TRRP, institutional controls are allowed, irrespective of land use. As part of the TRRP, TNRCC has provided 10 sets of look-up tables containing recommended Tier 1 PCLs. The levels vary depending on the standards chosen and the nature of potential exposure pathways at the site. The PCL levels are updated annually.

3.2.3 Illinois Tiered Approach to Corrective Action (TACO)[9]

Developed by the Illinois EPA, the Tiered Approach to Corrective Action Objectives (TACO) is a method for developing remediation objectives for both contaminated soil and groundwater. The remediation objectives protect human health, while taking into account land use and site-specific conditions. TACO was developed to support a wide variety of programs and, therefore, does not provide specific procedures for site characterization

TACO provides a number of options for risk management, when it is necessary. The most common options are active remediation, engineered barriers, and institutional controls. Active remediation includes any cleanup activities that reduce contaminant levels to either an acceptable risk level or to a level that would allow the use of one of the other options.

TACO also adopts a three-tiered approach to establishing remediation objectives. A Tier 1 evaluation compares the contaminant concentrations to "baseline" remediation objectives (allowable concentrations established by the state). Tier 1 allows site owners to choose different sets of cleanup levels for residential, industrial, or commercial land uses. If the remediation objectives are met (contaminant concentrations are below specified levels), the site is qualified to receive a "No Further Remediation" letter stating that the site owner or operator has satisfied the respective Illinois Bureau of Land laws and regulations and that the site does not need to be remediated any further.

[9] Illinois EPA. 1997. Tiered Approach to Corrective Action Objectives (TACO) Fact Sheet 1: Introduction. Bureau of Land, Springfield, IL.

If contaminant concentrations exceed the Tier 1 remediation objectives, the owner may choose either to remediate to the stringent Tier 1 levels or go on to a Tier 2 analysis. Under Tier 2, applying site-specific data to risk-screening equations creates refined sets of remediation objectives, which are likely to be less stringent than the Tier 1 levels. Site owners and operators can also use Tier 3 to address situations they choose not to handle or cannot handle under the first two tiers. These situations include both simple sites where physical barriers limit remediation and complex sites where full-scale risk assessments or alternative modeling are applied.

TACO allows the consideration of engineering barriers and institutional controls in establishing cleanup levels. "Pathway elimination" may be invoked, where a less stringent cleanup level is allowed, provided that the developer can show that exposures will not occur through the specified pathway (either because of engineering barriers or institutional controls). TACO provides a list of acceptable engineering barriers, but allows developers to propose other types of barriers, if they can demonstrate that those barriers will be equally effective.

3.3 National and Regional EPA Guidance Related to Site Cleanup

The three approaches discussed to this point are fully integrated risk-based corrective action systems. As discussed in Section 4, a number of states have adopted similar, relatively advanced systems for risk-based remediation. Other states, however, have programs that are not as well-developed. Many of these programs rely on EPA regional or national guidance concerning cleanup levels. Three of the more widely used guidances are discussed below.

3.3.4 EPA Region 3 Risk-Based Concentration Table[10]

The EPA Region 3 Risk-Based Concentration Tables provide Reference Doses and Cancer Slope Factors for approximately 500 chemicals, from which cleanup levels can be derived. These toxicity criteria are used to define acceptable levels of soil contamination based on 10^{-6} individual-excess-cancer-risk for carcinogens and a hazard quotient of 1.0 for non-carcinogens. The exposure equations used in the calculations of the RBCs come from RAGS, and include contributions from direct exposures to soil, inhalation of suspended soil particles, leaching of soil contaminants to groundwater, and bioconcentration of contaminants in aquatic ecosystems. EPA recommends that RBCs be used for preliminary screening of contaminated sites and suggests that they not be used as a substitute for establishing site-specific cleanup goals. However, a number of states allow site owners the choice of remediating to the very conservative Region 3 levels in lieu of conducting more complex analyses.

3.3.5 EPA Region 6 Risk-Based Human Health Screening Values[11]

The Region 6 Risk-Based Human Health Screening Values are also chemical concentrations in environmental media corresponding to "de minimis" cancer and non-cancer risk levels (10^{-6} and

[10] U.S. EPA Region 3. Risk-Based Concentration Table. September 25, 2001. http://www.epa.gov/reg3hwmd/risk/cov1001.PDF

[11] U.S. EPA. 2001. EPA Region 6 Human Health Medium-Specific Screening Levels. Region 6, Dallas, Texas.

HQ = 1, respectively). The screening values are calculated using RAGS-like calculations based on direct exposures to soil, water consumption, and inhalation of volatilized or suspended particulate pollutants, using whichever of the acceptable level of cancer or non-cancer health effects occurs at the lower concentration.

Screening values are provided for soil, groundwater, and surface water. The levels differ from those defined by Region 3 in that risks are calculated using exposure-parameter values (soil porosity and organic content, groundwater flow rates, etc.) that are more typical of conditions found in Region 6.

3.3.6 EPA National Soil Screening Guidance[12,13]

The Soil Screening Guidance is a tool originally developed by EPA's Office of Emergency and Remedial Response (OERR) to help standardize and accelerate the evaluation and cleanup of contaminated soils at National Priorities List (NPL) sites where it is anticipated that there will be residences. Screening levels are intended to identify sites where no remediation is necessary and to screen areas of sites, exposure pathways, or contaminants. Unlike the regional guidances, the Soil Screening Guidance allows the user to develop contaminant concentrations that correspond to specified risk levels, based on specific exposure pathways, which may be site-specific. EPA recommends that the pathway giving the lowest contaminant concentration be used to set the screening levels. The method does, however, allow the user flexibility to examine the relative importance of different exposure pathways through simple screening calculations, without the need for complex site-specific analyses. Variations of this approach are found in the middle and upper tiers of the ASTM RBCA, TACO and TRRP, and are allowed under some other state risk-based cleanup approaches.

[12] U.S. EPA. 1996. Soil Screening Guidance: Fact Sheet. Office of Emergency and Remedial Response, Washington, DC. EPA/540/F-95/041.
[13] U.S. EPA. 1996. Soil Screening Guidance: User's Guide. Office of Emergency and Remedial Response, Washington, DC. PB96-963505.

SECTION 4. USE OF RISK-BASED CLEANUP BY THE STATES

As noted in Section 1, HUD relies on the environmental approvals from local health authorities and state environmental agencies. It is therefore important to examine and classify state risk-based cleanup protocols across the United States.

For this report, we categorized information on the adoption of risk-based cleanup methodologies by state voluntary cleanup and brownfields development programs. In some cases, states may use other cleanup methods in other programs (e.g., state "Superfund"), but the available information suggests that the VCP programs employ approaches reasonably representative of those encountered by HUD in fulfilling its development mission.

The major source of the information in this section was an annual study conducted by the Northeast-Midwest Institute (Bartsch, et al. 2001). For a few states with little or no data in this source, we also conducted limited Internet searches or called designated contact individuals. In summary, the vast majority of states have adopted risk-based cleanup methodologies for use with their respective VCP or brownfields program.

The major characteristics of state cleanup programs are summarized in a table in Appendix A. State systems were evaluated with regard to:

- Whether the state system had a risk-based approach in place;
- Whether the state system employed a tiered approach similar to ASTM RBCA;
- Whether the state system employed screening or cleanup values from look-up tables similar to those issued by EPA Region 3 and Region 6;
- Whether the state system allowed or required cleanup levels to be calculated from screening risk equations, similar to the EPA Soil Screening Guidance; and
- Whether the state system allowed the use or engineering and/or institutional controls.

All but three of the states that supplied data (44 of 47) employ some form of program that we could identify as being "risk-based," in the sense that 1) they allow cleanups other than to background or to levels set based solely on site-specific risk assessment, and that 2) cleanup levels can vary based on land use and exposure potential. Even the states that did not report the use of formal risk-based approaches (Alabama, Arizona, and Connecticut) provide developers options to choose among different levels of cleanup, and the Connecticut Remediation Standard Regulations were derived based on RBCA-style analyses.

The majority of states supplying data (26 of 47) employ some form of tiered approach, similar to ASTM RBCA or TACO, wherein increasingly detailed levels of analysis may be used to develop increasingly refined cleanup levels, at the discretion of the developer. Forty-six (46) of the 47 reporting states allow or require the use of cleanup levels from look-up tables. In some cases, it was not clear whether states developed their own risk-based levels or relied on EPA or other organizations. Some states have defined different sets of cleanup levels for residential and non-residential land uses. Most states use a single set of risk-based concentrations (or a single set for each intended land use) both to screen sites to determine if remediation is necessary and to use as cleanup levels if remediation is required.

Almost all of the states that employ either a tiered approach or less-structured methods to risk-based cleanup (46 of 47 states) allow the use of screening risk calculations (as opposed to detailed site-specific risk assessments) to establish cleanup levels. This approach is more flexible than strict reliance on tables of pre-defined cleanup levels. Using this type of approach may, for example, allow developers to omit specific exposure pathways from cleanup level calculations, if such exposures do not occur at a site or if exposures through that pathway are to be controlled through the use of engineering barriers or land use restrictions.

As noted above, most (44 of 47) states that employ risk-based cleanup also implement regulatory requirements that allow the use of engineering and/or institutional controls under some circumstances. Six states (i.e., Idaho, Massachusetts, Nevada, New Jersey, Ohio, and West Virginia) specifically do not allow the use of institutional controls in voluntary site cleanup. As we discuss further in Section 5, during the interviews, several experts indicated that some state programs discourage the use of institutional controls at sites intended for residential land use.

SECTION 5. EXPERIENCE WITH RISK-BASED CLEANUP

The previous sections have discussed the development and characteristics of risk-based cleanup methodologies of the type used by many state governments to manage the cleanup of contaminated sites for redevelopment. In this section we present the results of a series of interviews that we conducted with experts in contaminated site cleanup and users of risk-based cleanup approaches.

The 14 interviewees, who are listed in Appendix B, include EPA employees involved in the development of site cleanup methods, employees of state regulatory agencies who use risk-based cleanup approaches, and environmental consultants that were identified through literature searches and professional contacts as experts on issues related to site cleanup. The number of interviewees was limited by resource constraints and includes a high proportion of Federal employees because of the need to comply with limitations on information collection under the Office of Management and Budget (OMB) guidelines. Even though interviewees were selected for their broad knowledge and representation of a wide range of viewpoints, the small number of interviews suggests caution in interpreting our results. Important segments of the user community, for example lenders and lawyers involved in the redevelopment of contaminated site, were not included for this task. However, state regulators and consultants were able to address some aspects of lender concerns based on their own experience. Lender concerns will also receive attention in later tasks of this study.

The overall goal of the interviews was to gain insights into the real-world applications of risk-based cleanup as applied to residential development projects. A list of interview questions can be found in Appendix C. Specific areas of inquiry included:

- Adoption of risk-based cleanup approaches. To what extent were risk-based cleanups being used? What is the general level of acceptance of these approaches?
- Variation in risk-based cleanup approaches. What specific risk-based cleanup methods are currently in use? To what extent are highly integrated tiered approaches used, compared to simpler screening level approaches?
- Public-health protectiveness. What is the overall level of protectiveness of currently used risk-based cleanup standards? Has the level protectiveness changed compared to previous practices?
- Impacts of risk-based cleanups on project cost and timeliness. To what extent, if at all, has risk-based cleanup resulted in faster, cheaper redevelopment of contaminated sites? Have there been any adverse cost impacts?
- Utilization of engineering and institutional controls. To what extent have these measures been employed or are they allowed on residential and commercial development projects? What has been the overall experience with their use?
- Other advantages and disadvantages to risk-based cleanup.

The following discussion of these issues includes information obtained through interviews, as well as information gathered through literature review and Internet searches.

5.1 Adoption of Risk-Based Cleanup Approaches

Our research indicates that risk-based cleanup is commonplace and employed in a wide range of site cleanup programs throughout the country; it is the rule rather than the exception. Programs using variations of risk-based cleanup include the Federal Superfund program, state Superfund and voluntary cleanup programs, and "brownfields" and other redevelopment programs. Developers do, at times, clean up sites to background levels (a non-risk-based approach). They tend to do so, however, in the context of tiered risk-based programs and in cases where costs and liabilities can be minimized, or returns maximized from their investment, through acceding to the more stringent levels involved in cleanup-to-background. Detailed RAGS-type risk assessments are also occasionally conducted, but normally only as the last resort under risk-based cleanup programs at complex, highly contaminated sites. Some states actually prohibit the use of detailed site-specific risk assessments in cleanup goal-setting in voluntary cleanup programs because of their perceived high cost, complexity, and lack of transparency. State regulators and, to a large extent, developers and environmental consultants would much rather that issues related to site cleanup be resolved in the setting of clearly defined, if not technically perfect, rules and under the expedited schedules that are included as part of many state cleanup programs.

All of the interview participants agreed that the development of modern risk-based cleanup methodologies has been the driving force behind the increase in the number of sites that are being redeveloped. Specifically, structured risk-based cleanup (such as RBCS, TACO, or the TRRP) have greatly facilitated the cleanup process by reducing ambiguity about cleanup requirements, and by allowing developers to have a good idea about how much cleanup is likely to be required at a relatively early stage in the redevelopment process.

5.2 Variation in Risk-Based Cleanup Approaches

As discussed previously, there is no single national standard for risk-based cleanup, which has led to diversity in the cleanup methods that are currently being employed. Many programs employ variations on ASTM RBCA, most commonly involving the use of tiered approaches that start with simple, relatively stringent cleanup goals, and require increasingly more data and more rigorous site-specific analysis for more complex sites. For example, the Texas Voluntary Cleanup Program (VCP) utilizes a modified RBCA approach, the Texas Risk Reduction Program (TRRP), to manage site-cleanup projects. The TRRP varies from the ASTM RBCA approach in that projects may enter the system at either Tier 1 or Tier 2, and many developers go straight to Tier 2 as the most cost-effective way to meet cleanup requirements.

Texas

In the early 1990s, the two large site cleanup programs in Texas (VCP and the Underground Storage Tank Program) used different approaches to set cleanup standards. State regulators and other stakeholders appreciated the need for a unified approach. Under combined legislation,

both programs now use the TRRP, the UST program having previously relied on ASTM RBCA. In addition to establishing a single approach to site cleanup for all contaminated sites, the revised rules clarify other policies related to remediation, such as the conditions under which institutional and engineering controls can be employed to reduce exposures (see Section 5.5).

Indiana

The tendency to develop unified, risk-based approaches to site cleanup is not limited to Texas. Indiana has also recently developed guidance that will allow all programs in the state to use the same risk-based cleanup protocol. After February 1, 2002, all cleanup programs in the state will employ an integrated risk-based scheme, loosely patterned on ASTM RBCA. The previous guidance was widely regarded as out of date, and relied heavily on site-specific data and risk assessment. Previous to the new rules, it was also difficult for site owners to judge the level of cleanup that would be required without expensive site-characterization efforts.

Indiana's new program first compares site contaminant levels to statewide health standards, then allows developers the options of 1) remediating to meet the statewide standards across the site or 2) developing cleanup levels based on site-specific conditions and contaminant levels. The program relieves developers of future liability related to site contamination, but only for contaminants that have been reduced to statewide standards or site-specific cleanup goals. This provision provides developers with incentives to conduct thorough site investigations because liability relief does not apply for chemicals that have not been identified.

Pennsylvania

The Pennsylvania Department of Environmental Protection (PA DEP) has promulgated rules under "Act 2" legislation that allow developers to choose from one of three different cleanup levels. While risk-based, this approach is not tiered in the same fashion as ASTM RBCA. Instead, developers can select from three cleanup options: background levels, statewide health levels, or site-specific criteria. Interviewees from the PA DEP stated that approximately 70% of the projects entering the Voluntary Cleanup Program (VCP) choose to remediate to the statewide health-level standard. Throughout the assessment and remediation processes, the developer works closely with the PA DEP officials to address cleanup issues as they arise.

PA DEP's Act 2 also offers broad liability relief. Once a site meets one of the cleanup standards (residential, commercial, or industrial), the developer is granted immunity from future liability for all contaminants that were characterized and/or remediated.

California

While Texas, Indiana, and Pennsylvania use a single statewide approach to cleanup, other states have given the authority to local agencies. In California, some county agencies have adopted their own risk-based cleanup standards in addition to those adopted by the state. Each County has its own health care agency that reports to the Regional Water Control Board, the State Water Control Board, and ultimately to the California EPA.

Various agencies within the counties have also taken an active role in site cleanup. For instance, California has a law requiring school officials to investigate contaminated property prior to development, and the Los Angeles Unified School District has taken the initiative to develop their own risk-based standards for selecting school construction sites. The consensus of the board was that the ASTM standards provided a general road map, but were not comprehensive enough to be utilized without modification.

5.3 Public-Health Protectiveness

There was a consensus among the interviewees that modern risk-based cleanup methodologies provide a satisfactory level of protection for human health and environmental resources. Notably, we heard no "horror stories" of instances where risk-based approaches resulted in demonstrable harm due to inadequate remediation of site contamination, or where developers or other parties faced unanticipated liability as the result of using risk-based cleanup. In fact most of the interviewees expressed the opinion that the development of risk-based cleanup methods has improved the level of protectiveness of site remediation by providing uniform, simple, and relatively conservative standards for site cleanup. Again, our sample of interviewees was small, but the agreement on this point was striking. To our knowledge, there have been no studies that systematically compare patterns of health risk and liability at sites remediated using tiered approaches like ASTM RBCA with the experience at sites remediated using other approaches. If such differences exist, they will probably not become manifest for some time.

Regardless of whether risk-based approaches employ pre-defined tables or a tiered approach with site-specific analysis, the resulting cleanup levels tend to be set to correspond to very low risk levels (10^{-4} to 10^{-6} cancer risk, HQ value of 1.0 or 0.1), and are calculated using conservative assumptions about exposures pathways and conditions. An EPA toxicologist expert in risk assessment confirmed that the conservative nature of cleanup levels is derived using generally accepted methods. They also stated that as a risk assessment progresses from simple screening methods to more advanced site-specific analyses, a higher degree of expertise is needed to assure that cleanup levels are calculated correctly. It is perhaps for this reason that some states, which may not have sufficient expertise, discourage complex site-specific risk analyses.

A key feature of many risk-based cleanup approaches is the use of an initial screening step to identify sites and/or contaminants that do not require remediation, often using generic screening concentrations. Many sites escape the requirement for remediation altogether because contamination is below screening levels. The interviewees expressed the opinion that the current screening-level values are generally protective and provide adequate assurance that site contamination, if present, is present at levels that are not likely to pose unacceptable risks under realistic exposure scenarios or land use assumptions.

As noted previously, where tiered approaches are available there appears to be a strong tendency for developers to avoid the site-specific complexities of the higher tiers, where it is possible to do so. It is common for developers to view implementation of the simpler, yet more stringent, cleanup goals as a way of both limiting liability and increasing the value of properties by reducing potential restrictions on future land uses.

5.4 Impacts of Risk-Based Cleanups on Project Cost and Timeliness

The original attraction of risk-based cleanup methods lay in the promise that they would reduce remediation costs by allowing developers added flexibility in identifying cost-effective cleanup strategies for contaminated sites. Consistent with this promise, most interviewees stated that a major reason for the popularity of risk-based cleanups is the reduction of remediation costs. Because risk-based remediation can eliminate the need for complete removal of some contaminants, remediation costs can frequently be reduced, as compared to more stringent approaches; or remediation can even be avoided entirely. These options do not, however, eliminate the need for monitoring - another cost associated with risk-based cleanups. None of our interviewees provided quantitative data on the average reduction in project costs.

Despite reductions in remediation costs, it appears that the major perceived benefit of risk-based cleanup at most sites lies not in reduced remediation costs, but in expedited and simplified remediation. Cleanup levels are a major determinant of costs at only a small proportion of development projects, and only at these sites is the added cost of site-specific analysis justified by potential reductions in remediation costs. The large majority of contaminated sites dealt with by state cleanup programs are small, and contamination is relatively limited. In these cases, options for remediation may be quite limited, and elaborate analyses would not be cost-effective. In risk-based cleanup, developers face a simple, relatively predictable, relatively quick process, compared to a situation in which cleanup levels are determined by complex site-specific risk assessments.

The reduced potential for litigation, in the process of obtaining environmental approvals, was specifically identified by several interviewees as a major reason for the success of risk-based cleanup programs. This advantage is probably not directly due to risk-based cleanup, but rather to the statutory and regulatory changes that have been adopted by states as part of more general regulatory reforms. It should be noted, however, that if risk-based cleanup were not seen by the great majority of stakeholders in the development process as being technically sound, defensible, and protective, it is unlikely that the decrease in litigation would be so striking.

Some specific examples of the impacts on project costs and timeliness, provided during the interview process, include the following:

- Indiana suggested that reduced remediation costs might be offset to some extent by increased site-assessment costs. A risk-assessment expert familiar with the new Indiana risk-based cleanup rules noted that more work is required during the assessment phase of the program than was required under the older rules. A VCP manager from another state estimated that site assessment and risk analyses costs under risk-based cleanup could range from $40,000 up to one million dollars, depending on the complexity of a site. In both cases, it is possible that these increased costs can be attributed more to generally upgraded regulatory requirements for site characterization than to the use of risk-base cleanup approaches.

- In some states, including Pennsylvania, relief from liability is only granted for contamination that is identified and evaluated during the risk-based cleanup process. The Grants Manager for Pennsylvania's Department of Community and Economic Development (CED) Office

stated that this provision has caused an increase in risk-assessment costs under the current risk-based cleanup program, as developers are much more careful to thoroughly investigate site contamination. This same individual noted that his agency provides partial compensation for such costs, and an environmental consultant working in Pennsylvania stated that the increased risk assessment costs are generally offset by reduced remediation costs.

- The degree to which remediation costs are reduced under risk-based cleanup was noted by one interviewee to be highly variable, depending on the nature of contamination, and the intended land use. Generic screening levels applied to sites intended for residential land use can be 10 or even 100 times more stringent than standards based on more refined site-specific assessment. Therefore, cleanup costs can vary greatly, depending on what tier of analysis is used to set cleanup standards. One of the environmental consultants interviewed noted that groundwater contamination was generally much more expensive to remediate than soil, with the implication that flexible site-specific risk analyses, coupled with the availability of institutional controls (e.g., prohibition of groundwater use) could result in substantial cost savings.

- State regulators noted that the statutory timetables frequently imposed along with risk-based cleanup requirements were a major factor in reducing cleanup costs and speeding environmental approvals. Processes that had been time-consuming and required many rounds of negotiations with regulators have often become much more efficient and expeditious under new rules. "Customers" of the process were somewhat less enthusiastic, noting that delays still occurred, often due to overloads on regulatory agencies.

5.5 Policies Related to Engineering and Institutional Controls and Residential Development

Engineering controls allow contamination to remain in place and prevent or reduce exposures through the use of physical barriers or similar measures. Institutional controls are statutory, regulatory or contractual limitations placed on land or resources use. Some examples of institutional controls include zoning restrictions, easements, and deed restrictions. It is common for engineering and institutional controls to be used together at contaminated sites. The integrity of engineering controls, for example, may need to be guaranteed by some form of limitation on land use.

Policies with regard to the use of engineering and institutional controls vary widely among programs and regulatory agencies that use risk-based cleanup. Some state programs prohibit the use of such controls altogether. As discussed in Section 3, some programs vary the required degree of cleanup based on whether or not engineering or institutional controls are to be used. The majority of state programs allow engineering or institutional controls at sites intended for commercial or industrial use, where the potential for exposure is lower. However, the use of these controls is not as common on sites intended for residential developments.

In the opinion of several interviewees, state policies on the use of engineering and institutional controls have generally become more flexible and permissive with the advent of risk-based

cleanup. Before risk-based cleanups, state programs (and the Federal Superfund programs) relied heavily on "dig and haul" methods to remove contamination. Previously, the practice of allowing contamination to remain in place, even with engineering or institutional controls in place, was discouraged.

Several interviewees, however, identified specific cases in which such controls were deemed appropriate and appear to have been implemented successfully. The instances include two parcels developed under the Texas VCP as apartment complexes, where deed restrictions were used to prevent the use of contaminated groundwater. One of these projects was constructed on an abandoned landfill site. A soil cap (engineering control) was used with a system to monitor methane releases, in addition to the deed restrictions. Another example identified by a consultant was a parcel of land in Philadelphia where soil was heavily contaminated with lead. The remediation approach was to remove the soil that had the highest lead concentrations, and then cover the entire property with two feet of clean soil. A multi-unit residential project was constructed on the site, with deed restrictions that prohibit subsurface excavation or construction that might result in exposure of the contaminated soil.

These cases were identified by interviewees as success stories, where unused contaminated land was redeveloped successfully under risk-based cleanup regimes that allowed institutional and engineering controls. This sample is very small, however, and the long-term success of these and similar projects cannot be predicted. One interviewee from the Pennsylvania DEP indicated that deed restrictions (referred to as "notices") on the use of groundwater are commonplace for residential developments. In some cases, groundwater is unusable due to water-quality problems, rather than to the site contamination. Other interviewees noted variations in the use of institutional controls across states, with Texas being more inclined to allow them, and Indiana being less inclined to do so.

Some interviewees suggested that there was a tendency for developers to remediate sites to demanding cleanup standards, even when engineering or institutional controls were available. Developers choose this more-expensive option because having contamination remain on the site or having deed restrictions in effect can greatly reduce the value of a property and increase the owner's or developer's potential liability. There is a tradeoff between investigation and remediation costs on the one hand, and the enhanced value of properties in different uses on the other. Therefore, decisions that developers make regarding the levels of cleanup highly project-specific.

The primary concerns identified by interviewees regarding institutional and engineering controls are related to maintenance and enforcement. Several interviewees noted that there has been little experience to help determine how well land-use restrictions can be enforced in the long run (decades or longer). One interviewee identified a case in which institutional controls had failed to protect against exposure to lead contamination at an abandoned smelter site, where residential development occurred despite a deed restriction. However, this failure occurred in the relatively distant past, before risk-based cleanup programs were developed; and one experienced environmental consultant indicated that under current laws it would be most unlikely that such restrictions would be blatantly violated. Nonetheless, the overall level of concern among interviewees was significant.

5.6 Other Advantages and Disadvantages to Risk-Based Cleanup

Interviewees were asked about advantages and disadvantages of risk-based cleanup programs in addition to those discussed above. In responding to this question, many respondents took the opportunity to express their general enthusiasm for risk-based cleanup and accompanying changes in regulatory regimes, for many of the reasons discussed in previous sections. It should be noted, however, that we did not specifically seek out critics of such programs.

The general consensus among respondents was that the advent and implementation of risk-based cleanup has been an extremely positive occurrence. The majority agreed that risk-based cleanup is superior to previous approaches. The key advantages were the streamlining and simplification of the cleanup process, which has resulted in many more contaminated sites being developed than had previously been possible. An interviewee from the Texas VCP indicated that prior to 1993 the only viable options for most contaminated sites in Texas were either to clean them up to background levels or to limit land-use to waste disposal. As a result the number of parcels designated as "landfills" increased greatly prior to the introduction of risk-based cleanup. Similar improvements were noted in Pennsylvania where, prior to the implementation of a statewide risk-based system, developers were expected to set their own cleanup standards (many chose to use New Jersey standards). Cleanup plans then had to be approved on a case-by-case basis. After the passage of "Act 2," the standardization of cleanup process has meant that regulatory approvals occur much more rapidly, and more sites are being redeveloped. As noted previously, many of the "streamlining" benefits associated with risk-based cleanup can actually be attributed to broader reforms in contaminated-site cleanup regulation.

As discussed in Section 5.3, none of the interviewees felt that the implementation of risk-based cleanup had significantly diminished the degree of protection afforded to human health and the environment. Several interviewees with experience in cleanup goal-setting indicated that they saw risk-based cleanup methodologies as a technically sound, perhaps superior, approach to risk characterization and risk management at sites. They noted that the flexibility of the risk-based approaches made for better allocation of limited analytical (risk-assessment) resources. This view was echoed by that of several state regulators, who indicated that the use of risk-based cleanup made the technical aspects of their jobs much easier, and allowed them to focus more on the "hard" cases.

Some interviewees noted that, even with the advent of risk-based cleanup standards, still varied across the U.S. An environmental engineer stated that even in some states that use risk-based approaches, there is still an unacceptable degree of ambiguity about which cleanup levels and what types of controls will be accepted at a given site. In these cases, the use risk-based cleanup in and of itself does not automatically result in reduced project costs or expedited cleanups.

SECTION 6. SUMMARY AND DISCUSSION

6.1 Summary of Major Findings

Risk-based cleanup methodologies are currently used in the majority of state programs related to the cleanup and redevelopment of contaminated sites, and their use is continuing to expand. Whatever policies HUD adopts regarding contaminated sites must recognize this trend.

Specific features of risk-based cleanup vary across the states, but the most well-established and highly developed ("state-of-the-art") systems employ tiered approaches similar to ASTM RBCA, Illinois' TACO or the TRRP. The features of less structured approaches include the reliance on look-up tables or the use of screening risk calculations to derive cleanup levels, which are either generic or based on specific site conditions. Data are not currently available that would allow a comparison of the quality of cleanup-level decisions made using the state-of-the-art approaches with those made based on look-up tables.

Despite their diversity, the state risk-based cleanup methodologies that we reviewed share common technical origins in the site-specific risk-assessment methods originally developed to support the Federal Superfund program. Whether they are used in tiered approaches or to derive entries for look-up tables, the basic exposure equations are highly standardized. Toxicological values also come from standard sources (in general, EPA) and are easily available. Variations in other parameter values tend to be slight, reflecting broad agreements about differences in exposure potential in different exposure settings. The systems that we reviewed all use conservative target risk levels (10^{-4} to 10^{-6} cancer risk, non-cancer hazard quotient values of 1.0 or 0.1), as the basis for setting cleanup goals.

The consensus among the experts that we interviewed was that modern risk-based cleanup methodologies provide adequate protection of human health and the environment, both in theory and in practice. Specifically, they indicated that changing from older systems to risk-based cleanup has not resulted in a reduction in protectiveness and that the technical quality of cleanup decisions is improved, due to the overall modernization of risk assessment methods that generally has accompanied the introduction of risk-based approaches. While the number of interviews was limited, none of the respondents reported any "horror stories" related to the failure of risk-based cleanup to protect public health or the environment.

Many states build incentives for stringent cleanup into their risk-based cleanup approaches in the form of provisions that reduce liability related to contamination that the state certifies as being adequately remediated, or reduced restrictions on land use at sites cleaned up to the most demanding standards. Irrespective of regulatory requirements, interviewees suggest that there is a tendency for developers to opt for the most stringent cleanup levels, or for complete contaminant removal, because doing so increases the value of the property and reduces potential future liability. This tendency is especially true for relatively small and/or lightly polluted sites, where the costs of complete cleanup are not prohibitive.

Risk-based cleanup standards are often implemented as part of integrated regulatory approaches that include provisions for expedited environmental review, that limit liability, and that define

preconditions for the use of engineering and institutional controls. Our research indicates that is it likely that a substantial proportion of the success of risk-based cleanup programs can be attributed to the regulatory reform and rationalization of all the elements of voluntary cleanup programs (i.e., liability and fiscal issues), rather than to the implementation of risk-based cleanup by itself.

The literature and our interviewees both identify reduced remediation costs and improved speed and predictability in the remediation process as the key benefits of risk-based cleanup. Reduced liability is less frequently mentioned, although, as stated above, some state cleanup programs include liability relief, along with risk-based methods, in their cleanup regulations. Whatever the reasons, several interviewees cite examples where the adoption of risk-based cleanup approaches relieved substantial "logjams" of sites needing remediation, and this general pattern seems to be reflected in the available literature.

Expert opinion is divided on policies related to the use of engineering and institutional controls in conjunction with risk-based cleanup, particularly for residential projects. On one hand, allowing such controls instead of total removal of site contamination is entirely consistent with the major thrust of risk-based cleanup, which is that cost-effective decisions should take into account all relevant site-specific considerations (including the feasibility of non-removal technologies). On the other hand, there is a deep reluctance in some segments of the remediation community (supported by at least one bad experience) against allowing engineering barriers and institutional controls, based on their belief that the continued effectiveness of such controls is very hard to guarantee.

State policies regarding the allowance of engineering and institutional controls based on land use reflect this diversity of opinion. A minority of states allows such controls for both residential and non-residential projects, with few limitations. Other states place varying restrictions, up to and including total prohibition, on the use of engineering barriers or institutional controls. Existing data cannot yet support a systematic comparison of performance of programs according to whether they allow institutional and engineering controls. We presume that each program reflects local preferences about how potential risks and liability should be balanced against the need to reduce remediation costs and encourage development.

6.2 Implications of Risk-Based Cleanup for HUD Development Programs

At this stage in this project to evaluate HUD site contamination programs, it would be premature to make any detailed policy recommendations. This task has identified a number of salient issues that need to be addressed, including the near-universal acceptance of risk-based methods, the great diversity of the methods used in different states, and the close and complex relationships between risk-based cleanup methods and the regulatory frameworks within which they are implemented. Whatever policies are developed will need to address both the technical and regulatory complexities of risk-based cleanup.

It is tempting to suggest that a HUD specification of minimum national technical standards for risk-based cleanup methodologies would be desirable, but it is important to recognize that the diversity in state approaches reflects to some degree the differing conditions across the states and

the differing objectives of the various states programs. Setting technical specifications also would not address concerns related to state oversight; e.g., it is possible for a state to have a technically excellent program, but insufficient resources to adequately oversee its implementation.

These and other issues will be addressed in more detail in subsequent tasks.

SECTION 1. INTRODUCTION TO TASK 2

1.1 Background

ICF Consulting has been engaged by the U.S. Department of Housing and Urban Development (HUD) to complete a study of HUD's site contamination policies. HUD plays a major role in the development and redevelopment of America's cities. Because the Department exercises leadership in the growth of these urban areas, HUD's major offices (i.e., Housing, Community Planning and Development (CPD), Public and Indian Housing (PIH)) are expected to exercise leadership in the renaissance of America's urban areas and must frequently address the redevelopment of potentially contaminated sites.

For the purposes of this report, a contaminated site can be considered to be a property or real estate where there is high suspicion of onsite substances that, depending on specific circumstances, may be hazardous to human health and environmental quality. According to US EPA, more than "40 million tons of hazardous waste is produced in the United States each year. It is produced by large industrial facilities such as chemical manufacturers, electroplating companies, petroleum refineries, and by more common businesses such as dry cleaners, auto repair shops, hospitals, exterminators and photo processing centers."[14]

The use or reuse of a potentially contaminated site raises issues of health and safety, underwriting issues of cost and financial soundness, timeliness of the development process, as well as design quality and urban form. HUD's requirements and guidelines play important roles in determining how the Department's resources address these issues. In most cases, as will be discussed in detail in this document, HUD delegates primary authority to address environmental review and the management of site contamination to states, tribes, and local authorities. While HUD establishes general guidelines for states and localities to follow in the management of site contamination, it is state or local agencies that approve remediation plans and provide final environmental approvals for development projects. For many programs and in many circumstances, however, HUD retains its responsibility for environmental review. In this case, HUD assures that its standards are met before it approves its own resources being directed toward development projects.

Based on specific program needs, different offices in HUD have adopted a variety of policies and practices for dealing with site contamination. These policies include varying requirements for the timing of remediation, general guidance for site remediation, and policies concerning the role of engineering and institutional controls.

This report is the product of Task 2. The objective of this task is to describe and assess the site contamination policies and procedures at HUD.

1.2 Study Methodology and Organization of the Report

[14] http://www.epa.gov/ebtpages/wasthazardouswaste.html

In order to prepare this report, ICF reviewed HUD policy documents and Web-based information, completed a site visit to HUD's Chicago Field Office, and interviewed, in detail, 21 individuals from HUD staff throughout the country, as well as conducted brief discussions with at least 10-15 additional staff members. The main methodological approach for this study has been to work from the key themes identified in HUD's Scope of Work to set up an analytic framework for viewing the policies and procedures of HUD and other agencies. The questions asked and studied regarding other agencies and of HUD were similar, so that comparisons would be facilitated. The key themes and questions explored in the interviewees are included in the appendices.

This document is organized in the following manner. Section 1 provides a brief overview of the study, including this description of the methodology and organization of the report. Section 2 describes HUD's policy approaches for addressing environmental review requirements and site contamination. Section 3 examines HUD's two types of transactions that impact environmental review. Section 4 discusses strengths and weaknesses in HUD's approach to addressing site contamination. Section 5 focuses solely on the issue of whether Multifamily Housing should alter its current policy and allow contamination to be left on site. Finally, Section 6 provides a conclusion, including a discussion of next steps for the study.

1.3 Brief Review of HUD's Mission, Structure and Programs

HUD's mission statement says that HUD shall provide for "a decent, safe and sanitary home and suitable living environment for every American."[15] Elements of that broad mission include:

- "Creating opportunities for home ownership
- Providing housing assistance for low-income persons
- Working to create, rehabilitate, and maintain the nation's affordable housing
- Enforcing the nation's fair housing laws
- Helping the homeless
- Spurring economic growth in distressed neighborhoods
- Helping local communities meet their development needs."[16]

HUD's role is to provide funding assistance to projects and activities that meet the objectives of its mandate. It disburses funds through its various programs, which include mortgage insurance; rental vouchers; assistance for housing construction, rehabilitation of buildings, improvements to infrastructure systems, and economic development activities.[17]

HUD does not have a role in selecting project locations nor is HUD directly responsible for conducting development activities. These actions are carried out by private for-profit businesses, non-profit organizations, entities of local and state government, and third parties. However, HUD does have control over whether to provide funding or incentives for development through its programs.

[15] www.hud.gov/library/bookshelf18/mission.cfm
[16] *ibid.*
[17] Information about HUD programs can be found at http://www.hud.gov/funds/index.cfm.

HUD has a complex organizational structure organized into "Program offices," "Support Offices" and "Local offices." Program offices are the administrative homes of HUD's main program activities. The largest and most significant program offices are the Office of Community Planning and Development (CPD), Office of Housing (Housing), and the Office of Public and Indian Housing (PIH). Staff for these programs is in both the Washington, DC headquarters and in the local offices that are disbursed throughout HUD's ten national regions, in State Offices and Area Offices. Not all programs and support functions are represented in every local office. Representation varies from location to location. Support offices cover the wide range of functions that do not fit administratively into either program or local offices. More detail about HUD's organization and programs can be found at http://www.hud.gov/about/index.cfm. The roles of these offices, both in Washington and in the field, with respect to site contamination will be discussed, below.

HUD's current organizational structure is in "cylinders" in which the program offices (Housing, CPD, PIH, Multifamily Housing Assistance Restructuring and FHEO) in State Offices and Area Offices communicate directly with their headquarters counterparts instead of through the Regional, State or Area Coordinators. Policy notices, memoranda and directives flow directly from the headquarters office to the local program office. The directors of the field office have decision-making authority for the programs they administer.

1.3.1 The Office of Community Planning and Development

The Office of Community Planning and Development provides grant assistance to cities, counties and states to carry out a wide range of community development activities directed toward neighborhood revitalization (e.g., housing development for low-income, disabled, and homeless), economic development, and improved community facilities and services. Assistance is given through a variety of programs which include: the Community Development Block Grant Program (CDBG), State Small Cities Block Grant Program, Colonias Set-Aside Provision (State CDBG Program), HOME Investment Partnerships Program, Supportive Housing Program, and Homeownership Opportunities for Persons with AIDS (HOPWA).

Some CPD programs are initiated as pilot programs or Departmental initiatives. The purpose of these is to demonstrate new techniques for promoting homeownership, innovative housing, economic and community development activities, and recovery from Presidentially declared disasters - Housing Finance Agency Risk-Sharing Programs, Rural Housing and Economic Development, CDBG Disaster Recovery Initiative, Brownfields Economic Development Initiative, HUD's Initiative for Renewal Communities, Urban Empowerment Zones, and Urban Enterprise Communities (RC/EZ/EP).

1.3.2 The Office of Housing (Housing)

The Office of Housing administers mortgage insurance programs for single-family and multifamily housing, and disposal of properties where HUD has taken title on a HUD insured mortgage. Single-family programs provide assistance for purchase and rehabilitation of existing dwelling units. However, multifamily programs include not only mortgage insurance programs

for purchase and refinancing of existing units, but also construction and rehabilitation of rental units, such as low income rental housing, nursing homes, housing for elderly persons, assisted living facilities, intermediate care facilities, and board and care facilities.

1.3.3 The Office of Public and Indian Housing (PIH)

The Office of Public and Indian Housing has two major divisions - the Office of Public Housing and the Office of Native American Programs (ONAP). The Office of Public Housing works primarily with public housing authorities, while ONAP's clients are tribes, Alaska native villages, and Indian housing authorities. Funds from HUD to Public Housing Authorities are used to operate the Housing Choice Voucher Programs (Section 8), support reconstruction and development of subsidized housing, modernize public housing developments, promote economic independence and self-sufficiency, encourage home ownership, and operate the HOPE VI program.[18] The Office of Native American Programs provides grants to tribes and tribally designated housing entities (e.g., Indian housing authorities, Alaska regional councils) for housing and community improvements. Entitlement grants, authorized by the Native American Housing and Self-Determination Act (NAHASDA), are awarded to Federally-recognized tribes. These grant funds are used for housing activities to benefit tribal members and are administered through the Indian Housing Block Grant (IHBG) Program, Title VI - Federal Guarantees for Financing for Tribal Housing Activities, Section 184 Loan Guarantee Program. In addition, grant funds are awarded to some tribes following a national Indian Community Development Block Grant competition for project assistance to improve housing stock, provide community facilities (e.g. health clinics and community centers), develop or improve infrastructure systems, and expand job opportunities by supporting economic development projects on tribal lands.

1.4 Why HUD is Concerned About Site Contamination

There are three main reasons for HUD to have concerns regarding contamination of sites by hazardous materials: HUD must meet National Environmental Policy Act (NEPA) regulatory responsibilities; HUD must address potential financial and liability impacts of environmental contamination; and HUD's mission embraces housing quality and safety. Each of these is a legitimate and important reason and will be discussed briefly, below. Section 3 discusses how these concerns interact with HUD's core financial transactions.

1.4.1 NEPA

The statutory reason that HUD conducts environmental due diligence is to implement its responsibilities under NEPA and related Federal laws and authorities. NEPA requires that all federal agencies evaluate and, if necessary, ensure the mitigation of environmental impacts. "In enacting NEPA, Congress recognized that nearly all federal activities affect the environment in some way and mandated that before federal agencies make decisions, they must consider the effects of their actions on the quality of the human environment."[19] Site contamination is only

[18] http://www.hud.gov/offices/pih/programs/ph/programs.cfm
[19] http://www.whitehouse.gov/ceq/

one of the impacts that the NEPA process is designed to address. Others include wetlands, historic preservation, communities, noise, management of floodplains, and much more.[20]

Federal agencies have been required to promulgate regulations that describe how they will implement NEPA. HUD ensures implementation of NEPA and the related laws and authorities (such as CERCLA and HUD Policy 79-33[21]) under the direction of two regulations, 24 CFR Part 50 (Part 50) and 24 CFR Part 58 (Part 58), which describe requirements for conducting "environmental review." Part 50 is the regulation for when HUD conducts the environmental review. Part 58 is the regulation for when this responsibility is delegated to a state, local or tribal "Responsible Entities."

These regulations specify, among other things, which HUD activities fall within the defined categories of NEPA review: *categorical exclusion*, *environmental assessment* (EA), and *environmental impact statement* (EIS). NEPA review for site contamination is conducted in the context of one of these three categories.

Categorical exclusions are "a category of actions that do not individually or cumulatively have a significant effect on the human environment. Categorically excluded activities typically replace or improve existing facilities or structures, i.e., they retain the original usage of a structure or facility; do not increase the size or unit density of the structure or facility being improved by more than 20 percent; do not change land uses (commercial to residential); and, in the case of rehabilitation, the cost of rehabilitation is less than 75 percent of the total estimated cost of replacement after rehabilitation."[22] "Categorically excluded activities require the completion of a 'compliance determination' review using a 'statutory checklist format.' This format lists ten Federal laws and authorities found in Part 58.5. The proposed activity is reviewed to determine whether it complies with the requirements of the Federal laws and authorities. If the proposed activity triggers any of the Federal law and authority reviews…the specific review must be completed before the 'compliance determination' can be considered finished."[23, 24] When there

[20] More information on NEPA and its general requirements can be found in Appendix G of this document; at NEPAnet, a Web site maintained by the Department of Energy at http://ceq.eh.doe.gov/nepa/nepanet.htm; and the Web site for the Council on Environmental Quality (CEQ), at http://www.whitehouse.gov/ceq/. CEQ, which is part of the Office of the President, has the role of coordinating environmental policies among federal agencies and offices, as they seek to comply with NEPA and other environmental requirements.

[21] Note that as of this writing HUD is proposing to replace Notice 79-33 with new restrictions to be inserted in Part 58. These restrictions include: 1) Properties that are being proposed for use in HUD programs must be free of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property. 2) The environmental review of multifamily housing with five or more dwelling units must include the evaluation of previous uses of the site or other evidence of contamination on or near the site to assure that the occupants of the proposed sites are not adversely affected. 3) Particular attention should be given to any proposed site on or in the general proximity of such areas as dumps, landfills, industrial sties, or other locations that contain or may have contained hazardous wastes. 4) The responsible entity shall use current techniques to undertake any necessary investigations.

[22] U.S. Department of Housing and Urban Development. *Environmental Review and the HOME Investment Partnerships Program*, Notice CPD-01-11, July 17, 2001, p. 14.

[23] Ibid, p. 15.

[24] There is an additional group of activities that are Exempt from any requirements, other than documentation that the activity in question is exempt. In general, these activities have been determined by HUD to have no physical impact on the environment or alter any conditions that would require an environmental review or compliance determination under Federal laws and authorities…." Ibid, p.13.

are extraordinary circumstances, an activity that otherwise would be categorically excluded from review may require an EA.

An EA is a concise public document that provides sufficient evidence to determine whether to prepare a Finding of Significant Impact (FOSI), thereby triggering an EIS, or a Finding of No Significant Impact (FONSI). "While an EA addresses the same issues as those found in a Compliance Document review [for categorically excluded activities], it also includes the following analysis: 1) determines existing conditions; 2) identifies, analyzes and evaluates all potential environmental impacts; 3) examines and recommends feasible ways to eliminate or minimize adverse environmental impacts; 4) examines alternatives to the project; [and] 5) includes compliance determination for all other Federal laws and authorities cited in Parts 58.5 and 58.6…"[25] In general, an EA is required "for five or more units only if the sites are 2,000 feet or less and/or there are more than four units on a site," for such activities as new construction, major rehabilitation, "conversion of non-residential land use to residential land use, and acquisition of vacant land for development when 5 or more units are involved."[26]

"An environmental impacts statement [EIS] is a complex analysis required for proposed activities that would have a significant impact on the human environment in accordance with section 102(2)(C) of the National Environmental Policy Act."[27] It is conducted when an EA has found there to be significant impact[28] or, by default, for "projects involving 2,5000 or more units being: removed, demolished, converted, rehabilitated, constructed."[29]

For both Part 50 and Part 58, consideration of the impacts of site contamination comes in the context of an EA or an EIS. The process for assessing and mitigating site contamination is the same for an EA as for an EIS, because the "state of the art" of site assessment and remediation is independent of the NEPA process. Section 2 of this document discusses how HUD carries out the requirements of these two regulations with respect to site contamination.

1.4.2 Financial Impacts of Environmental Contamination

HUD is also concerned about the financial impacts of site contamination. There are four basic concerns:

1) *Protecting against exposure to liability under environmental statutes* – If HUD ends up owning a property for which it had provided mortgage insurance or a direct loan (because of default by a borrower), and contamination on the property causes harm, HUD may be held liable even if HUD was not the original cause of the contamination. HUD seeks to avoid such liability and the associated financial burden.

[25] Ibid, p. 16.
[26] Ibid, pp 16-17.
[27] Ibid, p. 17.
[28] In many cases, agencies that find impacts for which mitigation is necessary, in their EA process, prepare their mitigation plans without conducting a costly EIS.
[29] Ibid, p. 17.

2) *Enhancing the likelihood of project success and that borrowers can repay* -- HUD wants its program investments to have a high likelihood of success. Properties where contamination must be overcome face an additional cost/financial hurdle that other properties may not face, thereby creating an additional obstacle to borrowers' ability to repay their loans. These financial concerns are also related HUD's desire to achieve program goals and agency mission. When HUD evaluates proposals for funding based on the soundness of the approach, the applicant's approach to addressing the contamination may be part of what HUD takes into account.

3) *Ensuring the value of collateral* – If HUD takes title to a property and then discovers that the property is contaminated, HUD may not be able to re-sell the property at the expected price without conducting a potentially costly cleanup. HUD would suffer financially from either the cost of cleanup or the lowered sale price.

4) *Maintaining a positive relationship with the public* – HUD wants to avoid public relations disasters that could come from inadvertently harming the health of residents or neighbors.

1.4.3 HUD's Mission – "A Decent, Safe and Sanitary Home and Suitable Living Environment for Every American…"

As stated above, HUD's mission statement asserts HUD's desire for "a decent, safe, and sanitary home and suitable living environment for every American."[30] HUD staff includes site contamination as one of the items from which homes and communities must be protected. There are two different, sometimes competing, interpretations of this element of HUD's mission. They can be characterized as *avoiding contamination* and *overcoming contamination*. HUD can *avoid* contamination by refusing to finance redevelopment when there is contamination involved. HUD can *overcome* contamination by financing cleanup and/or financing redevelopment of contaminated sites.

One of the conclusions of this document is that HUD appears to be evolving, in its interpretation of its mission, from *avoiding* contamination to *overcoming* contamination, in the broader context of its goal to support urban revitalization.

The next section discusses how HUD conducts environmental reviews. It will include a discussion of how the NEPA, financial and mission-related reasons (discussed in Section 1.4) for being concerned with site contamination interact with the approaches to environmental review with respect to different programs.

[30] http://www.hud.gov/library/bookshelf18/mission.cfm

SECTION 2. HOW HUD CONDUCTS AN ENVIRONMENTAL REVIEW

For all HUD-assisted activities, an environmental compliance review is required to satisfy the requirements of NEPA and/or related Federal laws and authorities,[31] as prescribed by regulation. This process is triggered when HUD insures a loan for the development of a property or when a participant in a program or a recipient of a grant uses or intends to use HUD funds to purchase property to construct or rehabilitate a building or convert a building to another use. Environmental review addresses historic preservation, noise, wetlands, site contamination, and NEPA-related issues such as water protection, socioeconomic issues, and solid waste. The policy is firm: all properties intended to be used in HUD programs must be reviewed for environmental impacts. For some HUD programs, environmental review is also a requirement in the application process.

Addressing the potential for, and the reality of, contamination is part of HUD's process of environmental review. That review must include an investigation of the possibility of on-site contamination, as well as potential exposure to off-site contamination that could affect project occupants' health and safety. 24 CFR Parts 58 and 50 are the key regulations that provide the framework of HUD's policies and procedures with respect to meeting NEPA requirements and addressing site contamination.

Parts 58 and 50 differ from each other in terms of designating the "responsible Federal official". Because the responsible Federal official must accept possible NEPA liability for any environmental consequences of site contamination arising at a project, designation as the responsible Federal official is a significant event. Under Part 58, state governments, local governments, and tribes that have received HUD funds, or are connected to an organization that has received HUD funds, are the responsible Federal officials that complete environmental compliance reviews. Under Part 50, HUD acts as the responsible Federal official and is ultimately responsible for ensuring NEPA compliance.

2.1 Part 58

Part 58 regulates HUD programs where units of general local government, states and Indian tribes assume the role of "responsible Federal official" for purposes of compliance with the National Environmental Policy Act (40 CFR 1508.12, "Federal agency"). Each of these entities becomes the "responsible entity" (RE).[32, 33] Part 58 directs REs to assume responsibility for environmental review, comply with NEPA and other federal regulations, consult with other

[31] Not all HUD projects require compliance with NEPA. Some are categorically excluded from NEPA – i.e., rehabilitation or construction of one to four dwelling units. If they are categorically excluded, they still have to comply with CERCLA (section 50.4) or HUD Policy 79-33 (section 58.5).

[32] Some HUD program funds are directed to REs and some are not. There are categories of recipients that are not qualified to fulfill the role of RE, including non-profit organizations, housing authorities, qualified finance agencies, and universities.

[33] Notice 79-33, referenced in section 58.5, specifies that environmental reviews should include steps to screen for toxic chemicals and radioactive substances when Community Development Block Grant (CDBG) funds are used for housing construction (Page 4, item D), including changes in land use and increases in unit density. It is assumed that citation of this notice in Part 58 implies broader application of the notice, to include all HUD programs covered by Part 58 (sec. 58.1(b)). This notice does not apply to acquisition, leasing and minor rehabilitation.

governments and the public when preparing an environmental review, determine and describe existing conditions of a particular project site, identify and determine the "depth of significance" of all potential environmental impacts and how site conditions would change as a result of the project, and examine ways that changing a project could minimize its negative environmental impacts or develop alternatives to the project itself.

Since HUD is not the responsible entity, it does not have a direct role in the environmental reviews prepared by REs. However, Part 58 requires HUD to act in a minor role. Specifically, HUD has oversight responsibilities in which it ensures that procedural compliance is achieved. Through Part 58, the Department provides general guidance through the publications "Environmental Review Guide for Community Planning and Development Programs" and "Choosing an Environmentally 'Safe' Site", but offers no specific guidance on standards for remediation and no prohibition on using program funds for cleanup costs nor prohibitions on the use of engineering and institutional controls. For programs that fall under Part 58, REs are responsible for all elements of NEPA-driven environmental review with respect to contamination, which include investigation, cleanup, monitoring, liability and costs.

Under Part 58, HUD is required to monitor REs on a regular basis to ensure that they are complying with their requirements for environmental review. If HUD determines that an RE is not fulfilling its requirements, it may choose among various alternatives, according to what is appropriate in the particular circumstances. Options include: 1) providing training to the RE so that it is able to fulfill its responsibilities, 2) conducting Part 50 reviews of the neglected projects, and/or 3) withholding funds from the RE until the RE fulfills its responsibilities with respect to environmental review (Section 58.77).

In terms of RE's implementation of Part 58 reviews, it is useful to distinguish between two categories of the relationship between recipients of HUD funds and REs. For some programs subject to Part 58, the direct recipients of HUD funds are the REs. CPD Part 58 programs tend to be structured in this manner; examples include CDBG, HOME, and ESG. For these programs, a state or local government is both the recipient and the RE. Certain programs within ONAP function in this manner, as well, including IHBG. In this case, there is a direct connection between the right to use HUD program funds and the responsibility of conducting a Part 58 review.

For other programs subject to Part 58, the recipients may not be REs. Grants to Public Housing Authorities (PHAs) and Tribally Designated Housing Entities (TDHEs) function in this manner. Because these housing authorities are not REs, they must reach agreement with the local, state or tribal government RE for the RE to assume the role of "responsible Federal official" and conduct the environmental reviews on behalf of the housing authority. In practice, this lack of a direct connection has led to problems of coordination and implementation in various local settings. For example, when a county housing authority wants to develop a project within the jurisdiction of a city, the county must convince the city to become the responsible entity, even though the city is not the recipient of the HUD funds.

2.1.1 Environmental Review Under Part 58

As part of the environmental compliance review, an RE must manage the possibility and, where applicable, the existence of contamination on a development site. In most cases, private contractors who have specialization in environmental engineering and risk analysis conduct the actual analyses, planning and engineering involved in such management. The contractor is paid by one of the principal parties (either the developer or the lender) for the development project, though it is not uncommon for an RE to serve as one of the principal parties in a HUD-assisted program. The RE is to review and understand the environmental reports so as to evaluate whether there are areas of risk about which the RE must be concerned. Part 58 requires that the RE work in partnership with federal, state and local environmental regulatory authorities to ensure that the property is in compliance with all requirements. Once the RE is satisfied that all requirements have been met, it may submit a request to HUD for the release of funds, when required.

There is an appeals process afforded the public, interested persons or agencies through which one of these parties may, on the basis of procedural noncompliance, request that HUD not release project funds. This process is initiated when the RE issues a public notice advising the public of its intent to request release of funds from HUD. If it is brought to HUD's attention that compliance with Notice 79-33[34] has not been achieved, HUD will not release project funds until that requirement is met. HUD staff will also conduct post-review monitoring of the REs environmental records to ensure compliance with NEPA and Part 58. If, during a post-review monitoring, HUD determines compliance with 79-33 was not achieved, repayment of HUD program funds could be required.

As will be described in later in this section, staffing shortages have restricted HUD's ability to conduct the level and depth of monitoring that is required. A CPD Field Office Director has said that "nothing more than a cursory monitoring is done for the release-of-funds process to make sure that they are going through the correct process. However, [broader] environmental monitoring has not been done for 15-20 years."[35]

2.1.2 Managing Site Contamination Under Part 58

As described in the report for Task 1, the basic steps for managing contamination are screening (or preliminary assessment), assessment, remediation, and monitoring. Standards for each of these steps and the roles of REs and HUD with respect to managing site contaminated are discussed below.

Screening and Preliminary Assessment[36]. Under Part 58, standards for conducting a preliminary assessment of a site are set by state and local environmental regulatory authorities. There are no

[34] HUD is likely to phase out Notice 79-33 in 2003 and incorporate these requirements in regulations.
[35] Naymola interview.
[36] For more thorough discussions of this topic, please refer to the reports for Tasks 1 and 3. As a summary -- to determine whether there is reason to suspect toxic contamination, organizations conduct a review of relevant data that can be obtained without the expenditure of a great deal of resources. "Phase I" analysis is increasingly the industry and government standard, though some organizations still use versions of the Transaction Screen Analysis (ASTM).

detailed requirements from HUD, other than the broad mandates under NEPA and Part 58. Many, perhaps even most, state regulatory agencies require that a Phase I analysis be prepared, in accordance with ASTM standards.[37] There are internal HUD proposals, which have not yet been finalized, to require that Phase I analyses be required for all Part 58 reviews.

Detailed Assessment and Remediation[38]. As with screening, the criterion for completion of assessment and remediation is the acceptance of the work by state and local authorities.[39] HUD's only role is to monitor the local government's processes. HUD has established no detailed requirements on how assessment and remediation should be conducted.

Cleanup Standards. As with assessment and remediation, cleanup standards are determined by state and local regulatory authorities. In particular, HUD has no prohibitions under Part 58 on the use of institutional or engineering controls, for any type of use. Approval of a remedial approach by a state regulatory authority is sufficient for HUD to release its funds. Nor is there any requirement that remediation be complete before the funds are released. It is not unusual for HUD-program funds to be used for remediation.

2.1.3 Guidance and Resources

In addition to Part 58, HUD has provided staff with guidance on working with REs through the following documents:

- *Environmental Review Guide for Community Planning and Development Block Grant Programs* (HUD CPD 782).[40] This guide covers processes for RE Environmental Review. It includes a section on "Hazards, Nuisances, and Site Safety," which addresses contamination. It provides a series of checklists, similar to a Transaction Screen Analysis,[41] and assessment questions that help CDBG grant recipients identify "potential risk to the public or project users from both natural and man-made risks to people or property damage."[42]
- "Choosing an Environmentally Safe Site" provides information on environmental risks that should be considered when selecting a project site. This document was included as an attachment to the 2002 SuperNOFAs.[43]
- *Community Planning and Development Monitoring*, Chapter 9: Environment. This chapter explains the environmental monitoring process for when the environmental review under Part 58 is delegated to the local community.

[37] ASTM's approaches to Phase I and Phase II analyses are described in detail in the draft report for Task 1.
[38] If a Phase I analysis determines that a site is at risk for contamination, additional testing is completed in order to determine whether contamination is present and to identify its nature and extent. Current industry and government practice is to call this step a Phase II analysis, though there is a wide variety of approaches to this level of assessment. When a Phase II site assessment indicates the presence of toxic contamination on a site, a "remediation" plan is prepared for the removal, cleanup, and/or containment of the hazardous substances. More-thorough explanations of assessment and remediation can be found in the draft reports for Tasks 1 and 3.
[39] Broun interview.
[40] Broun interview.
[41] More-thorough explanations of Transaction Screen Analyses can be found in the Task 3 draft report.
[42] *Environmental Review Guide for Community Development Block Grant Programs.* Page 61.
[43] Federal Register, vol. 67, no. 58, 3/26/02 page 14390 – Appendix A

- Notice 99-37 – Indian Housing Block Grant Program Guidance and Procedures If Tribes Do Not Assume Environmental Review Responsibilities Under 24 CFR Part 58, reissued 2001. This detailed notice thoroughly explains the responsibilities of tribes and ONAP staff when a tribe does not assume environmental review responsibilities under 24 CFR Part 58.
- Notice 79-33 – Policy Guidance to Address the Problems Posed by Toxic Chemicals and Radioactive Materials, September 10, 1979. Although this notice is very dated, it dictates that existing HUD environmental review procedures should be used to determine a project's eligibility for HUD funding and lists procedures to be used when potential site contamination is found.

The department has additional guidance documents for more specific programs. These include Notice CPD-00-03 – Field Environmental Review Processing for HUD Colonias Initiative (HCI) Grants and Handbook; 1390.5 Environmental Review Guide for Housing Opportunities for Persons with AIDS/HIV Program; Notice CPD-01-11 -- Environmental Review and the HOME Investment Partnerships Program; and Notice CPD 99-7 Field Environmental Review Processing for the HUD Empowerment Zones (EZ).

2.2 Part 50

Part 50 is the applicable regulation when HUD retains the Federal responsibility for environmental review. In addition to process differences from Part 58, which will be described below, Part 50 Section 3 describes HUD's environmental policy for the purposes of the Part 50 regulation. Part 58 has no equivalent section, reflecting the delegation of policy to state, local and tribal authorities. Important statements within Sec. 50.3 include:

> ***50.3.a.*** It is the policy of the Department to reject proposals which have significant adverse environmental impacts and to encourage the modification of projects in order to enhance environmental quality and minimize environmental harm.
>
> ***50.3.1***. It is HUD policy that all property proposed for use in HUD programs be free of hazardous materials, contamination, toxic chemicals and gasses, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property.
>
> ***50.3.2.*** HUD environmental review of multifamily and non-residential properties shall include evaluation of previous uses of the site and other evidence of contamination on or near the site, to assure that occupants of proposed sites are not adversely affected by the hazards listed in paragraph (i)(1) of this section.
>
> ***50.3.3.*** Particular attention should be given to any proposed site on or in the general proximity of such areas as dumps, landfills, industrial sites or other locations that contain hazardous wastes.
>
> ***50.3.4.*** HUD shall require the use of current techniques by qualified professionals to undertake investigations determined necessary.

Key process requirements for HUD under Part 50 are that it must:

- Begin the review process at the earliest time possible so that problems are identified at an early stage.
- Advise applicants of environmental requirements.
- Require program applicants to assure that they will comply with all environmental requirements, submit to an environmental review, carry out mitigating measures, and obtain HUD approval before acquiring, leasing or altering the condition of properties.
- Verify that properties proposed for use in HUD programs are free of hazardous materials, contamination, toxic chemicals, etc. where a hazard could affect the health and safety of occupants or conflict with the intended use of those properties.
- Complete HUD Form 4128, for projects determined to be categorically excluded (sec, 50.20) or requiring preparation of an environmental assessment.
- Complete an environmental impact statement (EIS) when necessary.
- Prior to approval of a project, establish an "Environmental Management and Monitoring Program" when necessary.

HUD conducts Part 50 reviews in three broad circumstances:

- For all programs through which HUD provides mortgage insurance, which includes most programs within the Office of Housing.
- For all grant programs, for which the recipients are non-profit organizations, universities, or others that do not have a governmental connection to an RE (many of these programs lie within CPD). In CPD, for example, recipients for Rural Housing Development and some projects with the Supportive Housing Program are non-profits organizations. HUD conducts Part 50 reviews for these programs.
- When units of local, state or tribal government who are eligible to be REs decline or are unable to assume the role of "responsible Federal official." This circumstance occurs with programs in both CPD and PIH, but is more common in PIH. In PIH, units of local government or Indian tribes must agree to assume the role of "responsible Federal official" on behalf of the housing authorities (PHAs and TDHEs) who are the recipients of funds.[44] If these entities decline to assume this role, HUD is responsible for the environmental review under Part 50. In practice, HUD and the Army Corps of Engineers, with whom PIH has an agreement, conduct a large number of Part 50 reviews for PIH programs.

2.2.1 Environmental Review Under Part 50

HUD retains the Federal responsibility and must ensure that the requirements of Part 50 are followed. In most cases (as with Part 58), private contractors who have specialization in

[44] The Office of Native American Programs (ONAP) contains programs that are similar to non-Indian-targeted programs in CPD and Public Housing. When funds flow through the Tribal Government, as with ICDBG, the recipient is the RE and environmental review is almost always under Part 58. When funds flow through the TDHEs, the RE-tribe must conduct the environmental review on behalf of the TDHE, and Part 50 may be done on occasion.

environmental engineering and risk analysis conduct the actual analyses, planning and engineering involved in such management. The contractor prepares reports that are submitted to the program applicant, who then submits the reports to HUD. The environmental compliance and decision-making role of HUD is to review and understand the report so as to evaluate whether there are areas of risk about which HUD must be concerned. Part 50 requires that HUD work in partnership with federal, state and local environmental regulatory authorities to ensure that the property is in compliance with all requirements. HUD may request additional testing or remediation, if it is not satisfied that all requirements have been met. Once HUD staff is satisfied that all requirements have been met, it will "clear" a site for HUD funds. More discussion of HUD staffing comes later in this section.

For two key reasons, the Department faces higher levels of both responsibility and risk when it conducts environmental review under Part 50, as compared to when a state, local or tribal entity conducts a Part 58 review. First, as the Federal entity that is ultimately responsible for ensuring that selected sites meet NEPA requirements and other applicable environmental laws, HUD risks being held liable if it fails to carry out this responsibility. Second, a great many of Part 50 reviews are conducted for properties that expose HUD to financial risk. Particularly important in this regard are the mortgage insurance programs managed by Housing.

As a result, HUD has developed more guidance and direction to its staff for all elements of environmental review, including assessment and remediation of site contamination. In fact, the most-detailed, risk-mitigating guidance can be where HUD is exposed to financial risk: for its Housing programs that provide mortgage insurance.

2.2.2 Managing Site Contamination under Part 50

Standards and processes for the basic steps of screening (or preliminary assessment), assessment, remediation, and monitoring are discussed below. This discussion will be much longer than the equivalent discussion for Part 58, because HUD is responsible directly for these processes and has elaborated more-detailed standards and procedures.

Screening and Preliminary Assessment

There is some variety within HUD regarding implementation of Part 50 requirements. Offices within Housing and PIH have adopted different approaches. In Housing, procedures within the single-family programs differ from those of Multifamily programs. Similarly, there are differences within PIH between the procedures used in Public Housing programs and Indian Housing programs. The offices' approaches are described below.

- *Multifamily Housing.* A Phase I environmental assessment is required to be submitted to HUD with all applications to Multifamily Housing for mortgage insurance. The lender or developer funds the Phase I, except in the rare instances when HUD owns the property.[45] A HUD appraiser reviews the Phase I report by following recommendations in the Multifamily Accelerated Processing (MAP) Guide, which is the primary guidance

[45] Axelrod interview.

document for multifamily mortgage insurance programs operated by the Office of Housing. Appraisers complete the Sample Field Notes Checklist, which is an attachment to HUD Form 4128 (Environmental Assessment and Compliance Findings for Related Laws) that lists Phase I issues.[46] In coordination with environmental regulatory authorities, the appraiser will determine whether a Phase II is necessary, based on the findings of the Phase I.[47] (Because of the importance of the MAP Guide to this study, Section 2.3 will discuss the MAP Guide's approach to managing site contamination in more detail.)

- *Single-family Housing.* Similar to Multifamily Housing, for proposed condo projects Single-Family housing also requires that all applicants complete a Phase I site assessment for all projects that require environmental review. In addition, private appraisers complete and then submit to HUD the "Comprehensive Valuation Package Valuation Conditions" (HUD-92564, or "the VC sheet") or a Builder's Certification form (form 92541), both of which are similar to a Transaction Screen Analysis and can identify potential hazards.[48] If an appraiser identifies contamination as being on the site, HUD refuses to approve the application until the site is clean. It is rare for Single-Family staff, particularly those in Homeownership Centers, to complete a full Phase I analysis.[49] On the rare occasions when Phase Is are necessary, they are usually the context of the development of condominiums, which are, in essence, multifamily housing projects.[50] To process the Phase Is, staff within the Single-Family housing office consult Handbook 4150.1 and follow the same procedure as the multifamily office. They then complete "the long form" -- HUD-4128.[51]

- *Indian Housing.* In general, Part 50 reviews by staff at the Office of Native American Program (ONAP) are handled by Grants Management Specialists, who follow the guidelines set out in PIH Notice 99-37. This notice outlines the responsibilities of tribes that choose not to assume environmental review responsibilities under Part 58. The Grants Management Specialists conduct environmental reviews themselves by completing Form 4128 (see the description for multifamily housing, above). The Form is reviewed by the office administrator[52], as is relevant information provided by consultants or recipients. As a practical matter for this study, ICF did not learn of any occurrences where contamination has been a challenge to ONAP development projects.

- *Public Housing.* The Office of Public Housing Investments provides funds for capital improvements and development through the Capital Fund via formula. The Office also provides large infusions of funds for a select number of Housing Authorities via the HOPE VI program. Within this office, as with other offices in PIH, reviews are conducted under Part 58 if the city, state, or local government has the capacity to act as

[46] Broun interview.
[47] Axelrod interview.
[48] Axelrod and Birdsong interviews.
[49] Maggiano interview.
[50] According to the Santa Ana Homeownership Center, "they come up once every three or four years."
[51] Axelrod interview.
[52] Barth interview.

responsible entity and conduct the review. HUD field staff work with housing authority staff and the local entities to determine who will complete the review. When the state or locality does not perform the environmental review, then HUD field staff conducts the reviews under Part 50.[53] The Office allows engineering and/or institutional controls to be employed, and cleanup costs to be "eligible" costs for reimbursement by HUD. Each new project requires a Phase I assessment. If the Phase I reveals the potential for any site contamination, a Phase II must be done.

Part 50 reviews are conducted for programs within Public Housing when the RE is unable or unwilling to conduct a Part 58 review on behalf of the Public Housing Authority (PHA). In these cases, Public Housing personnel from HUD field offices choose from among the following options: 1) permit the PHA to complete the review, 2) have PIH field staff oversee the review, and 3) request and pay for the Army Corps of Engineers manage it. Whenever a development involves more than 200 lots or dwelling units, an environmental officer (either in Headquarters or a designated Field Environmental Officer) must oversee the completion of form HUD-4128, with its coverage of Phase I issues, and the field Public Housing director must approve them.[54]

Assessment and Remediation

- *Multifamily Housing.* Of all the offices within HUD, Multifamily Housing has the most detailed procedures for assessment and remediation of sites. Phase II environmental site assessments are completed at the cost of the developer or lender when there are contamination issues identified in the Phase I or when field staff believes that issues have not been resolved. According to Housing's Environmental Clearance Officer, a properly prepared Phase I should address the likelihood of contamination and provide recommendations. On rare occasions, appraisers will require recipients and contractors to modify a Phase I or II when the reports are not easy to understand.[55]

  When a Phase II finds evidence of contamination on a site, the site must be remediated to be "…free of hazardous materials, contamination, toxic chemicals and gasses, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property" as per 24 CFR Part 50.3(i)(1). Multifamily Housing requires certification from state and local health authorities as proof that this standard has been met.[56] If contamination cannot be removed completely, the field office rejects the site.[57]

  Estimates from headquarters staff are that approximately 15 sites per year require remediation. Of these, ten require interplay between headquarters and the state. There

[53] Rodins interview.
[54] Ladias interview; Rodins interview.
[55] Axelrod interview.
[56] Broun interview.
[57] Owens interview. Note that the MAP Guide says "remediated." – Page 9-4, Section 9.3.D.1.

are 30-40 situations per year where remediation would be required, but where the developer elects not to continue as a result of not wanting to do a complete remediation.[58]

- *Single-Family Housing.* ICF interviewed staff with the Office of Single Family Asset Management (OSFAM) and a Homeownership Center. OSFAM is only involved with properties that have gone into default, wherein a lender files a claim, forecloses the property, and conveys the loan to OSFAM. On the rare occasions when the foreclosed property is contaminated, OSFAM turns over the loan to a Management and Marketing (known as M&M) contractor and coordinates with a Homeownership Center (HOC) and local government agencies to oversee any necessary Phase Is, Phase IIs, and remediation. Staff from Single-family housing indicated that only a "small handful" of sites have contamination issues.[59]

- *Indian Housing.* ONAP staff does not encounter site contamination. One interviewee said: "the cleanup of contaminated sites has not come up. If it did, we would probably encourage people to go elsewhere rather than locate on a contaminated site."[60] Another added: "other environmental issues, such as flooding, wetlands, and endangered species have more of an impact on rural development than does site contamination."[61]

- *Public Housing.* When a Phase I indicates the potential for there to be contamination, staff requires the completion of a Phase II assessment before program funds will be released.[62] In general, PIH prefers that the review be conducted under Part 58, rather than Part 50. As stated above, Part 58 sets no required procedures for how Phase II assessments and remediation is conducted, other than the broad mandates of NEPA and Part 58. PIH also requires that the developer and all contractors and subcontracts be bonded, to ensure that remediation is satisfactory.[63] When Part 50 is implemented, Public Housing staff has a certain measure of discretion regarding the approach to be used. Some staff members choose to abide by the Part 50 requirements within the Housing MAP Guide. Others are guided by state regulatory authorities.[64]

Cleanup Standards. Under Part 50, all contamination must be removed from sites prior to HUD's involvement "…where a hazard would affect health and safety of occupants or conflict with the intended utilization of the property."[65] All interviewees from both PIH and Housing were clear on Part 50's requirement that contamination must be remediated. Whereas PIH has not specified clear specific standards, Housing and, in particular, Multifamily Housing has elaborated a very strict approach.

2.2.3 Multifamily Housing and the MAP Guide

[58] Axelrod interview.
[59] Maggiano interview.
[60] Boyd interview.
[61] Barth interview.
[62] Ladias interview.
[63] Broun interview.
[64] O'Connell interview.
[65] Section 50.3(i)(1).

The Multifamily Housing mortgage insurance programs operated by the Office of Housing are guided by the policies outlined in the MAP Guide. This guide "establishes national standards for approved Lenders to prepare, process, and submit loan applications for Federal Housing Administration (FHA) multifamily mortgage insurance."[66]

Chapter 9 covers Environmental Review. Section 9.3, *Phase I and Phase II Environment Site Assessment*, provides guidance for how to inspect for and manage contamination on the site of the proposed project. This chapter and these sections are the primary guidance to relevant staff for how to implement the regulation 24 CFR Part 50 for HUD-insured multifamily housing projects.

The MAP Guide states that HUD is "responsible for making an environmental assessment on Form HUD-4128 (See 24 CFR 50.32) and determining that there are no environmental factors that are prohibited by law, Executive Order, or regulation, or which would endanger health or safety, or would put FHA mortgage insurance or the U.S. Government at financial risk or liability."[67] Section 50.32 authorizes HUD to request applicants/lenders to provide pertinent studies and other information. In order to comply with this requirement regarding potential contamination, applicants/lenders who are seeking mortgage insurance must submit a Phase I environmental site assessment for each project, using standards that are similar to ASTM standards. If the Phase I indicates the potential for, or evidence of, contamination, Multifamily Housing requires that the applicant conduct the more-detailed Phase II environmental site assessment in order to determine whether contamination is present. If contamination is then found on-site, remediation is required before HUD will make a firm commitment; however, if the contamination is known, HUD can proceed with initial endorsement. "The remedial work must be done, and the site tested and approved, prior to initial endorsement."[68] Additional requirements are that "HUD will not accept property for firm commitment where a site contamination problem has been capped or paved over" and "A property with testing, flushing, or monitoring wells in operation will not be considered for mortgage insurance."[69]

HUD staff interprets these statements to be prohibitions on providing FHA mortgage insurance for multifamily housing projects when a regulatory agency has determined that "engineering" or "institutional" controls are required at the property in order to mitigate the risk of exposure to contamination.[70]

2.2.4 Guidance and Resources

HUD has provided staff with the following guidance on managing site contamination, through the following documents:

[66] Multifamily Accelerated Processing (MAP) Guide, revised March 15, 2002. It must be noted that most local offices choose to follow the MAP Guide, however HUB/Program Directors can elect to waive any guidelines, usually in writing, in the MAP Guide that are not regulatory requirements.
[67] MAP Guide, page 9-2.
[68] Chapter 9, Section 3, paragraph D.3 of MAP Guidance.
[69] Chapter 9, Section 3, paragraphs E and F of MAP Guidance. Note that closed testing, flushing, or monitoring wells are not a barrier to environmental approval.
[70] Task 1 provides descriptions and discussions of institutional and engineering controls.

- Form 4128 - Environmental Assessment and Compliance Findings for the Related Laws. This form is used in each Part 50 environmental review to identify potential environmental compliance issues (NEPA issues and others, including coastal barriers, floodplains, historic preservation, noise, airports, endangered species, wetlands and contaminated sites.) It is akin to a Transactional Screen Analysis, unless program rules dictate a Phase I is required.
- Multifamily Accelerated Processing (MAP) Guide, Chapter 9 - Environmental Review. Chapter 9 serves as *the* environmental resource for all multifamily housing projects. It is discussed in detail in the next section.
- Handbook 1390.2 - Environmental Assessment Guide for Housing Projects. Originally released in June 1985, this handbook is a comprehensive instruction manual to assist HUD staff in preparing environmental reviews, as required by Part 50. For purposes of Multifamily Housing, the MAP guide has supplemented parts of this handbook.
- HUD 92564 Valuation Condition (VC) Sheet -- Appraisers for Single-Family programs use this sheet to identify and record hazards. It is similar to a Transaction Screen Analysis.
- Notice CPD 96-06 -- Field Environmental Processing for Loan Guarantee Recovery Fund, October 31, 1996. CPD Representatives are assigned by Field Directors to conduct environmental analysis, prepare and submit environmental recommendations, and complete HUD Form 4128. All processed data should be checked for consistency with Part 50. This information should then be forwarded to the Field Environmental Officer (FEO) and Field CPD Director for review. After their review, they pass the approved information on to the Financial Management Director (FMD) and the Office of Block Grant Assistance (OBGA) for documentation of the project's compliance with Part 50.

2.3 The Role of HUD Staff in Reviews Under Parts 50 and 58

HUD's responsibilities as established by Parts 50 and 58 are implemented by personnel within a variety of HUD staff categories, and who bring diverse backgrounds.

2.3.1 Headquarters

HUD environmental policy is established and monitored by Program Environmental Clearance Officers (PECOs), most of whom are based in HUD's Headquarters in Washington. Each of HUD's major development offices -- CPD, Housing, and PIH -- as well as other offices, has one PECO.[71] These PECOs are resources to field staff within their respective Offices, answering questions on a regular basis and coordinating on policy issues with other PECOs and program staff within HUD.

The Departmental Environmental Clearance Officer (DECO) is the Director of CPD's Office of Community Viability, who coordinates HUD policy regarding energy and the environment, and procedures for compliance with NEPA and the related laws. This Office also contains personnel in both the Planning Division and Environmental Review Division who are experts on a broad

[71] More information on Headquarters Environmental Staff can be found at http://www.hud.gov/offices/cpd/energyenviron/environment/resources/clearofficers.cfm

range of topics relevant to NEPA, which include water quality, air quality, toxics, environmental justice, wetlands, floodplains, historic preservation, and more. Neither Housing nor PIH have additional Headquarters staff beyond the Program Environmental Clearance Officers, though PIH has a staff member based in the San Francisco Field Office who serves as Program Environmental Clearance Officer for Native American programs.

2.3.2 Field Environmental Staff

HUD is quite varied in who carries out environmental functions in its field offices. Each major development office has its own approach, even when functions are similar across offices.

Community Planning and Development

In order to implement its responsibilities, CPD has developed a corps of environmental officers in CPD's Office of Community Viability. Policy direction comes from the Headquarters office in Washington, DC, while project-specific work and monitoring are carried out by Field Environmental Officers (FEOs), who are located in HUD Field Offices throughout the country. FEOs tend to be generalists, with backgrounds in planning, housing or law. They are employed either by CPD or directly by the Field office.

In the early 1990s there were more than 60 Field Environmental Officers (FEOs).[72] In 2001 there were fewer than 25 Field Environmental Officers (FEO) serving 80 local offices. In addition, there are a total of 26 Regional Directors, Program Managers, and CPD Representatives who act as environmental contacts for an additional 28 field offices. These latter environmental contacts are involved only with compliance issues related to Part 58, whereas the FEOs both are involved with Part 58 and conduct Part 50 reviews.

FEOs serve as resources to CPD field staff, local partners and, on an as-needed and as-available basis, non-CPD HUD field program field staff. FEOs who are hired directly by the Field Office report to the Director of the Field Office, rather than to the Director of the CPD Office of Community Viability. These "field" FEOs tend to have more responsibilities across HUD programs within their respective regions, whereas CPD staff in Planning and Environmental Review in Headquarters tends to focus more on CPD programs.[73]

In field offices where there is no FEO, CPD field program personnel who need support on environmental matters request help either from HUD headquarters or from an FEO in another office.

Implications of this shortfall of FEOs are quite clear. In nearly every interview with environmental staff, interviewees stated that field offices have too much work, and not enough people to do it.

[72] Broun interview.
[73] Goldfarb interview.

> *This [shortage] has affected our effectiveness. There is a lack of coverage in certain areas, as there is no on-site presence [in many field offices]; so headquarters does not know what is happening. This [shortage also] impedes the ability to train staff and clients on environmental issues. What they do now is very ad hoc, and the local government needs ongoing training in hazards, endangered species, etc. There's a continuing need to do reviews and monitoring.* [74]

In a stark example, the CPD Director of the New Jersey field office, which has no FEO, reported that it has been 15-20 years since the New Jersey office has conducted any monitoring of REs for compliance with Part 58. A headquarters interviewee indicated that this lack of compliance is a larger trend: "Part 50[75] requires that projects of over 200 units must be reviewed by the Environmental Clearance Officer (who may be either Field Environmental officers and Headquarters staff that have been designated). These reviews are not occurring, as there is no one to perform them."[76] Another headquarters interviewee, who preferred not to be named for the following quote, stated that: "HUD is a development agency. Many look at environmental issues as a hindrance to getting business done. The environmental group has been hit harder than any other group."

Housing and Multifamily Housing

Environmental review in Housing is conducted by HUD appraisers, who generally have backgrounds in real estate and cursory understanding of contamination issues. There is no field staff whose titles reflect the purpose of overseeing environmental compliance. Policy and guidance comes from the Housing Environmental Clearance Officer in Washington, who coordinates with the Department Environmental Clearance Officer.

Approximately 100 HUD appraisers are located in field offices (HUBs and Homeownership Centers) throughout the country. Their job is to appraise properties in response to applications from lenders for mortgage insurance. For Multifamily Housing projects, appraisers implement all parts of the MAP Guide, including Chapter 9 on Environmental Review and on completing Part 50 environmental reviews. Appraisers receive some environmental training. When they have questions on environmental issues, they tend to ask for assistance either from the CPD FEO, if the field office happens to have an FEO, or from Housing's Environmental Clearance Officer. Appraisers report to an operations director or a development director. These people, in turn, report to HUB directors.[77]

Final decisions regarding whether to approve an application for mortgage insurance are at the discretion of the Multifamily Housing HUB Director. As the appraisers do not report to the Housing Environmental Clearance Officer, there is no institutional mechanism for the Housing Environmental Clearance Officer to be informed whether environmental review has been conducted consistent with policy.

[74] Broun interview.
[75] Section 50.32.
[76] Broun interview.
[77] Axelrod interview.

Public and Indian Housing

Staffing for environmental review within Public and Indian Housing can be divided between Public Housing programs and Indian Housing programs in ONAP.

Public Housing Field Operations has staff located in 42 Field Offices, who are "on the ground" monitoring programs and providing technical assistance across all of PIH's offices. They do not directly provide funding, as this is a headquarters responsibility. The field staff decides whether an environmental review will be done under Part 50, where the review will be completed by field office engineers, field staff or by the Army Corps of Engineers; or Part 58, where the review will be completed by the responsible entity.

When acting under Part 50,[78] Public Housing field office directors balance various factors in determining whether to use in-house field office engineers or to pay the Army Corps of Engineers to complete the reviews. Under an ongoing contract, Public Housing field offices may contract with the Corps of Engineers to conduct the environmental assessments.[79] In no case, however, may the Corps of Engineers replace HUD as the responsible Federal official when HUD funds are being used. HUD field staff must complete and approve the environmental review forms. Under Part 50, the Public Housing Director signs the completed environmental review as the "HUD approving official".[80] Under Part 58, the chief executive officer of the PHA approves the environmental reviews, and the Director of Public Housing approves the request for release of funds, when one is required.

With respect to Indian Housing, ONAP has assigned the task of being environmental compliance experts to Directors or Specialists in the Grants Management Division in each of ONAP's six regional offices (Anchorage, Chicago, Denver, Oklahoma City, Phoenix/Albuquerque, Seattle). These experts either conduct Part 50 reviews or monitor Tribes' compliance with Part 58 requirements. As mentioned earlier, ONAP staff reports that it is rare for contamination on development sites to be encountered.

Coordination Among Various Parts of HUD

Within HUD, coordination between Housing, CPD, and PIH takes place in four ways:

1) Among the Environmental Clearance Officers in headquarters for each Office, who meet regularly;
2) Among field staff in the same Office and same field office – i.e., an appraiser in the Chicago Field Office regularly coordinates and serves as a resource to others appraisers in the Chicago Field Office;
3) Between field staff and the Office's Environmental Clearance Officer in Headquarters -- i.e., an appraiser in Seattle asks for advice from the Housing Environmental Clearance

[78] "PIH primarily uses Part 58. If the city would not do the review on behalf of the housing authority under Part 58, then PIH would do it under Part 50," Richard Broun.
[79] Thorson interview.
[80] Section 50.11 and Form 4128.

Officer, and an FEO asks for guidance from the CPD Environmental Clearance Officer; and

4) Between Field Environmental Officers and anyone in the same field office (or neighboring field office) who is in need of advice - i.e., a field engineer (PIH cylinder) in the Detroit Field Office will get advice from the FEO (CPD cylinder) in the Detroit Field Office.

Communication is variable in the field offices between HUD offices. The Field Environmental Officers are more likely than others to have frequent communication with other staff that has environmental responsibilities, because part of the jobs of FEOs is to serve as resources to other staff. Some FEOs provide training on environmental review to other field staff.

Other linkages that might be useful are less likely to occur. In many field offices, appraisers in Housing lack even a basic understanding of how PIH Field Engineers approach environmental issues, even though they both may be conducting Part 50 reviews. Coordination is also reported as being almost absent between the Office of Housing's Single-family and Multifamily offices. Many Multifamily appraisers are unaware of the services provided at Homeownership Centers (Single-family). Similar reports come regarding PIH, where staff at Public Housing and Indian Housing rarely shares information, even though both are conducting Part 50 reviews and monitoring Part 58 reviews of public housing entities.

Lack of coordination and information sharing exacerbates the effects of Department's low levels of training (to be discussed in Section 4), slows processing time, appears to be highly inefficient, and leads to employee frustration. Staff from a Homeownership Center wrote:

> HUD-4128 …is what is to be used for new condo projects. The approval of condo projects and the insuring of the individual units rest with the Processing and Underwriting Division of Single Family. This division is very busy and completes [a Part 50 review and completion of HUD-4128] once every four years. We would like to see Multifamily be responsible for completing the Environmental Review for condos. It is our understanding that they have staff that routinely completes these reviews for the Multifamily projects.[81]

This lack of coordination and communication is also noticeable when HUD is supporting such large mixed-financing projects as HOPE VI developments, where funding comes from several programs and for which field staff and housing authorities must determine which environmental rules must be followed.[82]

[81] Santa Ana Homeownership Center.
[82] Axelrod and Goldfarb interviews.

Table A: Site Contamination by HUD Office				
	Housing	**CPD**	**Public Housing**	**Indian Housing**
Regulation	Part 50	Part 58 and Part 58	Parts 50 and 58	
Handbooks/Other Guidance	-MAP Guide -Form 4128 -Handbook 1390.2 -Notice 94-88	-HUD CPD 782 -Choosing an Environmentally Safe Site -Community Planning and Development Monitoring -Notice 79-33 -Notice CPD 96-06	PIH wrote a draft handbook, but it was never finalized and released.[83]	Notice 99-37
Program Environmental Clearance Officers	Eric Axelrod	Richard Broun	Dan O'Connell	Robert Barth
Key Staff in Environmental Review	-Appraisers -FEOs – for projects of greater than 200 dwelling units or lots	-FEOs -Local and state governments	-Engineers, Field Staff, Program staff -Army Corps of Engineers -Local and state governments	-Grants Management Specialists -Tribal governments
Institutional/Engineering Controls	Currently prohibited	Not prohibited	-Part 50: not universally prohibited, though some field offices use Housing's approach. -Part 58: deferred to local governments for Part 58 projects.	

[83] O'Connell interview.

Major Issues	-Institutional and engineering controls -Timing of HUD's commitment – should HUD commit prior to remediation of contamination? -Adequate training for staff -Enforcement of environmental policy by field staff -Policy when there are mixed HUD financing sources	-Small number of FEOs -Adequate training for staff -Monitoring REs	-Encouraging and training local and tribal governments to assume RE status -No general guidance, leading to inconsistent application of policies -Difficulty in finding HUD staff to review and oversee reviews -Monitoring REs

SECTION 3. HUD'S TRANSACTIONS AND THEIR RELATIONSHIP TO ENVIRONMENTAL REVIEW

As has been discussed and presented in Section 2, HUD has many different approaches to environmental review. There are different policies implemented in different ways by different staff across and within HUD offices. Of course, differences do not indicate a problem, if they are justified by different circumstances. HUD should not impose consistency where it is not warranted. Nonetheless, there are inconsistencies that are not useful, and even seem to be harmful to HUD's ability to conduct environmental due diligence for optimal utility.

In the ideal system, HUD's processes for addressing site contamination would be consistent with the real risks generated by each of its particular actions or transactions. HUD's risks can be found from within the reasons that HUD cares about site contamination (see Section 1), which are:

- Compliance with NEPA and other federal laws;
- Financial implications of contamination; and
- Consistency with HUD's mission.

In order to understand better HUD's approach to managing these elements of environmental risk, both in terms of current practice and to help lay the groundwork for recommendations, it is useful to organize thinking along the lines of the financial transactions in which HUD engages and how those transactions interact with the elements of environmental risk. The two key relevant types of HUD programmatic transactions for which environmental due diligence must be conducted are: 1) insuring/guaranteeing loans and providing direct loans, and 2) providing grants. HUD also acquires and disposes of property, and there is environmental risk involved in these transactions. As will be discussed below, however, HUD acquires and disposes of property in the context of defaults on loans. Therefore, HUD must take into account the risks associated with acquisition/disposition when it is approving loans or loan guarantees.

3.1 Transaction 1: HUD Mortgage Insurance and Direct Loans

HUD provides mortgage insurance for many types of development projects that provide housing for low-income families, the elderly, and persons with special needs. The Office of Housing, with its many multifamily and single-family programs, is the administrative location of this activity. The purpose of these programs is to provide protection to private lenders against mortgage loss so that they will be willing to provide loans to developers of these projects. In that these programs support development, HUD's participation is subject to environmental review under NEPA.

When HUD provides mortgage insurance, it takes into account all three elements of environmental concerns, as discussed in Section 2.2. First, in order to comply with NEPA and 24 CFR Part 50, the relevant regulation that implements it, HUD must conduct an environmental

review on all multifamily projects. Environmental review must be completed satisfactorily in order for the mortgage insurance to be approved.[84]

Second, HUD is concerned about potential exposure to financial risk when it provides mortgage insurance; and it is concerned with the risk elements mentioned in Section 1. HUD wishes to a) avoid being held liable for cleanup costs or third-party liability; b) minimize the financial impact that environmental contamination may have on the borrower's ability to repay the loan; and c) protect against the collateral having diminished value due to environmental contamination, so that the property will retain full value if HUD were to acquire the mortgage or property.

Third, HUD's approach to its mission with regard to environmental contamination is quite relevant for these types of transactions. In its desire to provide safe and sanitary housing and communities, HUD must decide whether it should avoid contaminated sites or assist in their remediation. At present, Housing's policy for multifamily housing, as described in the MAP guidance, is to implement HUD's mission by avoiding these sites. Some of HUD's partners are challenging this interpretation of HUD's mission, which is a large part of the context for the present study.

3.1.1 Acquiring Contaminated Properties

HUD faces environmental risk in the context of mortgage insurance when it acquires a mortgage or property. In the multifamily arena, HUD acquires mortgages and properties in two different ways. First, HUD can take over a property's mortgage if there is a default on repayment to the mortgage company whose loan HUD is insuring. In this case, HUD then becomes the new mortgage company. Secondly, HUD can become the owner of a property if it makes a direct loan and the borrower is in default.

There are approximately 30,000 properties in the Multifamily Housing portfolio. At present, approximately 70 properties are in default per year. Of these, very few are on contaminated sites. An interviewee with a 20-year tenure at HUD who works in the Office of Asset Management reported that he had heard of only two instances where a multifamily property defaulted and had "environmental problems." His recollection is that HUD moved the tenants out of the buildings and financed remediation of the sites.[85] He reported that, when there is the possibility of HUD taking title to the mortgage or the property but that there is a serious contamination problem, "9.5 times out of 10 the owner tries to push the property to HUD."[86] He said that "HUD can refuse properties, but they generally don't for political reasons. When HUD doesn't take [a property], the city or state usually will."[87]

Of the 6.5 million single-family loans, 200,000-250,000 require some sort of servicing attention each year. About 60,000 of these properties become HUD inventory, managed by the Office of

[84] Within Housing there are certain single-family housing programs that provide mortgage insurance (including those for condominiums) that are handled under different environmental processing rules (e.g., Direct Endorsement and Builder's Certification). These projects are not subject to a Part 50 environmental review HUD.
[85] Hill interview.
[86] Hill interview.
[87] Hill interview.

Single Family Asset Management (OSFAM). Of these, about forty percent have problems relating to lead-based paint, and "a handful" has contamination problems.[88] On very rare occasions, OSFAM will find itself acquiring highly contaminated sites and then must oversee cleanup, which can involve high costs.

Mortgagee Letter 00-05, dated January 19, 2000 from FHA, outlines the procedures HUD should follow to help borrowers in default on their single-family mortgages and the conditions under which HUD will provide assistance or foreclose. The National Servicing Center and local Homeownership Centers (HOC) service these sites by attempting to work with borrowers before foreclosure becomes necessary. Within these procedures is a requirement that the property be in acceptable condition. If it is not in acceptable condition, the office may have a basis for rejecting ownership. There is no clear guidance regarding whether contamination is one of the conditions that would make a property unacceptable, though the assumption among HUD staff is that it is. Nonetheless, OSFAM usually finds that it must take the property as is, because there is no other option.[89]

For both multifamily and single-family properties that HUD has acquired, HUD attempts to sell the property or mortgage,[90] either to the secondary market (when HUD holds the mortgage) or directly to a new owner (when HUD owns the property outright). HUD prefers, whenever possible, not to oversee the remediation itself. It prefers that the buyer do it. When HUD disposes of a property, the buyer will submit a plan that specifies how the site will be remediated and HUD will then discount the price by the costs of remediation. If the price of the property is less than the cost of cleanup, however, this approach is unlikely to be successful and HUD may find that it must conduct the remediation on its own.

3.2 Transaction 2: HUD Grants and Environmental Contamination

The vast majority of grant resources at HUD come through programs within CPD and PIH, though other parts of HUD also manage some grant programs. HUD grants that support development can be divided into two categories: formula-based entitlement grants and project-based grants.

The recipients of formula-based entitlement grants are state, local and tribal governments. Examples of programs include Community Development Block Grant (CDBG), HOME, Emergency Shelter Grant (ESG), Public Housing Capital Fund, and Indian Housing Block Grant (IHBG).[91] For these programs, the recipient has discretion, within program limits, over the uses of the resources. Recipients have used these funds to carry out development projects by themselves, subsidize development projects carried out by for-profit and non-profit organizations, create loan funds, and many other activities.

[88] Maggiano interview.
[89] Maggiano interview.
[90] Hill interview.
[91] A full listing of formula/entitlement programs can be found at http://mf.hud.gov:63001/dgms/gpi/gpi_type.cfm?programType=Formula%2FEntitlement

Recipients of project-based grants for development projects are governmental and non-profit organizations. Most of these programs are competitive, in that prospective recipients must submit applications for funds and compete for those funds against other applicants. Examples of such development programs include the Economic Development Initiative, Indian Community Development Block Grant (ICDBG), HOPE VI Demolition and Revitalization, Housing Opportunities for People with AIDS (HOPWA), Section 811 Supportive Housing for Persons with Disabilities,[92] and EZ/EC.[93]

For all grants, HUD's fundamental environmental concern is that NEPA requirements are met. In general, grant programs do not involvement repayment unless there has been procedural non-compliance by a recipient. Whereas mortgage insurance is based on borrowers' being able to repay loans, grant programs do not rely on such repayments and have no associated collateral to which HUD might take title. Therefore, HUD is at very little financial risk due to the provision of a grant.[94] Some recipients of formula-based entitlement grants might choose to set up a program that would expose those recipients to financial risk. For example, if a local government used its CDBG funds to set up a revolving loan fund for redevelopment, the potential exists for it to make a redevelopment loan on a contaminated site. If there is default and the site is the collateral, the local government might find itself as owner of the site. It is unlikely, however, that HUD would be exposed to this risk.

On project-based grants, HUD is concerned about the impact that environmental contamination could have on the financial success of the overall project. Those concerns are related to HUD's desire for programmatic success. Most applications require that the applicant submit a financial plan for completing the project for which funding is being requested. If managing environmental contamination is expected to require significant resources on a particular project, the HUD selection committee may be concerned about the overall viability of the project and would wish to see that there is a practical strategy for addressing it. The Brownfields Economic Development Initiative (BEDI) is a unique case in this regard. It is a grant program that *requires* that contamination be an obstacle to the project. As with any other grant program, however, the applicant must provide a plan for how it will overcome the contamination, using a realistic financial plan.

[92] Section 811 is a loan program in which the loan can be forgiven. As such, it functions as part-grant and part-loan program.
[93] A full listing of competitive/discretionary programs can be found at http://mf.hud.gov:63001/dgms/gpi/gpi_type.cfm?programType=Competitive%2Fdiscretionary. Section 811 is not listed as a Competitive/Discretionary grant, but in the category "Other."
[94] Only in rare instances does HUD demand reimbursement of entitlement grants from a grantee. Those instances are associated with non-compliance with applicable regulations. For example, HUD could require a Participating Jurisdiction to repay HOME funds if the local government distributed HOME funds to a developer for acquisition of vacant property, and the developer failed to develop affordable housing on that property within one year of acquiring the property. HUD would require that the cash be repaid, not the property on which HOME funds were invested. As a result, HUD would not be exposed to environmental liability.

SECTION 4. STRENGTHS AND CONCERNS

Based on both the language of the Scope of Work for this study and on the research conducted for Task 2, this section discusses, first, some strengths of HUD's systems for managing site contamination, and then three broad areas of concern for HUD regarding its approach to environmental due diligence.

It is clear that there are both strengths and concerns regarding how HUD manages site contamination. It is natural for a study of this nature to focus on the areas where improvement is needed; and such a focus will be presented in this section. We believe, however, that the strengths of the system should not be lost. They include that the system, in many respects, is protective of public health, the environment and HUD; that there is staff with deep experience and knowledge of processes and requirements; that delegation through Part 58 is a successful, if somewhat problematic, solution to a series of challenges; and that there is quite a bit of coordination between HUD staff and many other entities.

Concerns include questions regarding whether HUD is enforcing its own environmental policies, implementation of Part 58 in PIH, and overall staffing. There is also a key policy of whether the Multifamily Housing should relax its standards with respect to site contamination under Part 50, which will be addressed in Section 5.

4.1 Strengths in HUD's Management of Site Contamination

System protects public health, the environment and HUD.
HUD environmental staff deserves a great deal of credit for developing and implementing systems to manage the threat of toxic contamination that are, for the most part, protective of public health and the environment and that limit HUD's exposure to liability and financial risk. The current policies are not irrational; they are almost always defensible on the grounds of HUD's mission and of financial prudence. Criticisms to the system (or, better said, the multiple *systems*) usually, though not always, derive from and/or relate to: 1) exceedingly limited budget and staff resources, 2) evolving interpretations of HUD's mission, and 3) inconsistencies in approach between HUD's offices.

A large amount of staff experience and knowledge
HUD's environmental clearance officers and many field environmental officers have deep knowledge of NEPA and the regulations (Part 50 and 58) that implement NEPA for HUD programs. Many of these staff people have many years of experience within HUD and understand thoroughly how environmental review interacts with HUD's overall mission and programs. It is also clear that there is a continued commitment among key staff to work together to navigate solutions to conflicts in HUD's dual pursuit of both development and environmental quality/protection.

Part 58 exists
The adoption of Part 58 continues to spread throughout programs where its application is possible -- to state, local and tribal responsible entities. For most CPD and PIH grant programs,

decisions regarding development are made at the local level, in consultation with appropriate regulatory authorities. Through Part 58 delegation, local-level REs also have the responsibility to oversee environmental quality, without HUD's intervening. HUD is removed from almost all environmental regulatory responsibilities, which are more appropriately left to environmental regulatory agencies. HUD has supported the Part 58 REs through guidance, notices and training, all of which enhance the likelihood that REs will fulfill their Part 58 responsibilities. The fact that there are challenges to the full implementation of Part 58, as discussed below, should not obscure the increasing application and success of this approach.

Coordination

A final strength is that HUD environmental staff appears to do a great deal of both formal and informal coordination in order to arrive at decisions. Formal coordination occurs in the context of Parts 50 and 58 reviews, where HUD personnel from all Offices work with state and local agencies to ensure that local, state and federal standards are all met. In some states, where appropriate, Field Offices require that states certify that cleanups have been completed before approvals will be given.[95]

Informal Coordination occurs throughout HUD. Field Offices contact other government agencies when specific issues arise. For example, an appraiser or Field Environmental Officer may coordinate with appropriate agencies when historic buildings are onsite, with EPA when a project is on or near a Superfund site, or with the U.S. Fish and Wildlife Service when habitat is threatened.[96] Furthermore, as will be discussed in the section on staffing, environmental personnel sometimes have broad and unexpected sources for gaining the information that they need to make informed decisions. The low numbers and limited training of staff has required personnel to be innovative in seeking solutions – they speak with each other, with headquarters, state experts, other agencies, and other experts, and some independently seek out classes and reference materials.

There is no question that there are also problems with respect to coordination and consistency of policy implementation. It appears that many of those problems are related to the hard separation that exists between program offices and the related inconsistent approach to staffing, which will be discussed later in this section. Informal communication overcomes some of those obstacles.

4.2 Concern: Enforcement of HUD Policies

HUD has core problems in its mechanisms for ensuring that environmental review is conducted according to Headquarters-directed policy. These problems exist both in Part 50 reviews for Housing projects and in monitoring Responsible Entities under Part 58.

4.2.1 Part 50 Review in Housing

The Office of Housing has one Program Environmental Clearance Officer (PECO) in Headquarters and no field staff that report to him. Part 50 reviews are conducted by appraisers,

[95] Owens and Axelrod interviews
[96] Sebastian and Lewis interviews.

who work for Multifamily Housing and report to the field Multifamily HUB Director. The HUB Directors have the authority to approve, or not to approve, mortgage insurance. Under this structure, there is no institutional mechanism in place for the PECO to ensure that HUD program staff is following Housing's environmental policies, as embodied in the MAP Guide.

For small projects with no extraordinary circumstances, program staff is not required to confer with any environmental officer before making a decision. For projects of more than 200 units, Part 50 requires that a PECO, who can be either Headquarters staff or a designated Field Environmental Officer, review the environmental information.

Interviews indicated that HUB directors are varying in their faithfulness to the MAP directives on site contamination. It appears that some HUB directors are issuing waivers that to avoiding the MAP approach in order to achieve program goals. Their ability to do so comes from the fact that, under the program rules, lenders have the flexibility to apply for mortgage insurance through either the newer MAP approach or the older, and less systematic, TAP approach. Under TAP, there was no *explicit* prohibition on the use of institutional and engineering controls, even though it was widely understood to be the policy.[97] Some HUB directors who believe that the MAP guide is unnecessarily strict have encouraged lenders to follow TAP for specific projects. Strictly speaking, following TAP is permitted.

While our interviews did not indicate any widespread avoidance of the policy, they did indicate specific instances. At a minimum, there is inconsistent application of policies for site contamination, which may be evidence of a broader concern with respect to environmental review about which there is no systematic knowledge. The Housing's ECO has no mechanism to enforce any of the environmental provisions, when field staff are not complying.

4.2.2 Monitoring Compliance with Part 58

As discussed in Section 2, HUD has the responsibility to ensure that Part 58 Responsible Entities (REs) are complying with all requirements through monitoring. There are two areas where HUD is responsible for oversight.

- HUD is authorized to review that procedures have been followed on a project-specific level, to determine whether to approve a recipient's request for release of funds.

- HUD expressed an intention, under Part 58, to monitor REs every three years, in order to ensure that they are conducting their Part 58 reviews correctly.

In neither case is HUD thoroughly fulfilling its responsibilities on a consistent basis. In the first case, HUD interviewees have said that, due to lack of time, only very cursory review is ever done of the environmental issues connected to the request for release of funds. Nonetheless, as long as the RE has certified that it has complied with all of its requirements as the RE, HUD may have complied with its NEPA procedural requirements.[98]

[97] Goldfarb interview.
[98] This statement does not constitute a legal opinion.

In the second case, it is very clear from many interviews that HUD field staff personnel are not monitoring REs every three years. HUD's Departmental NEPA lead said that the Council for Environmental Quality (CEQ) stipulated that, as a trade-off for the authority to delegate Federal environmental review responsibilities, HUD must monitor for compliance, conduct training, and impose sanctions where necessary. Part 58 indicates HUD's intention to monitor each RE once every three years. These reviews are not occurring on anything near a routine basis, as there is insufficient staff to perform them.[99] Many FEOs focus on training REs on how to conduct environmental reviews, rather than monitoring, because 1) there are insufficient staff resources to do both functions; and 2) through training, the FEO can communicate with and assist many REs at the same time, whereas monitoring requires that the FEO focus on only one RE at a time.[100]

Sanctions are also very rarely instituted, as they would result from negative findings from monitoring. As an example of this neglect, mentioned in Section 2, the CPD Director from New Jersey stated that her field office has not monitored for compliance in 15-20 years.

It is unclear how this lack of focus represents problem for HUD, for any of its three areas of environmental concern. With respect to NEPA, HUD is at risk for being found to be non-compliant with its monitoring requirements. Although Part 58 declares only HUD's *intention* to monitor every three years, and makes no commitment to do so, it is clear that HUD has not budgeted the resources that would be necessary in order to be compliant and that it does not make monitoring one of its priorities. It is unclear what the implications would be, of being found not to be compliant. In the worst-case scenario, CEQ could remove HUD's right to delegate authority through Part 58 – with the implication that HUD would need to conduct Part 50 reviews on all applicable HUD-funded projects. Lesser sanctions or directives from CEQ are also possible, though we have no information on what those might be. It is also unclear whether HUD is at risk for citizen lawsuits as a result of its non-compliance.

Task 6 will discuss potential options for whether or how HUD might address this neglect.

4.3 Concern: Implementation of Part 58 Delegation within PIH

Another concern regarding implementation of Part 58, though it is of a different nature, sits with programs in the Office of Public and Indian Housing (PIH). Most PIH projects for which NEPA review must be conducted fall under Part 58 authority. As discussed in Section 2, there is inconsistent assumption of responsibilities by REs, in both Public Housing and ONAP. The result is that HUD finds itself conducting and processing many more Part 50 reviews for PIH than was the intention when PIH programs were authorized for Part 58. As the primary focus of this study is not on this topic, we have not explored the dynamics of the problem to the extent that would be needed in order for a resolution to be found. Nonetheless, we are raising this topic because PIH's challenge with respect to implementing Part 58 interacts with many of the study's key themes (staffing, in particular) and is therefore important to mention.

[99] Broun interview.
[100] Goldfarb interview.

For Public Housing programs, a key challenge is that PHAs, most of which are not units of local government, are recipients of PIH resources but are not eligible to be REs under Part 58. The appropriate local or state government must play that role. In what appears to be a not-insignificant number of cases, institutional problems and other conflicts have impeded cooperation between the local governments and the PHAs on environmental reviews.

HUD has very few tools to ensure that local governments conduct reviews on behalf of PHAs. In CPD, HUD has the authority not to release funds if the local government has not conducted a Part 58 review. In contrast, though HUD has similar authority for Public Housing, HUD does not tend to hold PHAs responsible if the local government does not conduct the review. In these cases, HUD feels compelled to do a Part 50 review. In Task 6, based on our limited research on this topic, we will discuss potential options to address this structural mismatch.

For ONAP programs, the key challenge to implementing Part 58 consistently throughout Indian Country is building capacity to conduct environmental reviews. Many tribes have very little, if any, expertise in the topic, requiring that HUD conduct Part 50 reviews in many instances in which Part 58 is authorized. Those tribes that do have such expertise tend to have it in their local Tribally Designated Housing Entities (TDHEs), which function in a similar manner at reservations as PHAs do in non-reservation cities. As with PHAs, TDHEs are not eligible to be REs. Tribes frequently contract with the TDHEs for them to conduct the environmental review, for projects that are driven by the TDHE or the Tribe.[101] As stated earlier, though, toxic contamination on sites planned for HUD-supported projects is a rarely-if-ever encountered problem.

4.4 Concern: HUD's Staffing of Environmental Review

In order to ensure that the needs for environmental due diligence are met successfully, HUD needs to ensure that its staff can: 1) meet the requirements of NEPA and other applicable federal laws; 2) manage HUD's exposure to financial risk that derives from environmental contamination; and 3) be consistent with HUD's mission. The first two of these needs require technical expertise; while the third requires that staff receive clear guidance on HUD's mission, including where tradeoffs should be made. This discussion of staffing will focus on the first two requirements – HUD's ability to manage environmental regulatory risk and financial risk.

4.4.1 Insufficient Numbers of Staff

A consistent theme throughout almost all interviews was that there simply are not enough environmental officers to cover the work that is required. This lack is the primary reason that HUD has not fulfilled its requirements to monitor and sanction under Part 58. This problem is felt most acutely in CPD, where FEOs are the primary environmental personnel; but it is also felt in PIH and Housing, where FEOs used to provide far more support than they currently do. PIH has found the need to contract with the Army Corps of Engineers to fill that gap, but has not been satisfied with the results.

[101] Cathy Dymkoski, a former HUD FEO who is part of ICF's team, is conducting HUD-funded training to tribes on how to conduct environmental review. Information from this paragraph comes, for the most part, from her experience.

Until this year, fewer than 20 FEOs were in the field attempting to cover the responsibilities that, in the past, required more than 60 such officers. Many field offices have no field environmental officer. Though some former Community Builders have been transferred to being FEOs this year, there is still no prospect that HUD can meet all of its obligations in the near future.

With the small numbers of Field Environmental Officers, many field offices no longer have environmental experts "down the hall." Housing's PECO said: "Having more FEOs would help out people in headquarters, who must answer an increasing number of questions. The low number of staff leads to an increased amount of work for headquarters and for Housing program staff in the field, when environmental issues arise."[102] The CPD Director in New Jersey said "I would like to have a full-time FEO to join our staff so that I would no longer have to handle environmental issues. I don't have the necessary training or background for this position, and I can only answer general questions about Part 58."[103] When the question is beyond her expertise, she directs environmental questions to the FEO in the Pennsylvania State Office, [104] who may know HUD procedures but may not know local New Jersey laws, regulations and circumstances.

An important consequence of decreased staffing is that it takes longer to process and review applications. One interviewee explained that when the field environmental officer in his office retired, "it became more difficult to make decisions. We weren't used to talking to headquarters regularly, and it became more difficult to make decisions. 'Historic knowledge' was lost. The processing time slowed down, and we became more conservative as a result. Some issues were just dropped because the staff doesn't have the in-house knowledge."[105] A field office interviewee added that some items that should receive more attention are simply passed over for lack of ability to get constructive answers within the programmatic time frames that must be met.[106]

The Task 6 document will discuss staffing options assuming the two different scenarios of 1) having additional resources, and 2) *not* having additional resources.

4.4.2 Insufficient and ad-hoc Training

Field Environmental Officers and appraisers expressed a need for more environmental training. There is no formal training regimen for HUD staff and limited training for non-HUD REs, especially when there is no local FEO. HUD environmental staff learn how to do their jobs through ad hoc on-the-job training, by apprenticing with more experienced colleagues and by asking questions to headquarters and regional staff.[107] "When I was an environmental officer, there was no training. I was just thrown in. Someone handed me the regulations and handbook."[108]

[102] Axelrod interview.
[103] Naymola interview.
[104] Naymola interview.
[105] Lewis interview.
[106] Owens interview.
[107] Cathy Dymkoski
[108] Goulka interview.

According to Housing's Environmental Clearance Officer, "some appraisers have better training than others; but many appraisers do not have adequate training. I receive a lot of basic questions on Phase Is, Phase IIs and remediation plans."[109] A field office interviewee said that he independently pursued more guidance on how to review Phase I and IIs by purchasing guidelines written by the Environmental Assessment Association.[110]

In some field offices, Field Environmental Officers offer regular trainings to all who are interested, which include other field staff, fund recipients, and staff from local governments.[111] As the number of field environmental officers has decreased so, too, has the frequency of these trainings. A field office interviewee explained:

> *My office used to have an Environmental Officer, who has since retired. The Environmental Officer used to conduct training sessions for staff and applicants on conducting environmental reviews, so the staff is familiar with most issues. From these trainings we have some expertise in-house.*[112]

When a regional office has no FEO, or does not have one as diligent as did this office, the in-house expertise is far less.

4.4.3 Inconsistent Approaches to Staffing

The current "system" is, in reality, at least three systems. CPD, PIH and Housing have entirely different staffing approaches to conducting environmental review, even when duties are similar. As a result, it is difficult to enforce consistent implementation of policies where it is desired. As a reminder, staff for environmental review is:

- Field Environmental Officers (FEOs) in CPD
- Field Environmental Officers (FEOs) in Field Offices, responsible to supporting all HUD regional functions
- Engineers and Army Corps in Public Housing
- Grants Management Specialists in ONAP
- Appraisers in Housing

Again, as a reminder, there are as of this writing a total of 18 FEOs.

Important distinctions exist among the orientations of these various personnel assigned to conduct environmental review, with a particularly important and interesting distinction existing between FEOs and appraisers.

FEOs, whether working for CPD or Field Office Directors, are the one category of field staff that is hired for purely environmental matters. The group of FEOs was built in response to the need to implement NEPA, and they are the staff considered to have the most environmental expertise

[109] Axelrod interview.
[110] Lewis interview.
[111] Barth, Goldfarb, Lewis, and Hinsberger interviews.
[112] Lewis interview.

within HUD. They receive the most training and, when possible, serve as resources for all of HUD programs. Nonetheless, in general, their backgrounds in site contamination are quite limited. These personnel bring various types of education and experience to their work – relatively few have any formal training in environmental sciences or risk management.

Appraisers, or its similar function, have existed since the inception of FHA mortgage insurance more than 60 years ago. Their core function has been to analyze applications for mortgage insurance for their financial soundness, with a special charge to protect HUD and the financial health of FHA. Environmental considerations were not part of the original responsibilities of those who appraised these applications, and they now represent only one category of many potential risks that could have an impact on the financial soundness of an application. Within the category of environmental considerations, site contamination represents only one element, albeit one that poses a greater financial risk than most other environmental categories. It is rare for appraisers to have received anything more than cursory training on the management of site contamination.

Nonetheless, as a general rule, these less-trained appraisers conduct more Part 50 NEPA environmental reviews than do FEOs, even though Part 50 reviews require the most-intensive environmental knowledge.

Appraisers appear to do the best that they can, basing decisions from the amount of collaboration found in many field offices. In the field offices, there are several supervisory levels that are in place to ensure that staff follows correct protocols. In Housing, appraisers report to the MAP supervisors, whose jobs are to ensure that the MAP protocol is followed. Whether these supervisors have training on site contamination is unclear.

In general, on environmental issues, interviews indicate that many field offices have a collaborative atmosphere in which Housing staff asks each other for recommendations and suggestions. When support is needed on an individual project, it is frequent for CPD- or Field-hired FEOs to be consulted, if an FEO exists in the office. If this consultation does not resolve the problem, headquarters is consulted. As mentioned in the previous section on HUD's enforcement of policies, however, we have heard evidence that some field offices will avoid consulting with headquarters for advice, because they expect not to want to follow the guidance that would given.

4.4.4 Key Principles for Staffing

Task 6 will include recommendations for how staffing might be structured. In this document, we discuss some of the principles for how staffing might be structured.

- ***There should be a sufficient number of personnel to manage HUD's environmental requirements***. Those environmental requirements are different for different parts of HUD, but they may include:
    - Ensuring compliance with NEPA, which includes conducting and monitoring environmental review.
    - Managing financial risk.

  - Ensuring the fulfillment of HUD's mission.

- ***HUD staff should be trained to manage the tasks that they must manage.*** Depending on the specific responsibilities of staff with environmental responsibilities, training must include helping personnel to understand:
  - The dynamics of toxic contamination and how risk is managed from a technical perspective.
  - How environmental contamination links to financial risk.
  - How these risk factors interact with HUD's mission and its program goals.

- ***Whenever warranted and possible, staffing should be consistent so as to ensure consistent implementation of policy.*** Whenever tasks and functions are similar, HUD would be better able to ensure consistent implementation of policy and responsibilities by staffing those tasks and functions with similar or, even the same, staff.

- ***Different requirements and functions should be recognized and staffed appropriately.*** In Housing, financial expertise is needed, and it should be connected to environmental expertise. Whether to make the Housing staff the same as the staff in other parts of HUD is a question that will be explored in more depth in Task 6.

- ***Barriers between HUD program offices in the field should be eliminated, wherever possible.*** It appears that some field offices encourage collaboration across program offices, whereas there is less collaboration in others. It is expected that there will be a shortage of environmental technical expertise in most field offices in the short run, enhancing the importance of drawing on whatever expertise does exist, in whatever administrative location it lies.

SECTION 5. MULTIFAMILY HOUSING'S POLICY QUESTION

As has been discussed in Section 2, Housing will only approve FHA mortgage insurance for Multifamily Housing projects if the property is free of any potentially harmful toxic contamination. HUD Housing staff interprets this policy to mean that, if contamination is found to exist, remediation must be conducted such that no institutional controls, engineering barriers, nor active monitoring wells are needed in order for the site to be safe for residential use. Housing insists on this approach even when a state or local regulatory authority has approved these approaches to site remediation.

CPD and PIH have no such requirement, whether reviews are being conducted under Part 58 or Part 50. The CPD Environmental Clearance Officer justifies CPD's willingness to accept institutional and engineering controls on the basis that HUD does not acquire properties as a result of CPD's activities. Specifically, CPD activities do not expose HUD to financial risk related to owning contaminated property.

Housing's justification for its prohibition does not rely solely on financial risk, though that risk is certainly a key element. This section presents the arguments that HUD personnel have presented on each side of whether Multifamily Housing should continue to prohibit institutional and engineering controls.

It is important to mention that this conversation about Housing's environmental policies does not reflect a failure of implementation or, necessarily, any structural problem, as do some of the issues raised in Section 4. The conversation reflects, at its core, a question of how to balance HUD's evolving mission and its obligations.

5.1 The Arguments For Retaining the Current Approach

Arguments for retaining the policy prohibiting the use of institutional controls, engineering barriers and active monitoring wells include the following:

- *The prohibition is consistent with HUD's mission by being highly protective of public health*. By avoiding contaminated sites, Housing ensures that it is complying with HUD's basic mission to provide "safe, decent and sanitary" housing to low-income people. It does so by minimizing any likelihood that there will be adverse health impacts from environmental contamination on any multifamily property with an FHA-insured loan.

- *The prohibition is highly protective of HUD's financial resources*. There are three schools of thought. First, when HUD provides mortgage insurance, it is exposing itself to the potential that it will take title to the property, thereby placing itself in a position of liability with respect to any contamination left on the site. By its current policy, HUD minimizes this risk. Second, HUD is concerned that the life-cost of the controls which budget for regular monitoring activities may exceed the costs of complete remediation. Third, HUD argues that institutional controls make less financial sense for small "mom

and pop" properties that change hands with some frequency and therefore cannot guarantee consistent monitoring practices.

- *HUD-subsidized housing is housing of last resort.* Certain HUD personnel argue that residents of HUD-subsidized multifamily housing have very few, if any, housing options. They say that it would be unfair of HUD to, in essence, force these residents to live in environmental circumstances that higher-income families may not choose. They argue that HUD has the duty to be even more protective of environmental quality than would a non-publicly-subsidized site, where the residents could choose to live elsewhere.
- *Engineering and institutional controls are relatively new and unproven approaches*. Some HUD personnel do not have confidence that, over time, these controls will remain intact. Even if the approach at a site is protective in the short run, ensuring it will remain intact in the long run requires ongoing monitoring. At present, HUD staff is neither sufficiently numerous nor trained to take on these responsibilities. "Programs such as Section 202/811 don't have the capacity to handle this monitoring because field office staffs are small and inexperienced with contamination issues."[113] The MAP Guide is explicit in its lack of confidence in the long-term integrity of these controls.

- *Plenty of alternatives to contaminated sites exist.* Some HUD personnel argue that there is no need to build low-income housing on sites where contamination is left in place because many clean sites exist, even in the cities with the longest and most intensive histories of industrial activity. Eliminating contaminated sites from HUD-subsidized development will leave plenty of options for safe residential development.

- *HUD environmental staff does not have training to assess risk*. In order for Multifamily Housing to expose HUD to environmental and financial risk from site contamination, staff would need training to assess risk. The appraisers in charge of environmental review have no such training, and it is also rare for FEOs to have much experience in the matter. In the absence of this technical training, Housing must remain conservative in its approach by not permitting risk-based approaches to remediation.

5.2 Arguments for Why Housing Should Change its Policy

- *Requiring this strict approach to remediation makes developing certain sites too expensive, increasing the obstacles to providing affordable housing.* FHA's role is to reduce development costs by encouraging lenders to invest in the development of housing for low-income families. The policy of requiring complete removal of contamination serves to *increase* costs to developers for that site. This increase is sufficient to cause some projects not to take place.

- *HUD needs to be realistic about the nature of industrial cities: these cities have a small number of appropriate developable urban properties, and an even smaller number that do not have such environmental concerns.* One HUD headquarters staff person summarized the problem as follows: in big cities "there's going to be contamination

[113] Axelrod interview.

everywhere; so it is not realistic to expect us to clean up completely."[114] One program manager said HUD has a lot of public housing in this area and there's a lot of contamination here, too. He asked: "where are people going to live if HUD does not allow capping?"[115]

- *The combination of strict environmental policies and limited numbers of developable properties restricts HUD's ability to bring about urban redevelopment.* Since contaminated sites are more prevalent in infill locations, making their redevelopment more difficult makes urban redevelopment more difficult.

- *If "caps and wells" are acceptable to environmental regulators, why should HUD reject their use?* Federal and State regulators have more environmental expertise than do HUD environmental officers or appraisers. HUD should accept these approaches to remediation if these regulators accept them. Even private lenders rely on them.

- *The approach is inconsistent with the approach of HUD's other programs and Offices.* As mentioned above, CPD and PIH do not have this strict prohibition, either in its Part 50 or 58 reviews. Particular problems emerge on complex HOPE VI projects, where multiple sources of HUD funds are used. In these cases, a Part 58 review for use of Public Housing HOPE VI funds, conducted by the local or state authority, may determine that a particular site would be appropriate for institutional or engineering controls. If part of the redevelopment included the use of Multifamily Housing mortgage insurance, the Part 58 review would not be sufficient for Housing.

5.3 Framework for Making a Policy Decision

Recommendations on how to come to a policy resolution will come in the report for Task 6. In this section, we attempt to organize the various arguments into potentially answerable questions, in order to establish a framework for making a policy decision. In our view, the different points of view are founded in questions regarding facts, science, HUD's technical capacity, and HUD's mission and obligations. These questions will be posed, refined and discussed in this section.

- ***A Question of Fact – Are there Available Clean Sites?***

There is a clear difference in perception among HUD staff regarding whether, in cities, available clean sites exist that could be redeveloped for affordable housing. Some believe that in industrial cities, especially those that have had great fires (e.g., Chicago and Baltimore), there simply is no clean soil in infill locations. Others disagree, saying that plenty of sites exist. Those who believe that plenty of clean sites exist are far more likely to be willing to eliminate a particular site due to contamination than those who believe that very few clean sites exist. Those who think that very few good sites exist may think that one unintended effect of Multifamily Housing's policy is to make it much harder to redevelop the inner parts of cities. Assuming that advocates on each side share the same goal of urban redevelopment, one's point of view on this

[114] Stevenson interview.
[115] Lewis interview.

question of fact can inform one's views whether HUD should insist on complete removal of contamination.

- ***A Question of Science – Will ECs and ICs Last?***

There is disagreement within HUD regarding whether engineering and institutional controls (ICs and ECs) are trustworthy in the long run. Advocates for change argue that HUD should not challenge the opinions of state and federal environmental regulators, who have more training on these matters and whose jobs are to protect public health and the environment. Advocates for keeping the current policy argue that the case is not yet settled and point to differing approaches by state regulators regarding residential sites.[116] Is there a way to answer this question that will help to resolve the disagreement?

- ***A Question of Technical Capacity – Can HUD Analyze Risk?***

Assessing plans for whether an institutional control and/or an engineering barrier are sufficient is a highly technical task that requires an understanding of toxicological risks to human health and remediation techniques. Furthermore, due to the nature of HUD's transactions, HUD must be able to tie these environmental risks to financial risks, for both individual sites and for HUD's entire portfolio of properties. Does HUD have access to the required technical expertise to manage these risk analyses?

- ***A Question of HUD's Mission and Obligation – Development versus Risk***

A natural and predictable tension exists between those who have program responsibilities at HUD and those who have responsibilities to manage HUD's exposure to environmental and financial risk. All parties agree that HUD's mission involves providing affordable housing and community development, and that HUD has the obligation and mission to do so in a manner that is safe and sanitary as well as financially prudent. One of the key challenges of this study is to evaluate the tradeoffs involved in these three elements.

5.3.1 Program Goals versus Health Protectiveness

In the ideal, environmental remediation on a development property could be: 1) completely protective of human health and the environment; 2) conducted rapidly, so as to not cause delays in the project; and 3) conducted at a minimal cost. At present, based on current remediation technologies, there are tradeoffs among these factors. It is frequently the case that the more protective the remedy that is chosen, the more likely that the remediation cost will be high and that the remediation will take a long time.[117] Under this framework, lowering the level of protectiveness offers the possibility of remediation being cheaper and faster, which can facilitate

[116] This topic is discussed in detail in the Task 1 report.

[117] An important qualification to the previous generalization is that less-intensive cleanups that are cheaper in the short run may, in the long run, impose more costs on the owner of the property. If contamination is left in place with an institutional and/or engineering control, and the control is not sufficiently protective over time, the costs resulting from additional cleanup and liability can be higher than had a more-intensive remediation been conducted in the first place. For these reasons, some private investors elect to remediate to higher standards, even when regulators do not require that they do so.

success in development projects. At HUD, this lowering of costs can mean greater success in meeting program goals for providing affordable housing and other projects of community development.

At present, the MAP guidance reflects unwillingness to trade off any health protectiveness, from an environmental perspective to achieve program goals. By policy, Multifamily Housing is willing for projects not to be developed in service of these health and financial obligations. Some program staff believes that the current MAP policy is too stringent, and is unnecessarily sacrificing HUD's core development mission. As discussed in Section 4, some staff members have even admitted to avoiding the MAP guidelines by encouraging lenders and HUD staff to go through the less-systematic TAP process,[118] which does not explicitly prohibit the use of caps and wells.[119] By doing so, developers were able to use institutional and engineering controls, thereby lowering their development costs. Otherwise, remediation costs would have been so high that the project could not have been profitable and would not have moved forward. It was, furthermore, argued that this approach was protective of human health because the state regulatory authority had approved the remediation plan. Nonetheless, the MAP Guide is very clear in prohibiting this approach.

Permitting the use of institutional and engineering controls, in order to bring about lower development costs, would be endorsing some tradeoff of this sort. Advocates for making this tradeoff have argued that, as long as the state or federal regulatory authorities have supported the approach at a site, it would be *sufficiently* protective, even if not as protective as complete cleanups. Furthermore, other parts of HUD do not prohibit the use of such controls, if regulatory authorities support their use.

Should HUD permit any tradeoffs that might increase health risk, in order for HUD to be better able to achieve its development mission? This question will be addressed in Task 6, as a crucial element in the study.

5.3.2 Program Goals versus Financial Risk

Some private investors are willing to invest in properties on which there are institutional and engineering controls, whereas the Multifamily Housing is not willing to do so. To what level of financial risk should HUD be willing to expose itself? FHA's role as an insurer of mortgages is to bear risk that private investors are not willing to bear, in order to induce their investment in affordable housing. Is environmental risk a category of risk that FHA should also bear, from a financial perspective, or one that it should avoid?

Risk assessment applies not only to individual sites, but also to HUD's portfolio of holdings. At present, there is no indication that HUD has conducted an analysis of its portfolio from the perspective of environmental risk. HUD *should* be willing to manage a certain level of risk, which implies that it *should* be willing to accept a certain amount of financial loss from that risk. The appropriate approach is to balance that risk against program goals.

[118] *Environmental Assessment Guide for Housing Projects* 1390.2, dated June 1985
[119] Hinsberger interview.

What level of financial risk that results from environmental contamination should HUD be willing to bear in order to achieve program goals?

5.4 A Related Concern - Timing of HUD Approval

Multifamily Housing requires that sites be completely free of hazardous materials before it will approve applications for mortgage insurance. As a result, cleanup must occur *before* the financial package for the development is completed. Lenders tend to wait until FHA has approved the application before they will commit to the loan. One consequence of this policy is that developers are not able to include the costs of cleanup in their overall financing package for their development projects. They are forced to pay for remediation from alternative sources, before the development financing is in place, thereby greatly increasing their risk. HUD personnel has reported that borrowers have encouraged HUD, at a minimum, to allow the costs of Phase I and Phase II analyses to become eligible costs; and, further, that HUD be willing to make a firm commitment to mortgage insurance earlier in the process.[120]

The fundamental tradeoff in this disagreement is whether HUD's view of its program mission is such that it believes that it should take on this environmental risk in order to facilitate development. If HUD were to make a commitment before remediation is completed, HUD would risk being less sure of the overall costs of the project and be more likely to expose itself to financial risk.

Is there an approach that would permit HUD to facilitate development while still being financially prudent?

[120] Stevenson and Axelrod interviews.

SECTION 6. CONCLUSION

While HUD's approach to environmental management and review has many areas of strength, there are deep problems in implementation that restrict HUD from fulfilling all of its baseline responsibilities. Staffing shortages and insufficient training of environmental staff render HUD unable to monitor Part 58 responsible entities, ensure that HUD policy is being implemented in the field, and process applications quickly enough. These deficits also prevent HUD from assisting local governments and tribes in being better able to accept their Part 58 responsibilities under PIH, though other structural problems also prevent this full success.

This lack of investment in staff resources is also a key element in preventing HUD from engaging in higher-order analysis of environmental risk, which might facilitate HUD's participating in redevelopment projects that it currently avoids. The more that technically trained environmental staff can serve as development facilitators, while being protective of HUD's finances and public health, the more strategic development that HUD will be able to support in pursuit of its mission and program goals. Investment in staffing is a central element of the discussion in Task 6, especially in helping to resolve Multifamily Housing's policy question regarding its prohibiting the use of institutional and engineering controls.

Task 6 also discusses key elements of this policy issue, which include questions of fact, science, and mission. They include: How limited is the number of sites available for development in infill locations? Can institutional and engineering controls be trusted? How can HUD's development mission be balanced with environmental and financial obligations?

SECTION 1. INTRODUCTION TO TASK 3

1.1 Background

The objective of Task 3 is to describe and assess the site contamination policies and procedures at development agencies, so as to facilitate useful comparisons with the environmental policies and procedures of HUD. The scope of this task does not include an attempt to assess whether, for each individual agency, environmental policies are appropriate for that agency. Instead, the intent has been to provide information and insight regarding the approach that these agencies take in terms of site contamination. HUD approaches will be compared with the Task 3 agencies in Task 4.

1.1.1 Selection of Development Agencies

To select the development agencies for inclusion in Task 3, ICF first worked with HUD staff to identify both the *substantive areas* and *relevant program activities* within HUD for which it is important to find comparisons of environmental policy.

With respect to the substantive area, an agency, whether in the public or private sector, must be involved in:

- The provision of *affordable housing*, or
- Promoting *economic/community development*.

Within these substantive areas, each agency must engage in at least one of the following relevant program activities that are related to real estate where there is a risk of environmental contamination:

- Provides grants for development to states, cities and tribes
- Insures/guarantees or provides direct loans
- Acquires properties
- Sells properties (or disposes of them in some manner)

ICF conducted research to determine which organizations met these characteristics and, in consultation with HUD, narrowed the list to eight organizations for study. Five of these "development agencies" are federal agencies or, to be more precise, specific offices or programs of federal agencies. Other development agencies studied include a government-sponsored private company, a state program and a private financial-services company. The organizations are:

- Department of Defense (DoD) - Base Realignment and Closure Program (BRAC)
- Department of Commerce (DOC) - Economic Development Administration (EDA)
- General Services Administration (GSA) - Public Buildings Service (PBS)
- Department of Veterans Affairs (VA) – Office of Home Loan Guaranty
- Department of Agriculture (USDA) - Rural Housing Service (RHS)

- Freddie Mac
- California State Housing Finance Agency (CHFA)
- PNC Financial Services (PNC)

The following chart categorizes the selected development agencies into the substantive areas.

Table A – Criteria for Selecting Development Agencies

	Types of Transactions			
	Grants	**Insures / Guarantees or Provides Direct Loans**	**Acquires Properties**	**Sells / Disposes of Properties**
Affordable Housing	HUD RHS	HUD FHA RHS VA CHFA PNC Freddie Mac (indirectly)	HUD FHA RHS VA GSA EDA CHFA PNC Freddie Mac	HUD FHA BRAC RHS VA GSA EDA CHFA PNC Freddie Mac
Economic/Community Development	HUD EDA BRAC	Not relevant to HUD		

The U.S. Environmental Protection Agency (EPA) is also included in this Task 3 report, even though EPA is not a development agency. HUD requested that EPA be covered in this section because of its crucial role in creating environmental standards, enforcing environmental processes, and serving as a resource to organizations seeking guidance on environmental issues at the federal level.

For these nine organizations ICF reviewed regulations, handbooks, procedures, diagrams, Web sites and worksheets; and conducted a total of 17 phone interviews. From these resources, ICF has developed descriptions of the development agencies' policies, procedures and practices, and identified common themes as well as differences among them.

1.2 Study Methodology and Organization of this Report

This report has six sections. Section 2 describes the organizations that were researched and interviewed. Section 3 compares and contrasts the agencies' approaches, and identifies common themes. Section 4 is dedicated entirely to the Environmental Protection Agency, which regulates HUD's site contamination practices. Finally, Section 5 provides a summary of the major findings and a brief discussion of the implications for the future tasks in this study.

Interview participants are listed in Appendix A and Appendix B provides a list of the questions that were posed in the telephone interviews. Appendix C provides a listing of documents that were reviewed for this Task. Descriptions of agencies are distillations of this information. Finally, Appendix D describes the role of federal environmental laws such as the National Environmental Policy Act (NEPA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Resource Conservation and Recovery Act (RCRA).

SECTION 2. DESCRIPTIONS OF THE ORGANIZATIONS

This section describes the eight development agencies for which ICF conducted research. For each agency, we present:

- The mission or business of the agency and the office/unit of focus.
- A description of the program or programs of interest, including a discussion of how the program is relevant to HUD and this study.
- The agency's approach to managing site contamination.

2.1 Department of Veterans Affairs - Office of Home Loan Guaranty

The mission of the Department of Veterans Affairs (the VA) is to "serve America's veterans and their families with dignity and compassion and be their principal advocate in ensuring that they receive medical care, benefits, social support, and lasting memorials promoting the health, welfare, and dignity of all veterans in recognition of their service to this Nation."

HUD-Comparable Activities/ Transactions
The VA guarantees homeownership loans to eligible veterans, which are provided by private lenders -- similar to FHA Single Family 203 (b) mortgage insurance.

Among its many social support services, the VA helps veterans become homeowners, through the Office of Home Loan Guaranty's Home Loan Program. The mission of the Home Loan Program, which is outlined in Part 36 of the "GI Bill," is to help veterans acquire and construct housing. It does so by insuring mortgages.

VA-guaranteed loans are made by private lenders (e.g., banks, savings & loans, or mortgage companies) to eligible veterans for the purchase of a home, which must be for their own personal occupancy. VA guarantees a portion of the loan to the lender, thereby protecting the lender against loss up to the amount guaranteed. This guarantee reduces the risk to the private lender, which permits the veteran to obtain favorable financing terms. There is no maximum VA loan. Nonetheless, lenders tend to limit VA loans to $240,000 because lenders sell VA loans in the secondary market, which currently places a $240,000 limit on the loans.[121] This program is similar to how FHA insures mortgages, through such programs as the Office of Housing Single Family 203 (b) mortgage insurance program.

The VA has very detailed environmental policies. They were developed as a result of the VA's function as a direct acquirer of properties and a developer of facilities for veterans, with hospitals being a primary example. Its 1995 Environmental Compliance Manual was developed for the Office of Facilities Management to implement NEPA on its construction-related activities. In that HUD has no similar function, this report does not focus on this area.

Nonetheless, there are no written regulations that are specific to the activities of the Office of Home Loan Guaranty. The VA's "Minimum Property Requirements" (MPRs), which are

[121] Much of the information for this paragraph comes from the VA Web site (http://www.homeloans.va.gov/factsheet.htm)

outlined in its "Lender's Handbook," require that any property "that will become the security for a VA-guaranteed loan must be constructed according to the applicable building code, Federal regulations, and HUD requirements…In existing and new construction cases, the MPRs provide a basis for determining that the property is *safe, structurally sound and sanitary*, and meets the standards considered acceptable in a permanent home in its locality." More specifically, the MPRs require that "The property must be free of hazards which may adversely affect the health and safety of the occupants, adversely affect the structural soundness of the dwelling and other improvements to the property, or impair the customary use and enjoyment of the property by the occupants."[122] The document later specifically addresses the issue of lead-based paint. It makes no mention of other hazardous waste.

As a result of this lack of specific guidance, the interview provided the best information regarding the VA's environmental practices with respect to its loan guarantee program. The Home Loan Guaranty program does not employ environmental officers. ICF interviewed a VA real estate appraiser, whom ICF was informed would be knowledgeable regarding the program's approach to site contamination.

In the interview we learned that before a loan is made through the Home Loan Guaranty program, an appraiser is assigned to determine reasonable value for the property, employing generally accepted requirements for property appraisal. A VA appraisal includes an assessment of the degree to which the property is "safe, sound, and sanitary," which VA appraisers describe as the "three S's."

When an appraiser learns of the possibility or existence of contamination on a property, through previous uses or interacting with the current owner, this possibility is identified in the appraisal report, with a discussion about the impact that the contamination is expected to have on the value of the property. The lender is informed of the contamination through receipt of the appraiser report, if the lender did not already know, which triggers a response by the lender according to its policies regarding contamination. Any on-site contamination is added as a condition on the "notice of value," which is the document that determines the amount for which the VA will guarantee the loan. The programmatic result of any site contamination that is found on a site is that it affects the value of the property and, therefore, the value of the loan guarantee (if it is approved).

Because most appraisers are not trained in environmental assessment, they do not usually uncover major environmental issues; appraisers tend to find such structure-related environmental problems as lead-based paint, asbestos or mold. The program does not require or provide funds to conduct any screening or assessment of its own. Unlike many other development agencies, it does not require a Phase I site assessment in order to provide a loan guarantee. Larger environmental problems on a site are usually revealed during the process of engineering or assessment conducted by the builder, the realtor, or the veteran purchasing the home. It is from these sources that the VA learns of larger environmental problems. The Home Loan Guaranty program does not have specific requirements or standards for remediation. It defers such oversight to EPA or the state/local regulatory authorities.

[122] VA Lender's Handbook, Minimum Property Requirements. 12-6. (http://www.homeloans.va.gov/lh/chapter12.doc)

When a program officer discovers contamination at a site where a loan has not yet been made, the VA asks that the recipient either choose another site or produce a written statement from the lender in which the lender acknowledges being aware of the contamination and takes responsibility for it. When contamination is discovered on a site for which a loan has already been issued, the program does not make any adjustments to the loan guarantee.

For properties acquired by the VA as a result of either foreclosure or development of facilities, an appraiser would complete the same process as that undertaken in the Home Loan Guaranty Program. There have only been a few cases when the VA has needed to deal with serious site assessment and contamination issues. In these cases, since Veterans Affairs has no guidelines in place to handle contamination, the Department contacted the local EPA office for guidance. The interviewee indicated that if a major problem were to be found on a property owned by the VA, it is likely that the Department would pay for the cleanup. When environmental problems on a VA-owned site are considered to be minor, the VA is most likely to sell the home, informing the buyer of the existing environmental issues that would need to be addressed after closing. Many of the properties that the VA acquires and wishes to sell are advertised as being for sale "as is," and eventually sold in that way. Buyers are made aware that they are responsible for any remediation. As an exception, when lead-based paint is discovered in a structure that the VA owns, the VA would either make the repair before selling the property or help the new buyer conduct the abatement through its "repair" program.

2.2 Department of Defense - Base Realignment and Closure (BRAC) Program

As the one of the largest environmental restoration programs in the country, the Base Realignment and Closure (BRAC) Program of the Department of Defense (DoD) is responsible for facilitating the development or redevelopment of 400,000 acres. As a result of the scale of its responsibilities, BRAC has one of the most comprehensive approaches to the cleanup and transfer of contaminated sites.

HUD-Comparable Activities/Transactions

DoD owns, and then transfers to local communities, properties that are contaminated with hazardous waste. FHA also faces this risk when it takes title to contaminated properties. Once transferred from DoD, communities use these properties for housing, industry, commerce, parks and other community purposes.

DoD conducts environmental restoration activities at its installations in order to address contamination from past defense activities. Since 1988, military bases have been closed and realigned according to the BRAC laws. These laws were created as Congress recognized that DoD no longer needed some of its installations, and that realigning missions and workload at other installations could improve DoD's efficiency. Therefore, the BRAC laws were created to remove some of this excess infrastructure. DoD is currently cleaning up installations that are intended for transfer to non-DoD parties, as well as realigned installations that remain DoD property.

More than 400 facilities are the BRAC program. More than 200 of these facilities have restoration programs on them. According to our interviewee from the Office of the Deputy Under Secretary of Defense for Installations and Environment, each facility has an average of 50 "sites" on it. At DoD, a "site" is a location within a facility where environmental contamination has been discovered.

The programmatic similarity to HUD of the BRAC program is that HUD's FHA also owns sites, or is at risk to own sites, where environmental contamination may pose a challenge. Also similar to BRAC, FHA also disposes of its properties, which are then redeveloped. Nonetheless, the environmental challenges that DoD faces in its BRAC program are far more intensive than those that HUD tends to face. The similarities and differences, and the lessons that HUD can learn, will be discussed in more detail in the report for Task 4.

DOD's environmental process is intended to facilitate reuse and transfer of military property to local communities while, at the same time, protecting human health and the environment. The Office of the Deputy Under Secretary of Defense Installation and Environment (ODUSD(I&E)) oversees both the environmental and the real estate aspects of the BRAC program. The Cleanup Office within ODUSD(I&E) develops environmental cleanup policy and oversees environmental restoration at BRAC installations. The major focus of ODUSD(I&E) is to ensure that the Department's BRAC properties are remediated and transferred quickly and efficiently.

Implementation of the BRAC program is decentralized, with overall environmental policy being created by DoD headquarters and then being executed by the individual services. Each service (Army, Navy, Air Force, etc.) oversees the environmental remediation of several facilities that are being prepared for transfer out of DoD's jurisdiction.

Unlike development agencies that must service a new set of sites each year, the BRAC program knows what its portfolio of facilities includes and, for the most part, the environmental problems that it must address. The facilities within its program are designated as such by the U.S. Congress, and no new facilities have been designated in recent years.

Its environmental challenges have also been defined for quite a few years. During the 1970s, DoD completed a massive effort to screen all of its facilities for environmental contamination. It completed the equivalent of a Phase I site assessment for all of its facilities by 1) conducting a "fence-line–to-fence-line" scan, 2) conducting interviews with knowledgeable personnel, and 3) researching the past uses of each of the facilities. A second scan of facilities and a review of records were completed shortly after the Superfund Amendments and Reauthorization Act (SARA) went into effect in 1986. Based on this new information, BRAC developed a list that established the order in which sites would be cleaned up. The order was based on the amount and type of contamination present, the potential for the contamination to migrate from the source of the contamination, and the potential impact the contamination would have on humans or the environment. Sites judged to present the highest risk were placed highest on the list.

When BRAC prepares a site for transfer to a community, the Installation Level Environmental Restoration Team that is responsible for the site will follow the CERCLA response process. That process involves completing a site inspection (using the EPA hazard ranking system, HRS, evaluation), a remedial investigation, and a feasibility study; establishing a record of decision; developing a remedial design; and implementing the remedial action construction, remedial action operation and long-term management plan. Sites are transferred according to the CERCLA 120 (h) process, which governs the transfer of government property when there are

CERCLA-regulated materials on the property.[123] The planning steps have public involvement elements, and all remediations incorporate local cleanup standards. The restoration team often employs contractors to complete the work. BRAC funds all steps in the process, with the exception of long-term management (monitoring), which is usually funded by the local government that receives the transferred property.

For several years, the BRAC program has been assessing the applicability of institutional and engineering controls to its facilities. One of program's resources on this topic is a paper entitled *Making Institutional Controls Effective*, which was developed by the Defense Environmental Response Task Force. The document states:

> *"It is essential to recognize that it is anticipated that institutional controls will not be used over entire installations. Instead, they will be used on specific parcels in limited situations. In addition, where they are used, it may be for a limited period of time – allowing their removal when they are no longer necessary."*

The report further recognizes that some parties are concerned about using institutional controls as a remediation tool because, over time, the controls may be forgotten and therefore become ineffective. The report outlines several suggested safeguards to use when an organization decides to allow institutional controls. These suggestions include:

- Organizations should encourage "public participation and solicit local, state and community involvement" before deciding to use institutional controls.
- Organizations should collaborate with local and state governments to develop and integrate these controls so as to provide an additional and enforceable method to regulate institutional controls.
- Organizations should consider the creation of a registry of sites for which institutional controls are employed.
- Organizations should consider establishing a system that can, on a regular basis, provide information to landowners and other stakeholders on "the nature of the site, health risks and other criteria" regarding the institutional controls that have been put in place.

2.3 General Services Administration – Public Buildings Service

HUD-Comparable Activities/Transactions
GSA PBS acquires, owns and disposes of properties. As with FHA, PBS must be cognizant of environmental liability and risk for all of these activities.

The General Services Administration (GSA) is the largest public-building real estate organization in the United States, and the Public Buildings Service of GSA is responsible for meeting the space requirements of federal agencies. It maintains over 339 million square feet of workspace, has 1,800 government-owned buildings and 6,500 leased locations.

[123] Appendix D provides a review of some key environmental laws, including CERCLA.

The Public Buildings Service encounters contamination when it purchases, develops, monitors and sells sites. An interviewee explained, "We encounter contaminated sites often; this is because much of the property that GSA is interested in, such as sites suitable for a courthouse, is in downtown locales, and those are often polluted areas."

HUD's redevelopment mission results in it having a similar bias as GSA's toward infill sites, where contamination is more likely to be encountered than at sites with no history of development. The purpose of understanding GSA PBS's environmental policies is in understanding how it protects the government against environmental risk and liability, which is a particular concern for HUD in its ownership of contaminated properties.

GSA is a decentralized organization, with the regional offices responsible for handling site-specific contamination issues. Within each region, GSA follows the regulations created by EPA, and the relevant state and local governments. There is no national, GSA-specific cleanup guidance on how its employees should identify, assess, and remediate contaminated sites. It therefore does not have any formal requirement that a Phase I assessment be completed.

Nonetheless, according to an interviewee who is an environmental engineer in the Region 9 office in San Francisco, GSA ensures that a Phase I is completed as part of the acquisition process. The initial assessment involves researching the history of the property for previous uses involving elevated levels of lead, asbestos, PCBs, and Underground Storage Tanks. These steps are taken to "adhere to real estate law practices and to qualify for property loans."

In practice, GSA requests that the potential seller of a site completes a Phase I early in the acquisition process. If further investigation is necessary, GSA will request that the seller, whether a city government (frequently the case) or a private party, execute a Phase II assessment. When contamination is found, GSA will work with the seller to determine who will clean up the contamination, and it will closely coordinate with local environmental authorities to ensure that all of the local requirements are met and that the sites are cleaned to an acceptable level. If GSA funds the remediation on a site, GSA will deduct the cleanup costs from the sale price of the property.

GSA defers to the cleanup standards and practices established by state and local authorities when encountering hazardous materials on a property. As a result, environmental engineers from the Public Buildings Service have two main tasks. First, they coordinate with the state and local entities that oversee cleanup requirements. Second, they manage GSA's compliance with whatever long-term monitoring requirements are in place after remediation is complete. In California, for example, GSA works with 1) the local government, to transfer the property; 2) the county health authority, to establish cleanup levels, and 3) receives approval from the state on remediation plans.

As a general practice, GSA prefers a remediation plan to clean sites to "background" levels.[124] On occasion, institutional or engineering controls are necessary. On such sites, GSA monitors

[124] "Background" is defined and discussed in Task 1 of this study.

the controls on an ongoing basis. In Region 9, where GSA has four current projects, it must actively monitor 26 sites.

2.4 Department of Agriculture (USDA) – Rural Housing Service (RHS)

RHS is reviewing this section for accurateness and completeness. For the final report, edits may be made to what is presented here.

HUD-Comparable Activities/Transactions
RHS guarantees loans for affordable housing that are provided to homeowners and developers by private lenders. RHS also provides a series of direct loans to support various housing activities, which HUD does not do. As with FHA, RHS must be cognizant of environmental liability and risk for all of these activities, in that it risks taking ownership of property through its guarantees or direct loans.

Within the United States Department of Agriculture (USDA), Rural Housing Development (RHD) oversees a wide range of activities in the areas of community development and housing for rural Americans. RHD, formerly the Farmers Home Administration, distributes more than $4 billion in loans and grants each year. The Rural Housing Services (RHS) division of RHD administers direct loans, loan guarantees, and grants for single-family and multifamily housing projects. Direct loans are made and serviced by RHS staff, loan guarantees are made to banks or other private lenders, and grants are made directly to individuals or organizations. In 1999, the agency helped more than 67,000 rural Americans purchase or improve their homes, financed the construction of more than 2,100 units of affordable rental housing and built or expanded 620 vital community facilities, including rural schools, libraries, day care centers, police and fire stations.

The RHS administers two loan guarantee programs: the Section 515 Rural Rental Housing Guaranteed Loan program and the Section 502 Single Family Housing Loan Guarantee program. Its direct loan programs are varied, and include the Section 502 Rural Housing Direct Loans for single-family housing. There are environmental considerations for all of these programs.

There are HUD programs that are similar to both of the loan guarantee programs, in both the program structure and the potential environmental risk and liability. While there are no direct HUD analogs to the RHS direct loan programs, its approach to environmental management for housing programs is relevant.

For the Rural Rental Housing Guaranteed Loan program, the clients are mortgage lenders who work with housing developers in rural communities. In order to meet environmental requirements, RHS program managers at RHD's various state offices consult with RHD state environmental coordinators, who advise program managers on the environmental considerations of the loan-approval process and in decisions concerning site remediation. RHD's state environmental coordinators receive training by ASTM contractors on environmental site assessment issues, NEPA and hazardous wastes.

The Rural Rental Housing Guaranteed Loan Program handbook (HB-1-3565) requires a Phase I Environmental Site Assessment, completed by an environmental professional, for new construction projects or for existing buildings when the agency has reason to believe that there is a potential for contamination. An interviewee from RHS stated, "Investigation before making

the loan simply makes good business sense. You need to try and understand any liability issues that might be associated with the property and you want an accurate assessment of the property's market value."

The Rural Housing Direct Loan program uses the ASTM Transaction Screen Process for environmental site assessment and completes the questionnaire developed by ASTM for this protocol.

If a screening or Phase I determines that a site is likely to be contaminated, RHS requires that the borrower hire a licensed contractor to conduct further testing. If a site requires remediation, RHS is likely to request that a client find an alternate site. However, this decision is made on a case-by-case basis. If cleanup is required, the Rural Rental Housing Guaranteed Loan Program guidelines require the borrower or seller to hire a licensed contractor to remediate the contamination. The agency defers to the appropriate oversight agencies (i.e., state and local regulatory agencies) to approve cleanup plans, determine the level of health protectiveness for the site, and decide whether housing would be an appropriate reuse of the property. Decisions on institutional and engineering controls are also deferred to these oversight agencies.

2.5 Department of Commerce – Economic Development Administration (EDA)

HUD-Comparable Activities/Transactions
EDA provides grants to state, local and tribal governments to develop employment-generating projects. Its activities are most similar to HUD's CDBG program.

The Economic Development Administration (EDA) of the U.S. Department of Commerce provides grants to rural and urban areas of the United States to support job creation and retention and to stimulate industrial, commercial and technological growth. EDA grants address both long-term distress, as well as sudden and severe economic dislocations that are due to such events as natural disasters, the closure of military installations, changing trade patterns, and the depletion of natural resources.

The EDA funding programs that are most relevant to this study are the Public Works Program and the Economic Adjustment Program. Both programs are comparable to HUD's Community Development Block Grant (CDGB) program, in that they both provide grant funds to public agencies for construction projects. The Public Works Program funds help state, local and tribal agencies to finance infrastructure projects that will support economic development. Economic Adjustment Program funds help these agencies to implement projects, which may include construction of infrastructure; capitalize Revolving Loan Funds, which may be used to make loans to businesses for development; and comprehensive economic development planning.[125] It is quite common for EDA grants to be combined with HUD Community Development Block Grant (CDBG) resources on development projects.

[125] Much of this information comes from EDA's Interim Investments Guide, which can be found on the Web at http://www.osec.doc.gov/eda/pdf/GPO26198.PDF.

The Compliance Review Division is the division of EDA that oversees environmental issues related to EDA activities.[126] It is responsible for ensuring that projects implemented with EDA funds are in compliance with NEPA and are protective EDA's interests. The Director of Compliance Programs, whom ICF interviewed, works in EDA headquarters in Washington and sets overall policy. The six Regional Environmental Officers, one per regional office, manage day-to-day work on specific sites and grants. This "fieldwork" entails reviewing, or contracting the preparation of, the environmental reports that are required in order to move forward on a project that uses EDA funds. The regional officers are responsible for preparing the NEPA documentation. EDA headquarters is not normally involved in the day-to-day activities of environmental reviews, though headquarters staff will assist field staff when necessary.

The Director of Compliance Review and the Region 6 Regional Environmental Officer informed ICF that a series of costly environmental problems in the 1970s and 1980s led EDA to avoid sites with environmental contamination. Both interviewees cited the "Wisconsin Steel" site as having required EDA to expend significant resources for remediation.[127] In the early 1990s, EDA revisited this policy in the context of the renewed interest in redeveloping brownfields among its local-government partners. EDA developed a step-by-step process for how it would comply with NEPA, protect EDA's interests and facilitate redevelopment. The 1992 Directive "EDA Program to Reduce the Risk of Hazardous Waste Liability" was the result of this effort. This Directive remains EDA's basic document for environmental management. The Scope of the Directive explained EDA's concerns quite clearly:

> *"EDA frequently receives applications for projects which could involve hazardous or toxic waste remediation. Under the CERCLA, owners or operators of sites involving toxic or hazardous contamination can be held liable for the costs of cleanup. Because EDA takes first lien on grant projects involving real property, it is necessary for EDA to avoid the position of owner or operator of a contaminated site*."

However, the Directive also states:

> *"The need for remedial action does not necessarily negate a proposed EDA project. Minor removal or a simple cleanup can be completed to allow the project to proceed. These remedial actions can be required as special environmental conditions to the grant*.[128]

[126] Other area of responsibility for the Division include Civil Rights and "excess capacity," which involves EDA ensuring that its funds are not supporting projects where they are not needed.

[127] From the Notice of Proposed Settlement, Federal Register: April 16, 1997 (Volume 62, Number 73)]. "EDA guaranteed a loan of $100 million under its Special Steel Loan Guaranty Program in 1979. After the Wisconsin Steel Company filed for protection under the bankruptcy laws in 1980, EDA honored its guaranty. EDA and the International Harvester Corporation, the predecessor to Navistar, a former owner of the Site and also a guarantor of the loan, thereafter foreclosed upon the mortgages securing the loan. Title to the Site is currently held by American National Bank as trustee for the Wisconsin Steel Land Trust an Illinois land trust. EDA is the 90 percent beneficiary of the Trust and Navistar is the 10 percent beneficiary." EDA no longer has a loan guarantee program.

[128] EDA Directive No. 17.01, *EDA Program to Reduce the Risk of Hazardous Waste Liability*, 17.01.02. July 9, 1992.

To screen sites for contamination, a Regional Environmental Officer completes the EDA "screening" document, which is entitled the "Applicant Certification Clause." This screening is pre-application checklist that covers some of the same material as the ASTM Transaction Screen or a Phase I assessment, and it provides information on whether further investigation is necessary.

If a Regional Environmental Officer is concerned by any of the responses to this screening, the Officer may recommend that further investigation be done before the NEPA environmental review documents can be completed. In most cases, the applicant will pay for a Phase I and/or Phase II, though EDA has on occasion contributed resources for sites assessments.

If contamination is found, the state or local environmental regulatory authority prescribes whether and how the remediation is to take place. It is typical for the applicant to pay for all cleanup costs, although EDA will pay for remediation if those costs are small relative to the size of the overall project and to EDA's assistance, or at the discretion of the EDA Assistant Secretary. It is typical for EDA to abide by the rulings of the regulatory authorities, and it has provided grant funds to sites whose remediation includes engineering and/or institutional controls.

EDA remains concerned about potential liability, even though it no longer places itself in a position to take title to property. It includes an "Indemnification Standard Condition" in its Terms and Conditions, which holds "the Government harmless from and against all liabilities that the government may incur as a result of providing an award to assist, directly or indirectly, preparation of the project site of construction…to the extent that such liabilities are incurred because of toxic or hazardous contamination …" EDA had previously required that all applicants sign an Indemnification Agreement, as part of the 1992 Directive; but applicants were refusing to do so, leading EDA to develop the Standard Condition.

2.6 California Housing Finance Agency (CHFA)

As the housing finance agency for the State of California, the California Housing Finance Agency (CHFA) promotes affordable housing by financing below-market-rate loans to create safe, decent, and affordable rental housing and to assist first-time homebuyers in achieving homeownership. CHFA is a self-supporting agency and makes loans to earn income.

Homeownership programs include both direct loans to first-time homebuyers and mortgage insurance. Mortgage insurance is provided through the

HUD-Comparable Activities/Transactions

CHFA provides Californians a suite of programs for multifamily housing, homeownership, rent support and other special activities. The activity/transaction that is most comparable to HUD is CHFA's mortgage insurance program to support loans from private mortgage lenders to first-time homebuyers. Its direct loans, though not directly comparable to any HUD program, also expose CHFA to potential repossession of environmentally contaminated properties.

California Housing Loan Insurance Fund (CaHLIF), which provides some comparable products as those provided by FHA. It competes against FHA for business.[129]

CHFA does not have any written policy on how to handle site contamination, and rarely encounters contamination on its sites. Instead, the agency implements procedures that it considers to be consistent with NEPA and the California Environmental Quality Act. It also relies on local and state environmental authorities for information on the environmental conditions of a site, and whether the site is to be considered safe. For issues involving lead paint and asbestos, CHFA relies on HUD guidelines.

In practice, CHFA determines whether a site is at risk of contamination though various approaches. Its preference is to review a Phase I completed by the prospective borrower. If, for some reason, the borrower has not, or is unable to, complete the Phase I, CHFA will commission the Phase I on its own. In such cases, CHFA works with local–government environmental authorities for guidance, conducts an internal review of documents and reports, and assesses the extent to which the agency as a lender would be liable should contamination be discovered.

If the Phase I reports a high likelihood of hazardous waste being on the site, the agency requires that a Phase II be completed. An interviewee noted that the agency carefully takes into account the firm that completes the Phase Is and IIs. If the agency knows the firm to have completed good work in the past, the agency will accept the work without much review. If the agency does not have much experience with the environmental firm, the agency will closely scrutinize the reports.

Once the agency decides to move forward on a property, the borrower cleans up the site and the agency hires a consultant to ensure that the remediation was properly executed. If the site is not cleaned to background and contamination is left on site, CHFA requires an operations and maintenance plan to be put in place and followed. CHFA does, therefore, accept institutional and engineering controls if the local or state environmental authority judges the site to be safe.

2.7 Federal Home Loan Mortgage Corporation (Freddie Mac)

Freddie Mac was chartered by Congress in 1970 to increase the supply of funds that mortgage lenders (such as commercial banks, mortgage bankers, savings institutions and credit unions) could make available to homebuyers and investors in multifamily housing. Freddie Mac (and Fannie Mae, a competitor business with a similar charter) is a Government-Sponsored Enterprise (GSE). It is a private business that that is regulated by HUD, under the Federal Housing Enterprises

Why Freddie Mac is Relevant to this Study

Freddie Mac purchases mortgages from private mortgage lenders and sells them as mortgage-backed securities on the private equity market. Its role in this study is due to:

- Its indirect, yet real, relationship to direct loans, similar to FHA
- HUD Ginnie Mae's role in providing guarantees for mortgage-backed securities.
- HUD's role in regulating Freddie Mac for financial safety and soundness.

[129] CHFA presents its arguments for why some of its mortgage insurance products are superior to those of FHA's, at http://www.chfa.ca.gov/homeownership/cahlif/insurance-alternatives.htm.

Financial Safety and Soundness Act of 1992. Freddie Mac's public purpose is to provide a continuous and low-cost source of credit to finance America's housing.[130]

Freddie Mac does not make direct loans. It conducts its business primarily by buying mortgages from lenders, packaging the mortgages into securities, and selling the securities to investors. Mortgage lenders use the proceeds from selling loans to Freddie Mac to fund new mortgages. This system is designed to constantly replenish the pool of funds available for lending. Freddie Mac's multifamily products and services support the acquisition, refinance, rehabilitation and construction of apartment buildings. Freddie Mac is also responsible for fulfilling affordable-housing goals set by HUD. In 1999, HUD announced a goal that 50% of the business of GSEs in 2001-2004 be for housing of low-to-moderate-income families.

Together with Fannie Mae, an even-larger business with a similar government charter and regulated in a similar manner, Freddie Mac exerts a large influence on the overall home-buying market. One key area of influence is in setting standards in the market for mortgage lending. "Freddie Mac's job is to buy mortgages from lenders across the country that meet the underwriting and specific program standards that produce investment-quality mortgages."[131] Mortgage lenders who plan to sell their loans to Freddie Mac or Fannie Mae must abide by the judgments of those two businesses regarding what is "investment quality," or risk not finding a purchaser for its mortgages. As a result, mortgage lenders tend to structure their mortgages according to these standards. Specifically relevant to this study, mortgage lenders must take into account the approach that Freddie Mac and Fannie Mae take to environmental due diligence. If Freddie Mac indicates that it would not be willing to buy a mortgage from a lender because of environmental concerns, it is likely that the lender would not approve the loan until Freddie Mac's concerns have been alleviated.

An important reason that Freddie Mac (or Fannie Mae) is relevant to this study is that it has a financial interest in ensuring that the mortgages that it purchases does not expose it to unmanageable environmental risk. That interest drives its approach to environmental risk management, which provides a comparison to HUD FHA and to Ginnie Mae. In fact, of all of the agencies researched for Task 3, Freddie Mac offers the best possibility of providing useful comparisons for Ginnie Mae, whose role is to guarantee the types of mortgage-backed securities that Freddie Mac sells.

Freddie Mac's environmental policies are documented in a guidebook chapter that is distributed to all employees and to those who sell and service Freddie Mac loans. The policies require the preparation of an environmental report, similar to a Phase I assessment, for mortgages that exceed one million dollars. For loans that are less than one million dollars, an environmental survey is required. An environmental survey entails a site inspection and basic research into the property's prior use. Environmental reports and surveys must be completed for the property in question prior to loan approval. They are completed by environmental consultants, and are funded by the borrower. If the environmental report or environmental survey finds that there is a

[130] Much of the information in this and the following paragraph come from a page on Freddie Mac's Web site that focuses on frequently asked questions (http://www.freddiemac.com/corporate/about/twlvquest.html).
[131] Freddie Mac's Web site, at www.freddiemac.com.

reasonable possibility of contamination, and that a Phase II is required, it is unlikely that the loan will be approved. In order to avoid liability, it is rare for Freddie Mac to approve of a loan being made on a site where there is significant contamination. On this issue, the interviewee stated, "sites that would necessitate remediation are usually weeded out."

Despite its strict screening practices, Freddie Mac has funded a few projects on which contamination was discovered. In these cases, Freddie Mac coordinates with local environmental authorities to ensure that the project is properly handled.

2.8 PNC Financial Services (PNC)

The PNC Financial Services Group, Inc., based in Pittsburgh is one of the nation's largest diversified financial services organizations. It offers a broad range of services, which include community banking, corporate banking, real estate finance, asset-based lending, wealth management, asset management and global fund services.

Why PNC is Relevant to this Study
PNC provides direct loans to support development (commercial, industrial and residential) on properties where there may be environmental contamination. Through subsidiaries, it is also a syndicator of affordable housing equity; as well as a national provider of multifamily mortgage loans, including financing for affordable and senior housing. Its various activities require environmental due diligence in ways that are comparable to HUD.

Its relevance to this study comes from two specific areas. First, in its role as a commercial lender, PNC has underwritten loans on contaminated properties and taken title to properties on which environmental contamination exists. Second, through a series of subsidiaries that are grouped together under PNC Real Estate Finance, PNC is a syndicator of affordable housing equity and a provider of multifamily mortgage loans, which include financing for affordable and senior housing.[132]

As a result of this varied business, PNC has well-developed policies for how to manage environmental risk. These policies were developed and are implemented by PNC's Environmental Services Office, which is directed by the Vice President for Environmental Services. This Vice President, whom ICF interviewed for this study, is also Chair of the Risk Management Committee of the Environmental Bankers Association and has therefore learned a great deal about the approach that other banks take to managing environmental risk.

According to our interviewee, the vast majority of environmental-risk activities happen as a result of commercial lending for real estate. PNC requires that the borrower to conduct an "environmental audit" as an input to all applications for real estate loans whose value is more than one million dollars, when the loan would be secured by the property. The audit that PNC requires is a version of a Phase I analysis, in accordance with ASTM standards. It is enhanced, when relevant, by the inclusion of such building-structure-oriented elements as asbestos and lead-based paint, and other elements as the environmental services office sees as necessary. The

[132] Much of this information comes from PNC's Web site, at http://www.pnc.com/aboutus/groupoverview.html, as well as from our interview.

Phase I report is sent to PNC's environmental services office, which reviews the report and makes a recommendation on how to proceed.

For loans that that are less than one million dollars, account officers perform a transaction screening analysis as part of the overall project assessment. PNC account officers complete a form, which constitutes a protocol similar to that of the ASTM Transaction Screen. It includes site inspections, visual surveys, and interviews. If the account officer finds information that indicates potential environmental concerns, the officer forwards the information to the environmental services office, which determines what the next step should be. The normal next step would be the environmental audit (enhanced Phase I) discussed above.

If the Phase I environmental audit indicates a need for further investigation, the environmental services office will request that the borrower tests the relevant media (groundwater, soil, the building, etc.). PNC did not call this step a formal Phase II. Rather, their office has the flexibility to require investigations as they deem necessary, which may or may not entail a full Phase II analysis.

The environmental service office estimates that it provides input on environmental concerns for approximately 15 percent of PNC's loan volume. The head of its office states that account officers accept the environmental services office's advice, and that the office gives a great deal of discretion in protecting the company's interests while facilitating making loans. Staff for the office include experts in finance and environmental engineering, so that they can make judgments based on both of these key elements.

While PNC chooses to require that the borrower pay for the Phase I, other financial institutions prefer to conduct it themselves. There are advantages and disadvantages to each approach. PNC prefers to have the borrower fund the study because PNC is concerned that, if it were conducting the survey, it would have an affirmative responsibility to report any findings of concern to regulatory authorities (as the law requires in New Jersey), even if PNC does not eventually make a loan on the property. Other institutions are more concerned that the study, if funded by the borrower, may not represent an analysis that is in the interest of the bank (as opposed to the potential borrower). PNC mitigates that risk by requiring that the assessment be done by trusted technicians and by carefully scrutinizing reports and not always accepting the results as sufficient. It is not uncommon for the environmental services office to request more testing or to make an internal recommendation that is not completely consistent with the recommendations in the report, if the office views those recommendations as insufficiently protective of the bank's interest. The interviewee said that he has received Phase I reports that indicated no evidence of contamination on sites that later required $100,000 in clarification because certain issues were not addressed.

In terms of standards for remediation, PNC tends to follows the relevant state environmental regulations, if the environmental services office believes that the state regulations serve to protect the bank sufficiently. In states where PNC does not trust the standards (e.g., Virginia), it will require that the more-strict New Jersey requirements be used. PNC believes that New Jersey's standards are based on a significant amount of scientific research and are therefore quite rigorous and protective.

PNC will approve loans on properties where there are institutional and engineering controls, including on properties where there is residential development. The interviewee cited a particular example in Delaware. In such cases, PNC will require the approval of a trusted state regulatory authority; though PNC will still review it on a case-by-case basis.

SECTION 3. SIMILARITIES AND DIFFERENCES AMONG AGENCIES

This section discusses the similarities and differences among the development agencies' approaches to site contamination, using a number of measures. To accomplish this goal, the section is divided into four separate and distinct subsections. In this section we first examine how risk influences the overall environmental management framework for an agency or business, or an office within an agency or business. We then group the agencies by the four types of transactions that we found to be relevant for comparison to HUD (provider of grants, insurer or provider of direct loans, acquirer of properties, disposer of properties), and discuss our findings. Next, we compare the agencies' approaches to the steps in addressing site contamination. Finally, we compare the agencies' site contamination practices on a series of measures, which include: protectiveness, timeliness, cost, clarity, and level of staff training.

3.1 Factors that Influence an Agency's Framework for Addressing Site Contamination

In the ideal, a development agency would align its processes for addressing site contamination according to the real risk generated by each of its particular actions or transactions, with the risk categories including: 1) risk to public health and natural resources, and 2) potential costs and liability to the agency. When the risk associated with an action is high, greater precision and care would be built into the system. When the risk is low, a more cursory approach would be sufficient.

In the ideal, those real (actuarially "correct") risks would also be embodied in the legal and regulatory structure, leaving no contradiction between the agency's perception of risk and the legal and regulatory requirements that the agency must meet. In that ideal, the agency would also have the freedom to make key decisions regarding the inputs to its system, giving it the ability to align the system with the real risk that it faces. Those inputs include the amount of budget allocated to due diligence and cleanup, the number of staff devoted to environmental management, the qualifications and training of staff, and more. For each type of transaction, it would allocate the "correct" budget, which would be not too high and not too low; hire the right amount of staff, who would have the right level of training; invest the right amount of time and resources in developing procedures and protocols; and do other system inputs correctly, as well.

In practice, especially for public agencies, it is very difficult to design systems to meet that ideal. At a technical level, it is frequently difficult to assess the precise level of the real risk that the ideal system would be managing. Doing so requires the ability to assess the technical, legal, economic and human factors of risk to a degree that would permit risk quantification. As difficult as that challenge can be, insurance companies are increasingly doing such risk quantification as they develop and sell environmental insurance products. Their level of precision is sufficient for them to base both premiums and coverage on that risk quantification, and (we assume) make a profit doing so.

Translating that quantification into how a system should be structured adds another level of complexity to a somewhat-imprecise science. Banks such as PNC, however, have been able to set up systems that make them able to do business on contaminated sites and still make a profit.

PNC does so in an industry that, similar to the insurance industry, relies heavily on quantifying many types of risk, including that derived from environmental contamination.

Factors unrelated to risk also constrain an agency's ability to design its ideal system. Other values and processes compete with risk factors. For example, environment budgets are frequently developed and allocated in processes that are independent of environmental risk factors. Staffing decisions are constrained by both the allocated budget and the rules of the Civil Service. Furthermore, the laws, regulations and standards with which agencies must comply are not always designed according to the actual risk faced by the agency or the public.

To the extent that agencies both have the freedom to act and are able to characterize (whether quantitatively or not) the risk inherent in a type of transaction, *the systems that agencies develop to address site contamination are heavily influenced, and even determined, by the types of transactions that they carry out.* The strongest evidence to that effect comes from how common it is for agencies to have different environmental management processes for different offices, each of which may be carrying out its own distinct functions within the same organization. The Department of Veterans Affairs, for example, has a much more detailed and prescribed approach for its program to develop VA hospitals on sites that it will own than it does when it is guaranteeing single-family mortgages. HUD, as another example, has different approaches for: 1) when a financial transaction includes the possibility that HUD will take title to a contaminated property, as compared to 2) when a financial transaction does not include that possibility.[133]

In order to understand a development agency's system for managing site contamination, it is therefore crucial to understand the transaction around which it has developed its system.

3.2 The Effects of Different Types of Transactions on Environmental Management

As discussed in Section 1, the development agencies we studied are engaged in four types of transactions that we find to be relevant for comparisons with HUD and in which (except for providing direct loans) HUD is engaged.

- Providing grants
- Insuring/guaranteeing or providing direct loans
- Acquiring properties
- Disposing of properties

This section discusses the impact that each type of transaction appears to have on how the development agencies studied structure their approaches to site contamination.

Providing Grants

Of the agencies we studied, only EDA and RHS provide grants for activities that are relevant to HUD. When an agency is providing grants that are not connected to any other program, the agency's normal concern is that its program funds be in compliance with the National

[133] This topic is discussed in more detail in the Task 2 report.

Environmental Policy Act (NEPA).[134] That is, the agency must be concerned about the impact of the actions that it is funding on NEPA areas of concern, which include hazardous waste. EDA is a normal agency in that regard. Its core environmental actions and processes are in service of complying with NEPA. Its grants do not place the agency at risk for owning contaminated sites, and there is no financial risk to EDA if an EDA-subsidized project fails.

In the past, EDA also guaranteed loans for economic development projects. Some of its processes are legacies from those past programs, the principle example of which is EDA's standard clause in its grants that places environmental liability/responsibility with the grantee, rather than with EDA.

At core, its program seeks to screen properties for whether site contamination may exist. If none is suspected, hazardous waste will not provide an obstacle to EDA producing a Finding of No Significant Impact (FONSI) under NEPA. If the problem is judged to be greater, EDA may require that testing be done that could support an Environmental Assessment (EA) or an Environmental Impact Statement (EIS).

Insuring/Guaranteeing Loans or Providing Direct Loans

HUD insures home loans through many programs in the Office of Housing / Federal Housing Administration (FHA). HUD does not provide direct loans. Nonetheless, environmental concerns are similar for direct and guaranteed loans. In both cases, agencies must be concerned about both the financial health of the project and potential liability under CERCLA. As a result, we discuss them here together. Five of the agencies studied provide either guarantees or direct loans: Rural Housing Service (RHS), Veterans Affairs (VA), California Housing Finance Agency (CHFA) and PNC Bank. Furthermore, although Freddie Mac does not provide either of these services, its close relationship with private mortgage lending institutions connects its policies with those of direct lenders.

Those who lend and those who guarantee loans have three primary concerns regarding the potential impacts of environmental contamination on real estate development projects:

- *Failure of the project, affecting repayment* – For many real estate projects, especially those led by private developers, the income stream from the development is the expected source of repayment to the lender. If contamination on the property requires high cleanup costs, the economics of the project can be adversely affected, which may be detrimental to the developer's ability to repay the loan. In underwriting the loan, lenders and guarantors seek to minimize any effects that contamination would have on repayment by either 1) requiring that cleanup be done before the loan or guarantee is executed, or 2) conducting sufficient assessment to be able to include the cleanup costs in the overall costs of the project.

- *The property as undesirable collateral* – In most real estate loans, from either a public or a private institution, the property for which the loan is made serves as the collateral; and the lender reserves the right to repossess that collateral if the borrower fails to make scheduled

loan repayments. If, however, a site is contaminated and must be cleaned up, the true value to the lender of that collateral is reduced by those cleanup costs. In the worst cases, from the perspective of the lender/guarantor, the cleanup costs are higher than the value of the property (were it clean), leaving the collateral with negative value. Lenders/guarantors may choose not to repossess the property in these cases, even when loans are in default. To avoid such situations, lenders/guarantors seek to ensure that their loans are accompanied by strong collateral and therefore, in the appraisal stage of underwriting, seek to understand the real value of the property. If that value is reduced due to contamination, it is common for lenders/guarantors to request that prospective borrowers identify another, more secure, source of collateral before approving the loan or guarantee.

- *Potential for liability* – If a lender/guarantor repossesses property due to default on a loan and the property contains contamination, under CERCLA[135] the lender becomes liable not only for cleanup costs but also for any injury or damage that results from the contamination. In making the decision whether to repossess a property, a lender/guarantor will assess the likelihood that contamination on a site will cause harm for which it will be held liable, and what cost of that liability is likely to be. Lenders/guarantors will sometimes choose not to repossess a property if that likelihood is judged to be high, or if the cost of being liable would be too high. To avoid such situations, lenders/guarantors seek to assess the expected cost[136] of the contamination before accepting the property as collateral in making or guaranteeing a loan.

9Systems for environmental due diligence for loans and loan guarantees take into account these three areas of risk.

Acquiring Properties

Some agencies acquire properties as part of their mission. GSA's Public Buildings Service (PBS) acquires property for federal agencies to use. Such an agency knows that, as a part of implementing its programs, it will own sites. It therefore conducts its environmental due diligence taking into account the *certainty* that it will become responsible for any contamination on the site, especially when PBS has no choice but to purchase a property. Complete assessments (Phase Is and IIs) and thorough cleanups are standard approaches for such agencies, including GSA. Though GSA prefers to conduct complete cleanups, GSA is willing to include institutional and engineering controls as part of the remediation if it is technically infeasible or cost-prohibitive to conduct a remediation to background, as long as the regulatory authority is comfortable with the remediation. GSA PBS is willing to be responsible for long-term

[136] Expected cost can be thought of as a function of likelihood and value. As an example, if a lender estimates 1) there to be a 20% chance of contamination causing harm for which the agency would be liable, and 2) the cost of that liability to be $1 million, the Expected Cost would be .2 x 1,000,000 = $200,000. A lender would not necessarily then do the loan if it believed that a $200,000 cost were worth the risk. The decision would be made in the context of 1) the lender's ability to spread that risk across its entire portfolio of holdings and 2) the ability of the lender to manage the $1 million (or more) cost that is expected to occur in that 20% chance. It is precisely in these circumstances when lenders seek insurance in order to make their loans, if (in this example) they judge that the $200,000 estimated cost is manageable but that the $1,000,000 cost would be prohibitive.

monitoring; it is currently monitoring 26 such sites in California, alone. Such willingness may be a result of the site control that GSA can maintain, as compared to when an agency is disposing of a property and can no longer ensure site control.

Other agencies acquire properties through repossession. (Similar to previous section) CHFA, RHS and PNC - as lenders or guarantors - take title to properties when a borrower defaults on loan repayments. For these agencies, environmental due diligence occurs in assessing whether to execute a loan or guarantee. The due diligence is conducted taking into account the *likelihood* that the agency would repossess the property, once the loan or guarantee is executed. Such agencies use transaction screens or assessments to determine whether a property needs remediation. All of these agencies require that the prospective borrower clean up contaminated properties before loans will be executed. PNC provides an interesting exception in certain circumstances. If the economics of a project are significantly positive, PNC is willing for a borrower to use some of its loan to conduct the remediation. In this case, PNC has balanced the potential costs with the potential benefits of engaging in the project.

In the environmental due diligence related to acquisition of properties, agencies that may end up disposing of the properties must take into account how the environmental concerns related to disposition.

Disposing of Properties

Agencies that own portfolios of sites have policies regarding how they dispose of sites that they no longer wish to have as part of the portfolio. The DoD BRAC program has such a portfolio, for which BRAC's goal is to dispose of it all. GSA PBS also disposes of properties that are no longer needed by any federal agency. Other agencies that we have studied own portfolios due to repossession. As these agencies have no mission connected to owning the portfolio, they also seek to dispose of their properties.

In both cases, agencies need to be concerned with the liability associated with the contamination after the sale/disposition of the property. If complete remediation (to background) has been conducted at a site, there are no risks related to site contamination in disposition. At many sites, complete cleanup has not been possible, leading to two concerns: 1) greater difficulty in finding a willing buyer or transferee (in the case of DoD), and 2) future liability related to the contamination left on the site.

Once a buyer or transferee is identified, any contamination left on site must be monitored. Most agencies prefer that the new owner becomes responsible for the monitoring. EPA has expressed concern about the reliability in the long-term of such monitoring, especially if it relates to institutional controls. Development agencies are also concerned that they will be held liable if the monitoring lapses over time, even if they were not responsible for the monitoring. Development agencies that dispose of properties will therefore seek to minimize the likelihood that any contamination left on site will cause harm or present costs to the agency once the agency no longer owns the site.

3.3 Comparing the Steps in Addressing Site Contamination

There are both similarities and differences among the agencies that we have studied, in terms of their approach to the steps in environmental management. Every agency on which we conducted research has a process for identifying and investigating sites at risk for having on-site contamination (screening and assessment), though particular approaches vary in their details. Approaches vary to an even greater degree once contamination is found, and remediation and monitoring become possible requirements. These approaches are discussed below.

Box 1: Brief Review of Steps to Address Site Contamination

Section 2 of this report discusses how the development agencies manage contamination at a property. Most activities in this regard can be separated into the activities that are reviewed below. More detail can be found in the draft report for Task 1 of this study.

Screening –To determine whether further environmental investigation is warranted on a property, many organizations will conduct a brief review of relevant data that can be obtained without the expenditure of a great deal of resources. Such a screening may be part of the appraisal or underwriting process and is not necessarily carried out by a trained environmental professional. The screening helps to determine whether the services of such a professional are needed. The American Society for Testing and Materials (ASTM) has developed a document entitled "Standard Practice for Environmental Site Assessments: Transaction Screen Process (E-1528-00)," which some organizations use as guidance for how to conduct a screening. Other organizations, depending on the nature of their transactions, conduct Phase I assessments as their standard "screening" process, particularly on sites where there is considered to be a high likelihood of encountering contamination.

Assessment – If a screening determines that a site is at risk for contamination, additional testing is completed in order to determine whether contamination is present and to identify its nature and extent. If a Phase I assessment has not yet been completed, most organizations will conduct this step, which involves document research and a site survey. A Phase I is more likely to be conducted by an environmental professional than is the less-formalized screening that some organizations conduct. ASTM has developed a document entitled "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E-1527-00)," which many organizations use as their guide. If the Phase I indicates the need for further investigation, trained technical experts will collect samples of soils, surface water and/or groundwater at a site (depending on the results of the Phase I) and analyze the samples for evidence, extent and location of hazardous chemicals. ASTM has also elaborated recommended approaches to various elements of this level of site assessment, which are together called a Phase II assessment.

Remediation – When a site assessment indicates that contamination is present on a site, a plan is prepared for the removal, cleanup, or containment of the hazardous substances. Implementation of this plan is called "remediation." A wide variety of methods and processes are used. Decisions made regarding the approach to remediation on a specific site are based on: 1) the assessment of the level of risk at the site, which takes into account such factors as the type and extent of contamination, expected future use of the property, and proximity to people or natural resources; 2) applicable regulations, requirements and standards (federal, state and local); 3) available technology; 4) cost of various remediation options, relative to the revenue stream expected from the property; and 5) other factors.

Monitoring – If the remediation plan involves leaving contamination in place at the site (in the soil or groundwater), it is normal for monitoring to be required in order to assure that the contamination does not escape to surrounding environmental media where exposures to humans or ecological receptors could occur. The responsibilities and costs associated with maintaining and monitoring a site are ongoing, and it is normal for the owner of the site to carry them out, whether that owner was the cause of the original contamination.

3.3.1 Screening: Determining Whether to be Concerned

All development agencies studied, except for VA, require some sort of *screening* for hazardous waste, but they do so for different reasons and at different levels of intensity. By screening, we mean the first level of site investigation, whatever method is used.

Please view Table B below.

- *Agencies that are fully responsible*, due to their full ownership of the sites, will do a complete, and sometimes enhanced, Phase I assessment. BRAC and GSA are two examples. BRAC, as described in Section 2, completed the equivalent of two Phase I site assessments to identify contaminated sites at its facilities, and the GSA completes a Phase I as a part of the acquisition process.

- *Agencies for which there is a certain level of probability of owning sites* tend to conduct lower-intensity screening, such as an ASTM Transaction Screen for lower-risk sites, and Phase I analyses for higher-risk sites. Agencies who make this distinction include RHS, PNC, and Freddie Mac. RHS requires the developer or lender to conduct a Phase I for guarantees of multifamily properties and screening for single-family properties. PNC and Freddie Mac both require a Phase I for all loans of more than $1 million, and a screening for those under $1 million.

- *Agencies who perceive their risk to be low* require, at most, a low-intensity screening. EDA, which provides grants and has no potential for ownership of contaminated sites, requires the grantee to conduct a screening checklist, is one example. VA also perceives there to be very little environmental risk in its guarantees of single-family mortgages, and therefore does not have any formal requirements for screening or assessment.

In short, the more potentially liable an agency is to paying for cleanup costs, the more intensive its systems for environmental due diligence.

The overall lesson is that screening methodologies vary. Agencies do not even necessarily follow precisely the ASTM standards for the Transaction Screen and Phase I. Some of the agencies have regulations or guidelines that pre-date the creation of the ASTM standards. Others bundle ASTM-type site assessment approaches with other types of assessment.

3.3.2 Assessment: Determining the Extent of the Problem

If the first level of screening has indicated that there is potential contamination at the site, the agency will move to the next step, which involves assessing the nature and extent of the problem. All agencies, with the exception of the VA, will at that point require that some version of a Phase I assessment be conducted. For some agencies, with some sites, a Phase I will have already been completed. For others, the agency will require that a Phase I be completed before moving forward with its support of the development project. The agency will then have the best

information on whether the more information will be required from the more-costly elements of Phase II assessment.

All of the agencies studied require that a Phase II be completed in order to move forward, if the Phase I information warrants further investigation. Some agencies are straightforward in their approach; requiring the applicant to conduct a Phase II assessment based on the Phase I report, in compliance with state standards and in coordination with state regulators. Other agencies are more active. PNC's environmental services office has wide latitude to request that specific elements be studied. Those specifications are sometimes different than that which was indicated in the Phase I report. PNC takes into account that the consultant report may have biases due to PNC's policy that the consultant be hired by the applicant, whose interest may be in minimizing the amount of investigation and remediation to be conducted. PNC sometimes asks for more testing than what was recommended by the consultant. CHFA also considers whether it trusts the consultant's report. If it has worked with the consultant before and feels comfortable in general with its work, CHFA is likely simply to accept that consultant's recommendations. If the consultant is new to CHFA, the agency will apply careful scrutiny to the report, not always accepting the results and recommendations at "face value."

VA, again, applies pressure to its loan-guarantee applicant to choose another location, if further investigation is recommended in a Phase I report. If the applicant wishes not to change sites, VA will require that state, local or EPA oversight be involved. In general, once investigation at the level of Phase II is warranted, many of the studied agencies will establish relationships with state (or local) regulatory authorities to ensure that the site is safe.

3.3.3 Detailed Assessment and Remediation: Determining How to Proceed Once Contamination is Discovered

When a screening or assessment indicates contamination on a site, an agency's decision to require or invest in remediation is related to both the program's mission and its exposure to liability. The key variable in terms of the mission of the agency or program is whether it is tied to specific sites. BRAC program and environmental staff know which sites they need to manage and transfer. They also know that DoD is entirely responsible for all environmental issues encountered on the properties and that, as a public agency, they have a duty to disclose any relevant information. On the other hand, VA's mission is connected to the veteran, rather than to any particular site or home. As a result, there is no programmatic reason for VA to want to risk exposure to environmental contamination when there may be suitable clean options.

- *Agencies/Programs with site-specific missions,* such as BRAC and the GSA PBS, will invest in (or require investment in) further assessment and cleanup in order to fulfill their missions, when contamination is found on a site that is identified for development. These agencies are do, or are willing to, provide their own resources for assessment and remediation. (BRAC, DoD)

- *Agencies/Programs that engage in activities that would potentially expose them to environmental liability, but have missions that are not site-specific,* will tend to avoid any further activity on sites for which there is a risk of contamination. Our Freddie Mac

interviewee stated that that his organization "normally doesn't deal with sites that require remediation." These agencies do not share costs for cleanup or assessment. (Freddie Mac, VA)

- *Agencies/Programs whose program applicants are focused on specific sites and whose activities would expose them to liability* will tend to require a full Phase II assessment and, when necessary, full remediation in order to move forward with the transaction. For example, RHS requires a Phase II if the Phase I indicates there to be a need. The agency does not automatically reject a site if contamination is found, though it is likely to request that another site be found. If the applicant remains with the site, remediation would be required prior to RHS's funding the project. These agencies are willing, in specific cases, to share assessment and cleanup costs. (PNC, RHS, CHFA)

All of the organizations indicated that they remediate sites to a common standard process: they all defer to the regulatory agency. For the majority of sites, it is the state or local environmental/health agencies that approve cleanup plans and provide final environmental approvals for development projects. An interviewee from RHS said: "the program abides by the decision of the regulatory agency in determining when enough is enough. There will be some level of contamination, but the program relies upon the regulatory agency's decision about acceptable uses of the site." Cleanup levels vary, though, because local and state regulations vary.

Two of the interviewed public agencies (EDA and CHFA) highlighted the fact that they work hand-in-hand with state Voluntary Cleanup Programs to set cleanup goals and earn liability-release letters, which both certify that the site is sufficiently clean and protects the agencies from future liability claims for cleanup costs.

While agencies must *at least* meet the regulatory requirements, at least once business (PNC) does not necessarily accept those levels as sufficient. When PNC is not comfortable with the cleanup goals and analytic rigor of a particular state, it will ask that its loan applicants meet a higher standard. PNC defaults to the standard set by the State of New Jersey, whose cleanup standards PNC believes to be sufficiently protective because they are based on scientific rigor.

Institutional and Engineering Controls

All agencies studied that are willing to deal with the cleanup of sites are willing to accommodate engineering and institutional controls. Engineering controls allow contamination to remain in place and prevent or reduce exposures through the use of physical barriers or similar measures. Institutional controls are statutory, regulatory or contractual limitations placed on the use of land or resources. Some examples of institutional controls include zoning restrictions, easements and deed restrictions. It is common for these controls to be used together at contaminated sites. The integrity of engineering controls, for example, may need to be guaranteed by some form of limitation on land use.

As was discussed in the *Task 1 – Review and Assess State-of-the-Art, Risk-Based Cleanup Methodology,* policies in regard to the use of engineering and institutional controls vary widely

among programs and regulatory agencies. We found the same to be true for this Task 3 study. RHS, Freddie Mac, and the CHFA are more restrictive: they allow institutional and engineering controls on a case-by-case basis but are quite reluctant to do so. EDA is much more willing to accept these controls. It defers to state and local authorities to determine whether or not these controls are permissible, but permits them to be used if those regulatory authorities are satisfied. GSA PBS allows institutional and engineering controls on sites, "but we normally try to clean up as much of it as possible, and not leave any contamination in place," said an interviewee.

Fitness for Residential Use

Six of the development agencies included in this study – Veterans Affairs, the Rural Housing Service, DoD BRAC, PNC Bank, Freddie Mac and the California Housing Finance Agency – service residential sites. These agencies have differing approaches for determining whether a contaminated site is appropriate for residential use.

- *Veterans Affairs:* does not have any remediation standards; the interviewee stated, "the regulations for handling site contamination in our office are not really spelled out" and in practice the agency defers to the veterans' wishes and to guidance from the EPA and state/local authorities.
- *Rural Housing Service:* abides by the decision of EPA or the state regulatory agency regarding whether a site is "clean" and if housing is an appropriate reuse of the property.
- *DoD BRAC:* engages EPA and state/local authorities, as well as community stakeholders in its decisions. If regulators and the community approve the site being used for residential uses, DoD is satisfied.
- *PNC Bank:* abides by the decision of regulatory authorities but may require further work done, if it does not believe that the particular state is sufficiently protective.
- *Freddie Mac:* normally does not deal with sites that require remediation because these sites are usually "weeded out" and do not receive assistance.
- *California Housing Finance Agency:* defers to local authorities *and* also relies upon their own analysis to ensure that remediation was done properly.

3.3.4 Monitoring Contamination

For most of the agencies, with GSA as an exception, there is no long-term plan to own or operate sites in which they are involved. The agencies that acquire sites as a result of default seek to dispose of those properties as rapidly as possible. As discussed in Task 1, it is normal and logical for the owner/operator of a site to be responsible for assuring the continuance and integrity of any long-term monitoring plan. Monitoring is an ongoing and potentially expensive task. Development agencies that do not wish to own sites avoid responsibility for monitoring by either requiring a cleanup to "background" or requiring another party to conduct the monitoring. An interviewee from BRAC explained: "We prefer that the property manager should oversee (monitor) the site. We are responsible to meet the remedial objective; once this is complete, the transferee should take over."

- The GSA interviewee, however, explained that monitoring is sometimes an ongoing, demanding and unavoidable duty. He pointed out that Region 9 is monitoring 26 sites on an ongoing basis. Only four sites within the region are in the process of remediation under GSA's supervision.

Table B: Site Cleanup Process by Development Agency

	Economic Development Administration – Public Works and Economic Adjustment programs	Department of Defense – BRAC Program	Veterans Affairs – Home Loan Guaranty	Freddie Mac	California Housing Finance Agency	PNC Financial Services	General Services Administration – Public Building Service	USDA - Rural Housing Service
Transaction Studied	*Grants*	*Ownership and Disposition (Transfer).*	*Mortgage guarantees. Takes title through repossession .*	*Purchases mortgages from lenders and sells them as securities.*	*Loans and Guarantees. Takes title through repossession.*	*Loans. Takes title through repossession.*	*Acquisition, ownership and disposition.*	*Guarantees, loans and grants. Takes title through repossession.*
Screen	Requires a pre-application checklist; similar to a screening or shortened Phase I. Prefers that grantee pay, but will pay on occasion.	Conducts site investigations that are equivalent to Phase I assessments. Completed "scans" of all properties and researched the past uses of each site.	Does not require any screening or assessment.	Requires a document similar to a Phase I site assessment. Responsibility of lender or borrower to pay.	Requires the completion of a Phase I site assessment. Requires client (insured or borrower) to pay, but will pay on occasion.	Requires an environmental audit for loan applications over $1 million. Requires transaction screening analysis for smaller loans.	Generally requires seller to complete a Phase I site assessment. Will pay for a Phase I if necessary.	Requires a screening for single-family; a Phase I site assessment for multifamily guarantees. Will not pay for a Phase I.
Assess	EDA reviews the completed screening checklist and decides among one of the following: abandon the project, recommend that the project move forward (complete NEPA report), or request that more information be developed (Phase II assessment). Last step could imply a NEPA EIS.	Assessment is overseen by the individual services within DoD, and much of this work is contracted out to third parties.	Does not usually complete this step. Pressures recipients to choose clean sites.	If the Phase I indicates the need for Phase II investigations, the transaction will come to a halt. Freddie Mac will approve further work only if it does not appear that significant remediation would be necessary.	Follows recommendations of local or state regulatory agency. If a Phase II site assessment is necessary, first choice is for client to pay. CHFA will pay if necessary.	Requires more testing (soil and groundwater samples). Did not call it Phase II. Requires borrower to pay. PNC will review them to ensure completeness.	The assessment done by GSA varies according to the local environmental regulations. However, a Phase II site assessment will normally be completed if one is necessary.	A Phase II site assessment would be performed if the Phase I site assessment dictates the need for one.
Remediate	EPA or a local environmental authority prescribes how remediation should be handled. Remediation is handled on a case-by-case basis.	Remediation must be completed to levels that are set in restoration plans. The restoration plans are based on the future use of the site, and set the required levels for cleanups. DoD utilizes risk-based cleanup approaches within the CERCLA protocols, coordinating with EPA and state/local authorities.	Defers to EPA and local authorities.	Does not normally deal with sites that require remediation – only those where the remediation required is very minor.	CHFA provides the owner of the site with remediation guidelines, which are determined by state and local authorities, and tells the owner to clean it to that standard. CHFA then has experts determine if the cleanup standards were met.	Follows state environmental requirements; sometimes exceeds these requirements.	Follows state or local environmental regulations. In California, the county health department determines the degree of health protection. However, intended re-use of the site is also considered.	If a site must be remediated, it is likely that the client will find another site. However, program managers make such a decision on a case-by-case basis.
Monitor	Responsibility of grantee. EDA defers to state regulators. Will include monitoring plan in NEPA documentation.	BRAC or the transferee completes the monitoring requirements. DoD encourages the transferee to take on this responsibility.	Does not normally deal with sites that require monitoring.	Does not normally deal with sites that require ongoing monitoring.	Requires an Operations and Maintenance (OM) plan be put into place and followed.	Allowable on a case-by-case basis.	Defers to local requirements. Will do transaction on site that requires monitoring plan.	Tries to avoid projects that require monitoring.

3.4 Tradeoffs: Protectiveness, Timeliness, and Cost

In the ideal, environmental remediation on a property could be: 1) completely protective of human health and the environment; 2) conducted rapidly, so as not to cause delays in a development project; and 3) conducted at a minimal cost. In practice, there are trade-offs among these factors. It is frequently, though not always, the case that the more protective the remedy that is chosen, the more likely that the cost will be high and that the remediation will take a long time. Under this scenario, lowering the level of protectiveness offers the possibility of providing remediation at lower cost and more rapidly, which can facilitate success in development projects.

The development agencies we studied recognize the tradeoff involved. For the most part, however, the agencies choose to rely on the analysis of federal, state or local regulatory agencies rather than making internal calculations regarding these tradeoffs. Since regulatory authorities tend to accept risk-based approaches (e.g., remediation that takes into account intended uses, institutional and engineering controls), the development agencies tend to do so as well. When agencies are reluctant to accept such approaches or when they choose to be more stringent than a state or local authority, they are being protective of their financial interests rather than being concerned about the level of human-health protectiveness. This generalization is true of PNC, Freddie Mac and VA, all of whom do not necessarily conduct business on a site simply because a regulatory authority has approved the site.

3.4.1 Health Protectiveness vs. Timeliness

Real estate development projects can be complex transactions and frequently depend on timing. Private developers report that, for many reasons, significant delays can make the difference between a project's success and its failure. One of the problems that addressing environmental contamination can bring is that it can significantly slow down a project. For agencies whose mission is to facilitate development, one might speculate that they would be willing to sacrifice some protectiveness so as to bring about development.

In our review of documents and interviews, no agency was willing explicitly to make such a tradeoff. For the most part, the public agencies are not working with development projects that are as time-sensitive as projects financed purely through private sector resources. At the extreme, a "fast-track" GSA development takes 6-7 years to construct, while some projects take as many as 13 years or more. An interviewee from BRAC reported that it usually takes 12-16 years to complete remediation and transfer to each community for installations in the Defense Environmental Restoration Program (DERP).

Our interviewees from the private sector, PNC and Freddie Mac, are similar in not making this tradeoff. Their financial and liability concerns are such that they indicated no willingness to "cut corners" on their due diligence processes in order to speed up development. PNC's Vice President for environmental services indicated that not even the loan officers, whose jobs are to facilitate making loans, ask for such a tradeoff to be made. They understand that it is in PNC's and their own interests not to make loans unless the property is environmentally safe.

Agencies do, however, make accommodations within their processes that may result in faster execution, without trading off protectiveness. EDA, for example, is willing on occasion to

approve funding on a project before remediation is complete, as long as the state authority has approved the cleanup plan. PNC, GSA, CHFA and EDA are all sometimes willing to participate in financing the cleanup, as long as there is approval of the approach. PNC is willing to accept an alternative property or source of cash as collateral, if the developer is unable to clean the development property.

On the other hand, there are agencies that, implicitly, are trading off health protectiveness for speed. Any property where development is permitted with contamination left in place could be seen as having sacrificed health protectiveness for some other value. Most of the agencies studied permit this approach on occasion. A conventional example would be on a site where the property is cleared for development despite the groundwater remaining contaminated. While development moves forward on the site, the owner/operator may be required to maintain a "pump-and-treat" system on the property, which could operate for many years while the groundwater remains contaminated. In this case, there may be an accompanying institutional control prohibiting the use of the groundwater for drinking water. There may also be an engineering control, perhaps in the form of a physical barrier that would prevent the site from coming into contact with the groundwater. Requiring complete no-risk health protectiveness might prohibit any development to occur until there was complete cleanup – which could be 20 years later. In general, both development agencies *and* regulators are willing to accommodate alternative approaches as long as they can be show to be safe using risk-based-cleanup techniques.

3.4.2 Health Protectiveness vs. Cost

Costs for managing site contamination can affect an agency in two ways: 1) as a direct cost, if the agency is directly liable or responsible for the site; and 2) indirectly, if the cleanup costs have a negative impact on the development project that the agency would be financing. In both cases, agencies might have an incentive to minimize cleanup costs. None of the interviewees were able to give an estimate of "typical" cleanup costs because either they do not track costs (when agencies are not directly responsible for cleanups) or "there is no typical site" (BRAC). All interviewees indicated their belief that the level of health protectiveness required is a key input on overall cleanup costs, but also indicated that the goal of minimizing costs is secondary to protecting health.

Nonetheless, agencies studied *are* willing to lower the cost burden of cleanup by accommodating non-background remediation approaches. For those agencies that have site control and primary responsibility for cleanup (BRAC and, sometimes, GSA), those decisions are made in concert with the regulatory agency. For those agencies that do not have site control, those decisions are made indirectly, by simply accepting the decisions of regulatory authorities.

All organizations complete (or require that applicants to their programs complete) the necessary steps to achieve the standards set by regulatory authorities. To the extent that those authorities are willing to permit less-costly approaches, most agencies would do the same.

3.5 Clarity and Consistency

Interviewed agencies reported that they believed there processes and procedures to be easy to understand. In contrast, several interviewees indicated that consistency in implementing policies across field offices was a challenge. They also reported that it is common for headquarters personnel to agree on how policies and procedures should take place, but that this agreement was not always coordinated with personnel in the field who would need to implement the policies. GSA, for example, indicated that the combination of its decentralized organizational structure and its lack of formal site contamination policies and procedures has permitted the regional offices to have very different procedures. Our interviewee indicated that he would like GSA to improve its structures and policies, because he was unsure how each region was completing federal, state and local requirements and whether their approaches were adequate.

AT BRAC, achieving consistency offers unique challenges due to the unique organizational structure of DoD. BRAC's office at the Pentagon oversees policies, sets the program budget and interacts with other programs and agencies. However, this headquarters office is not specifically responsible for the cleanup and transfer of any federal facilities. Instead, each DoD service that is transferring sites – Army, Navy, and Air Force – has its own set of policies, which are based on the framework set by headquarters.

3.6 Hot-Button Issues from Interviews

When queried about "hot button" issues and policies that they would change, many interviewees reported very specific issues. Areas cited included topics that are not necessarily part of the CERCLA hazardous waste spectrum -- radon, asbestos, lead-based paint, and underground storage tanks. Other organizations cited some of the most difficult issues in the environmental industry as issues that they would like to have addressed. These issues included determining "how clean is clean" when using risk-based cleanup (DOD) and who should pay for cleanup costs (EDA).

BRAC also has concerns that come from its policy of soliciting stakeholder/community input on its cleanup and reuse plans. The BRAC program includes very detailed plans to involve the public and local governments in the transfer process. As a result, the department receives feedback on future use and cleanup plans, including target cleanup levels. "There are issues of concern surrounding risk-based cleanup from various groups. They feel that the department is saving money by utilizing risk-based cleanup, and that the money that is saved should be directed to their local causes." A BRAC interviewee indicated that local communities can feel "short-changed" when the cleanup standards are not as protective as they would like; and then "insult is added to injury" when any ongoing monitoring, and its associated costs (necessitated by the risk-based approach), is left for the communities to cover.

3.7 Providing Guidance To Staff

Some development agencies (Freddie Mac, RHS, BRAC) use handbooks to describe the procedures that their staff should employ. Handbooks can include worksheets and checklists to guide staff through the process of managing a contaminated site. For example, EDA's guidance

handbook includes a checklist for screening sites, which guides staff through key questions regarding a site. Similarly, the RHS program for single family housing has a Transaction Screen Analysis questionnaire developed by ASTM (HB-3550), which guides a lay person through the screening. RHS pays ASTM a fee to use this tool.

Some agencies provide training sessions to staff on specific site contamination topics and issues. In this way, staff can be informed of state-of-the-art practices, agencies can do better at ensuring consistency among regions, and agency staff can be better acquainted with 'hot button' issues facing field staff. Interviewees from BRAC, Freddie Mac, PNC and RHS indicated that their staff has the opportunity to receive such training. For example, the RHS makes a point of providing training sessions to all field staff on ASTM practices, environmental issues, NEPA, and hazardous wastes. Similarly, PNC ensures that account officers receive training to screen loan applications for contamination issues.

3.8 Coordination with Other Organizations

All agencies coordinate with other agencies in order to conduct their environmental reviews effectively. Coordination is most likely to be with EPA and state or local environmental regulators. Depending on the transaction, coordination may also occur with local development agencies and private developers. Each agency – be it the development agency, EPA, or state or local regulators that administer zoning and health requirements – oversees a different piece of the development process. These agencies must work together to ensure that requirements are met, plans are realistic, and that all the interdependent pieces are in sync.

Coordination is especially important for the agencies such as the California State Housing Finance Authority, General Services Administration and Veterans Affairs that offer their employees no official agency guidance on how to provide services to contaminated sites, and instead require them to follow city, county, and state requirements. For example, staff at a GSA regional office reported:

"There is no national GSA-specific cleanup policy. It is up to each individual region to use the local and state regulatory agency to find out what the current laws are, and abide by them. For example, in California, environmental policy is developed at the county and city levels, so GSA follows their requirements for cleanup. However, in a state like Nevada, GSA simply complies with the Federal EPA-given laws, as that is what Nevada uses. GSA does not develop their own set of regulations. GSA does not amend any state or federal policy; they simply comply with them."

	Economic Development Administration	Department of Defense - BRAC Program	Department of Veterans Affairs	Freddie Mac	California Housing Finance Agency	PNC Financial Services	General Services Administration	USDA - Rural Housing Service
Degree of Health Protection	Set by EPA or local government.	Uses the CERCLA response process and site-specific remedial design based on CERCLA standards. Willing to accept risk-based standards, in part because it helps to keep costs reasonable.	Has no policies of its own. Relies on state/local or EPA standards for its Home Loan Guaranty program.	Uses state and federal regulations to determine the degree of health protection required. (Sometimes has an even higher standard to protect its portfolio from financial risk.)	State or local health/environment standards are implemented, in consultation with the independent environmental consultants who conduct the studies and remediation.	Follows the applicable state regulations, but sometimes uses stricter standards. If PNC thinks state is not sufficiently strict, it will default to New Jersey's more-stringent standards.	Defers to the state or local environmental regulator. In California, the county health departments are the local authorities.	Defers to state/local authorities or EPA.
Timeliness	Site contamination increases the amount of time it takes for EDA to complete approval of funds for a project.	Intends to have all facilities remediated and transferred by fiscal year 2005. The typical cleanup lasts 12 to 16 years. DoD considers timeliness to be secondary to health protection.	Timeliness of remediation is not a concern.	It is rare for a contaminated site to be approved for a loan. Therefore, Freddie Mac does not generally deal with issues surrounding timeliness.	CHFA works with sites that have been remediated or are currently undergoing remediation. It does not control the timeliness of a cleanup. Local regulators are in charge.	It is rare for PNC's requirements to slow down the development process. A large cleanup project will delay development, but the state (not PNC) is usually responsible.	Since site remediation is dependent on Congress for funding, the process cannot be considered timely. Furthermore, politicians are always getting involved, thereby slowing the entire process down. GSA does not trade off health protection to get a more timely completion.	No comment.
Cost	EDA is willing to accept risk-based standards in order to save costs, if the regulator accepts the approach to remediation. EDA sometimes also shares cleanup costs. EDA does not usually pay for site, but will do so on a case-by-case basis.	DoD believes that by utilizing risk-based cleanup, instead of cleaning to pristine, that costs are reasonable.	The borrower pays for all remediation costs.	It is rare for a contaminated site to be approved for a loan. Therefore, Freddie Mac does not generally deal with issues surrounding cost. It is unlikely, however, that Freddie Mac would trade off protectiveness for cost.	The borrower pays for all remediation costs. Cost-effectiveness is not a concern to the agency.	PNC is usually more interested in protecting itself than in permitting a borrower to cut costs on remediation. It sometimes requires work in addition to what a state requests or what a Phase I recommends. Borrowers usually pay all costs. Cleanup must be a small part of the overall project.	GSA's site remediation approach is not a cost-effective process. Studies are constantly being repeated and performed when they are not required. Their projects can be very political.	Not concerned with cost. The borrower pays for all remediation costs that bring the property to state/local/EPA standards.

SECTION 4. THE ENVIRONMENTAL PROTECTION AGENCY (EPA)

The mission of the Environmental Protection Agency (EPA) is to protect human health and to safeguard the natural environment. It works with partners at the federal, state, local and tribal levels, and with non-governmental partners to develop and enforce regulations under existing environmental laws. EPA's mandate includes ensuring that other agencies, including HUD, comply with federal environmental laws.

Why EPA is Relevant to this Study

- EPA's approach to managing environmental risk, including risk-based cleanup, can serve as a guide for HUD. (This topic is covered in Task 1).
- EPA plays an oversight role with respect to other federal agencies, such as HUD, that own or manage sites that expose those agencies to environmental responsibility and liability.

Unlike the other agencies that are included in Task 3, EPA neither has a development mission at its core nor does it own contaminated sites. EPA's relevance to this study falls primarily in two areas:

- HUD can use EPA's approach to cleanup standards and methodologies, including risk-based cleanup, as a guide for its own policies and procedures. (This topic was discussed in the Task 1 report).
- HUD seeks a better understanding of EPA's role with respect to other federal agencies, in the particular context of HUD's potential role as an owner of sites with environmental contamination.

Task 3's coverage of EPA focuses on the second area - understanding EPA's role with respect to the facilities of other federal agencies. It discusses EPA's approach to properties owned by federal agencies, including EPA's views on institutional controls. This section is relevant only for those sites for which HUD has the potential to be the owner (FHA-insured mortgages). We include a discussion of EPA's role in enforcement of site contamination laws with other federal agencies, as well as EPA's potential role in providing assistance to HUD.

4.1 EPA Offices with Roles in Federal Facilities

More than ten offices at EPA, plus the ten regional EPA offices, are involved in some way with federal facilities. The June 1997 EPA document, *Fitting the Pieces Together: EPA Offices Involved in Federal Facilities Cleanup and Reuse*[137], provides guidance to federal agencies and others regarding the roles that the offices play. The EPA offices that are most involved in activities with federal facilities are the:

- *Federal Facilities Restoration and Reuse Office(FFRRO):* This office works with DoD, DOE, and other federal entities to help them develop solutions to their environmental problems. FFRRO's overall mission is to facilitate faster, more effective, and less costly cleanup and reuse of federal facilities.[138]

[137] U.S. EPA, *Fitting the Pieces Together: EPA Offices Involved in Federal Facilities Cleanup and Reuse*. P. 2.
[138] FFRRO is an office within EPA's Office of Solid Waste and Emergency Response (OSWER), which oversees the major cleanup programs with respect to hazardous waste.

- *Federal Facilities Enforcement Office (FFEO):* This office is housed within EPA's Office of Enforcement and Compliance Assistance (OECA), and contains the EPA programs and staff that ensure that federal agencies take all necessary actions to prevent, control, and abate environmental pollution on their facilities. FFEO develops national policy and guidance for enforcement and compliance with respect to federal facilities while, at the same time, overseeing enforcement activities against federal agencies undertaken by the EPA regions.[139]

- *Office of Emergency and Remedial Response (OERR):* This office oversees the Superfund program, in partnership with states and tribes. It implements legislation by facilitating the cleanup of properties contaminated by materials regulated under CERCLA. OERR provides technical guidance to private and government parties on conducting cleanups, including at federal facilities. It has also developed extensive technical guidance related to site assessment and remediation.

- *EPA Regional Offices:* The regions play a key role in providing regulatory and technical oversight of cleanups, promoting community involvement, managing enforcement programs, and other tracking and planning activities.

ICF reviewed documents from these offices and interviewed a total of five employees: two from OERR, two from FFEO, and one from FFRRO. EPA regional offices were interviewed as part of Task 1.

The vast majority of federal sites where cleanup will be required are with (1997 estimates):

- DoD – an estimated 26,000, estimated cleanup costs of $30 billion.
- DOE – an estimated 10,000 sites, estimated cleanup costs of $200-350 billion
- DOI (Interior) – an estimated 26,000 sites, estimated cleanup costs of $4-8 billion. (DOI sites tend to be abandoned mines, landfills, and oil and gas production facilities.)

The scale and scope of the required cleanups for DoD and DOE, in particular, are so large that the EPA offices that are devoted to federal facilities, such as FFEO and FFRRO, tend to focus almost all of their attention on these agencies. As a result, the issues of HUD and other civilian agencies receive far less attention.

4.2 EPA's Role in Enforcement, Oversight and Encouraging Compliance by Other Federal Agencies

EPA's Federal Facilities Enforcement Office (FFEO) ensures that federal agencies comply with federal environmental rules. It conducts random inspections, offers incentives to federal facilities, responds to public requests or inquiries about specific locations, and answers questions and reviews documents from federal development agencies. As stated above, FFEO's primary focus is on DoD and DOE facilities.

[139] FFEO is an office within EPA's Office of Compliance and Enforcement Assurance, which has the primary responsibility within EPA of ensuring compliance with national environmental laws.

According to the Acting Director of Site Remediation and Enforcement Staff, FFEO has the authority to sue other federal agencies and take them to administrative court, where they are tried before a judge who can assess penalties. It has done so with civilian agencies. In order to avoid this process, FFEO has established a framework in which an agency can conduct its own internal audit. If the agency discovers violations, and reports them promptly to EPA, FFEO will waive the penalty or fine. This approach is applicable to HUD.

In general, FFEO strongly promotes voluntary compliance by federal agencies. One of the ways that it does so is through its publication "*FedFacs, An Environmental Bulletin For Federal Facilities,*" which can be found at http://es.epa.gov/oeca/fedfac/ann/index.html. FFEO uses this newsletter to communicate to federal agencies on various aspects of compliance with environmental regulations. A regular theme of *FedFacs* articles is of a federal agency achieving successful environmental results through a voluntary process (e.g., the Veterans Administration complying with regulations on Underground Storage Tanks).

FFEO has also produced "The Yellow Book: Guide to Environmental Enforcement and Compliance at Federal Facilities." Originally published in 1988, it was updated in 1999. It can be found at http://es.epa.gov/oeca/fedfac/yellowbk/index.html. This same Web site states that "The Yellow Book's primary purpose is to provide individuals with Federal Facility environmental responsibilities with an informational tool to help comply with environmental requirements and to clearly explain the compliance and enforcement processes used by EPA and States at Federal Facilities." The Yellow Book identifies various categories of federal facilities, including those that are or were government-owned/government-operated, government-owned/privately-operated, privately-owned/government-operated, leased from the government, and more. It may be useful for HUD to enter into conversations with FFEO to delineate which HUD-owned properties would be classified as federal facilities, and would therefore fall under the jurisdiction of FFEO.

4.3 Institutional Controls on Government-Owned Sites

Regarding the transfer of federal facilities, EPA is struggling to find an approach that is comfortable with respect to institutional controls. In 2001, EPA sponsored two national workshops/meetings on institutional controls which were attended by many agencies and other interested parties to discuss opportunities and challenges. OSWER sponsored these meetings because institutional controls arise in many contexts, which include the transfer of federal facilities, Superfund cleanups, RCRA, brownfields, and more.

That EPA has not yet arrived at strong conclusions in this area is supported by its draft not-yet-finalized guidance, available on the Web, entitled: "Institutional Controls and the Transfer of Real Property under CERCLA Section 120(h)(3)(A), (B) or (C)." The purpose of the guidance is to establish "criteria for EPA to evaluate the effectiveness of institutional controls that are part of a remedy or are a sole remedy for property to be transferred subject to CERCLA Section 120(h)(3)(A), (B) or (C)." The document "does not address the issue of whether an institutional control is appropriate for a particular site. That decision is made as part of the remedy selection process." The guidance "also does not change EPA's preference for active and permanent

remedies as stated in CERCLA section 121…" In other words, EPA is still in the process, itself, of establishing criteria to judge whether an institutional control is effective.

Furthermore, EPA and others are still working to arrive at a consistent definition of institutional controls. It has defined them as "non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use."[140] In that same document, however, there is a "sidebar" text box entitled "Common Misnomers," in which EPA calls for more careful use of terms (e.g., "deed restrictions) and a more accurate understanding of what institutional controls are and what they are not (e.g., EPA does not consider a physical barrier such as a fence to be an institutional control).

EPA interviewees stated that the use of institutional and engineering controls on residential sites is a divisive, complex and controversial issue. They offered to assist HUD and other development agencies to write policies in this area. In the context of transferring a federal site to local control, several interviewees disliked the use of these controls on such sites. Those sites often become the responsibility of a local government that has limited ability to enforce and monitor those controls properly. Interviewees admitted, however, that it was "sometimes unavoidable" to use these approaches. One example would be when the cleanup costs for a very desirable site would be prohibitive, if cleanup-to-background were the requirement.

An interview with an EPA point-of-contact on institutional and engineering controls explained that development agencies should analyze these controls in residential settings on a case-by-case basis. He did cite one residential setting where he thought that, in general, institutional controls would be acceptable - on residential sites under which there is groundwater contamination that is not being used as drinking water, because the local source of drinking water is clean surface water. The institutional control in this case would be to restrict the use of the groundwater on the site, in the process of permitting the residential development to occur.

Task 1 includes more detail on institutional and engineering controls, in the context of the discussion of risk-based cleanup. The key point for this section is that EPA enforcement staff does accept, albeit grudgingly, the use of institutional controls in residential settings, on a case-by-case basis; and does so in the context of the transfer of federally owned property.

4.4 EPA as a Resource for HUD on Environmental Matters

With its 18,000 engineers, scientists, and environmental protection specialists, EPA could serve as a powerful resource to HUD.

Policy Development

[140] U.S. EPA, "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups." OSWER 9355.0-74FS-P, EPA 540-F-00-005. September, 2000. http://www.epa.gov/superfund/action/ic/guide/guide2.htm.

Through its Superfund program, EPA manages the cleanup of the nation's most hazardous contaminated sites. EPA has therefore developed resources and protocols that support cleanup. Resources, which are detailed in greater detail in Task 1, include the National Soil Screening Guidance, Risk Assessment Guidance, and Ground Water Guidance. EPA interviewees stated that HUD could use these guidance documents as the basis for the development of cleanup standards for residential sites that would permit HUD to take risk-based approaches. They also suggested that EPA staff could work with HUD (and any other federal development agency) to adapt these resources into tools or methodologies that could be used by HUD staff, according to their level of training.

Technical Assistance

EPA staff also identified several ways that EPA could provide technical assistance to HUD.

- *Technical Consultations:* EPA implements and oversees CERCLA and other environmental laws. When HUD has questions regarding these laws, staff at EPA are available to provide answers and to resolve outstanding issues.

- *Training Sessions:* EPA staff could provide training sessions to HUD in order to ensure that HUD staff fully understands federal environmental requirements. It could also help HUD to be more able to review Phase I and Phase II assessments.

- *Environmental Management Reviews:* Performed by a team of experts who will visit a particular facility that is owned by the federal government, an environmental management review will review environmental records, talk to facility personnel, and help the facility to ensure that it complies with federal practices. Such a review is more likely to be relevant for industrial facilities, which HUD does not own; but it could potentially be relevant for large multi-family residential properties.

Provide Networking Opportunities

EPA can connect HUD to organizations and groups that also manage processes involving hazardous materials. Interviewees identified four opportunities, two of which have already been mentioned in this section:

- *Compliance and Regulatory Enforcement Listserv* is a free listserv that is sponsored by the EPA. Members receive updates and reports environmental issues that affect federal agencies.

- *Executive Order 13148 Interagency Workgroup* meets every six to eight weeks. It is comprised of federal agencies that must manage environmental issues such as environmental audits, pollution prevention, toxic chemicals, hazardous substances, reducing ozone-depleting substances, and environmental landscaping.

- *The Association of State and Territorial Solid Waste Management Officials* has a series of national and regional meetings and committees to discuss state hazardous waste, non-hazardous solid waste programs, cleanup programs, and underground storage tanks, among other issues.

- *Interagency Workgroups on Institutional Controls* has several groups in the Washington, DC area that meet regularly to discuss various topics related to institutional controls. The Office of Emergency and Remedial Response coordinates these workgroups.

SECTION 5. CONCLUSION

5.1 Summary of Major Findings

Framework for Addressing Site Contamination

The development agencies studied conduct environmental due diligence, but not for the same reasons. Except for EPA, the agencies or programs studied do not have environmental protection as part of their core missions. The key reasons that agencies conduct environmental due diligence is that, depending on the details of the program activity, they:

- Are required under NEPA to monitor and mitigate the environmental impacts of their actions;
- Are concerned that site contamination will have negative impacts on the financial conditions of their transactions.
- Are concerned about their own liability under CERCLA and other federal/state laws and regulations; and/or
- Have an ancillary element of their missions that includes assuring that their developments are "safe and sanitary," that neighborhoods are safe, or something of a similar nature.

The key guiding influence on the environmental management framework for each agency or program is the nature of the transactions in which they are engaged. Agencies/programs studied are involved in grants, direct loans, loan guarantees, acquisition of properties, and disposition (sale) of properties.

- Grants rarely place an agency at risk of liability. Grant-making programs tend to monitor projects for compliance with NEPA.
- Programs that provide direct loans or loan guarantees have more rigorous approaches to screening and assessment. They are concerned that site contamination could have a negative impact on 1) the financial health of the project and the related ability to repay the loan; 2) the value of the collateral, should the borrower default; and 3) the liability exposure of the agency, should it repossess a contaminated site.
- Programs in direct ownership of sites have fully rigorous approaches.

It can be quite appropriate for a single agency to have different processes for addressing site contamination, if it has programs that are very different. Agencies conduct their environmental due diligence according both to the needs of the particular program as well as to the environmental risks and responsibilities that the activities generate. For example, the Department of Veterans Affairs (VA) has a far more detailed and elaborate approach to environmental management when it is developing facilities that it will own and operate (e.g., VA hospitals), than when it is guaranteeing mortgages for single-family homes and perceives there to be very little risk/liability to itself.

All agencies need to, and do, coordinate with other agencies in order to conduct their environmental reviews effectively. Coordination is most likely to be with EPA and state or local

environmental regulators. Depending on the transaction, they may also coordinate with local development agencies and private developers.

For most contaminated sites and for most development agencies, *state and local environmental regulatory agencies have primary day-to-day influence in decisions regarding remediation, including the process and the standards.*

Development agencies differ in their approaches to providing guidance to staff. Some use regulations, others have detailed handbooks, and some do not provide any written guidance at all.

Process for Addressing Site Contamination

All development agencies studied (except for VA in its guarantees of single-family mortgages) require some sort of screening or assessment for hazardous waste, but they do so for different reasons and at different levels of intensity. The more potentially liable/responsible an agency is, the more intensive is its systems for environmental due diligence. An agency's decision regarding whether to require or invest in further assessment, once an initial screening indicates the possibility of contamination, is related to both the program's mission and its exposure to liability.

Similar to assessment, agencies whose missions and potential for (or existing) liability places them fully responsible for the site will require remediation, rather than avoid the sites entirely. The DoD BRAC program must, by law and program mission, address the sites that DoD owns, irrespective of the level of contamination. In contrast, Freddie Mac attempts to avoid sites that require remediation.

All agencies studied that are willing to deal with the cleanup of sites are willing to accommodate engineering and institutional controls. RHS and Freddie Mac attempt to avoid sites needing any type of cleanup and, as expected, are reluctant to work with sites where there are engineering or institutional controls. All other agencies, including those (such as PNC and GSA) that take title to properties and are financially responsible for sites, do support development on sites where there are such controls.

In interviews, all agencies indicated that health protectiveness is a higher priority than minimizing the amount of either time or cost in the remediation of a site. No agency, including the private businesses, indicated concerns about the time that cleanups take. Regarding cleanup costs, some agencies did note that the costs of overcoming environmental obstacles do prevent certain projects from continuing, but no agency indicated a willingness to compromise its standards for health protectiveness in order to be able to facilitate a project's being able to move forward. Nonetheless, *the fact that they permit use of engineering and institutional controls, as well as other risk-based cleanup techniques, indicates that they are implicitly willing to make such tradeoffs.*

EPA has no prohibition on the use of institutional and engineering controls at residential sites, and has overseen such controls being used on many occasions. Nonetheless, EPA interviewees indicated that staff opinion is mixed and consider it to be quite a controversial topic. Some staff

members believe that their use reflects a compromise on health protectiveness to save on project costs. Others believe that they can be sufficiently protective.

Agencies minimize costs to <u>themselves</u> by not assuming responsibility for sites for which 1) no laws or regulations require them to do so, or 2) there is no liability implication of their actions. That responsibility is left to the site owner or responsible party.

EPA plays the following key roles with respect to development agencies:

- It is involved as a *regulato*r in cleanup decisions at the sites that present the highest risk, such as many DoD sites.
- It is an *information resource for decisions on individual sites*, when states or federal agencies need guidance.
- It is a resource for information on policy and process.

SECTION 1. INTRODUCTION TO TASK 4

The objective of Task 4 is to discuss the similarities and difference between the policies and procedures of HUD with respect to toxic contamination, which was the focus of Task 2, and those of the agencies discussed in Task 3. ICF's assumption for this chapter is that the reader has familiarity with Tasks 1-3.

1.1 Organization of the Report

This chapter is organized in the following manner. Section 1 provides a summary of the overall study, and of this document's role in the study. It also provides a brief review of how the agencies were selected for the Task 3 report. Section 2 discusses how the context for an agency can be a key determinant of that agency's approach to managing site contamination, with specific relevant examples from this study. Section 3 provides agency-by-agency comparisons with relevant programs and policies of HUD. Section 4 summarizes the elements of these comparisons that are most important to this study. Section 5 discusses the next steps for the study.

1.2 Brief Review of Agencies Selected for Task 3

To select the development agencies for inclusion in Task 3, ICF first worked with HUD staff to identify both the *substantive areas* and *relevant program activities* within HUD for which it is important to find comparisons of environmental policy.

With respect to the substantive area, it was required that an agency, whether in the public or private sector, be involved in:

- The provision of *affordable housing*, or
- Promoting *economic/community development*.

Within these substantive areas, it was required that each agency be engaged in at least one of the following relevant program activities that are related to of real estate:

- Provides grants for development to states, cities and tribes
- Insures/guarantees or provides direct loans that support development
- Acquires properties
- Sells properties (or disposes of them in some manner)

The final list, as decided by HUD and ICF, included eight organizations. Five of these "development agencies" are federal agencies or, to be more precise, specific offices or programs of federal agencies. Other development agencies studied include a government-sponsored private company, a state program and a private financial-services company. The organizations are:

- Department of Defense (DoD) - Base Realignment and Closure Program (BRAC)

- Department of Commerce (DOC) - Economic Development Administration (EDA)
- General Services Administration (GSA) - Public Buildings Service (PBS)
- Department of Veterans Affairs (VA) – Office of Home Loan Guaranty
- Department of Agriculture (USDA) - Rural Housing Service (RHS)
- Freddie Mac
- California State Housing Finance Agency (CHFA)
- PNC Financial Services (PNC)

The following chart categorizes the selected development agencies into the substantive areas.

Table A – Criteria for Selecting Development Agencies

	Types of Transactions			
	Grants	**Insures / Guarantees or Provides Direct Loans**	**Acquires Properties**	**Sells / Disposes of Properties**
Affordable Housing	HUD RHS	HUD RHS VA CHFA PNC Freddie Mac (indirectly)	HUD RHS VA GSA EDA CHFA PNC Freddie Mac	HUD BRAC RHS VA GSA EDA CHFA PNC Freddie Mac
Economic/Community Development	HUD EDA BRAC	Not relevant to HUD		

SECTION 2. SIMILARITIES AND DIFFERENCES IN CONTEXT

2.1 Context Matters

The development agencies and programs selected for comparison with HUD were selected based on their similarities with HUD in terms of both substantive area and program activity. The purpose of this comparison is to explore whether the approach (or approaches) taken by the comparison agencies can provide lessons for HUD. Those lessons can take the form of:

- Approaches that HUD could emulate
- Approaches that HUD should avoid
- Principles of action that can be emulated, even if the implementation is greatly modified.

It is obvious, though still worth stating, that none of the comparison agencies or programs is exactly the same as HUD. Each agency has its unique circumstances that provide context to its approach or approaches to managing site contamination. That context is connected to the reasons that agencies conduct environmental reviews and manage site contamination.

Public and private agencies conduct environmental reviews because of:

- Regulatory requirements
- Financial Risk
- Mission
- Public Relations

Agencies, private and public, are affected differently and have different needs regarding these factors. For this study, it is important to recognize the similarities and differences that the agencies have with HUD with respect to these reasons for conducting environmental review. In this section, we discuss the role that the first three of these factors play and how they can vary.

2.1.1 Regulatory Requirements

All federal agencies are required to comply with the National Environmental Protection Act (NEPA). For our study, NEPA affects HUD, EDA, RHS, GSA, BRAC, and the VA. CHFA must comply with the California equivalent of NEPA, the California Environmental Quality Act (CEQA).[141] Complying with both NEPA and CEQA involves conducting environmental review on investments and activities that have the potential to have a significant impact on the environment and/or public health. All of the agencies studied have developed relevant implementing regulations and processes, which provide the overall framework for their environmental activities.

[141] http://ceres.ca.gov/ceqa/

These agencies must also comply with other relevant environmental legislation, such as CERCLA, the Clean Water Act, the Safe Drinking Water Act, RCRA, and others. CERCLA is of particular importance for this study, as it governs remediation of hazardous waste. US Code, Subchapter 1, Section 9620 (which corresponds to CERCLA Section 120(h)) governs remediation of federal facilities. Under Section 9620, "Each department, agency, and instrumentality of the United States (including the executive, legislative, and judicial branches of government) shall be subject to, and comply with, this chapter in the same manner and to the same extent, both procedurally and substantively, as any nongovernmental entity, including liability under section 9607 of this title."

Freddie Mac and PNC, as private for-profit entities, are not required to conduct equivalent NEPA- or state-driven environmental reviews. There is no requirement that they provide documentation that their investments in development do *not* have a negative environmental impact. They simply need to ensure that their activities are consistent with the federal, state and local environmental laws that regulate private entities. Relevant federal laws include CERCLA, the Clean Water Act, the Safe Drinking Water Act, and the Clean Air Act.

Federal agencies must also be aware of state and local requirements, even though they are regulated at the federal level. For example, since HUD's development partners (local and state governments, as well as private investors) are also responsible for complying with state and local environmental regulations, HUD projects must also be compliant with these regulations. HUD staff members who are responsible for ensuring that projects are in compliance with environmental regulations therefore coordinate with state and local officials to ensure compliance with state and local regulations.

2.1.2 Financial Risk and Liability

The approach to site contamination that an agency, in the public or private sector, takes is determined in large measure by the contamination-driven financial risk to which it is exposed. Although all of the programs and organizations studied in Task 3 are involved in financial transactions of some sort, the financial risks to which the organizations are exposed are not the same. It is important to distinguish among the types of financial risks to which organizations can be exposed, based on the types of transactions in which they are engaged.

In general, providing loans or mortgage insurance exposes agencies to far more financial risk from environmental contamination than does providing monetary grants. For grant-giving agencies (e.g., EDA, HUD's CDBG program), exposure to contamination-driven financial risk is related purely to whether it has complied with the procedures under NEPA and other statutes and whether it will be held liable in some manner for procedural errors. As long as programmatic regulatory procedures have been followed, there tends to be no financial risk related to the financial transaction.

When an agency provides loans or mortgage insurance, however, environmental contamination and the attendant potential costs can affect and agency financially in the following ways, as discussed in greater detail in Task 3:

- *Failure of the project, affecting repayment* – If contamination on the property requires high cleanup costs, the economics of the project can be adversely affected, which may be detrimental to the developer's ability to repay the loan.

- *The property as undesirable collateral* – In most real estate loans, from either a public or a private institution, the property for which the loan is made serves as the collateral; and the lender reserves the right to repossess that collateral if the borrower fails to make scheduled loan repayments. If, however, a site is contaminated and must be cleaned up, the true value to the lender of that collateral is reduced by those cleanup costs.

- *Potential for liability, as owner or manager of the property* – If a lender/guarantor repossesses property due to default on a loan and the property contains contamination, under CERCLA the lender becomes liable not only for cleanup costs but also for any injury or damage that results from the contamination.

Agencies/programs of this study for which these risks are relevant include HUD FHA, RHS, CHFA, PNC, VA and Freddie Mac.

This last category, regarding the potential liability of property owners, is also a key factor for all agencies that own property, even if they do not provide loans or mortgage insurance. In this study, DoD BRAC and GSA are the relevant examples. When DoD or GSA owns a property, it is responsible for all cleanup and liability that may arise. Both agencies remain potentially liable even after they have transferred ownership to other parties, if cleanup is not complete.

2.1.3 Organizational Mission

Organizations can also have different approaches to site contamination based on their organizational mission.

Agencies for which the property is important – a reason to confront site contamination
Though HUD is, at core, focused on housing and urban development, HUD's mission includes explicit mention of providing for safe and sanitary homes and communities. The extent to which this language requires special focus on environmental hazards has proven to change over time, with an evolution toward including environmental matters as part of HUD's activities and responsibilities. HUD's embracing of the goal of revitalizing and redeveloping urban areas provides impetus for addressing environmental matters. Redevelopment of industrial cities necessarily involves confronting site contamination and making decisions regarding how to address that contamination. The relatively new BEDI program is a programmatic example of HUD choosing to overcome those obstacles, rather than simply avoiding them. If HUD's goals were simply to provide low-cost housing, it might not concern itself with overcoming environmental obstacles.

EDA, RHS, CHFA and, even DoD BRAC and GSA, share similar goals in that respect. They all have development missions, with redevelopment concepts as part of their missions. For all but GSA, it is likely that redevelopment will remain a part of the agency/program mission. For GSA, it may be transitory. In the 1990s, federal policy encouraged all federal agencies to use

their investments to support redevelopment of urban areas. GSA was affected by that policy. It is unclear whether that policy will continue.

An agency for which the focus is the person, not the site – a reason to avoid site contamination
In contrast, the mission of the Veterans Administration and its Office of Home Loan Guaranty is focused strictly on veterans. VA has no ancillary goals regarding land development or revitalization of communities. If all veterans were to attain desirable housing that they could afford, the Office of Home Loan Guaranty would have achieved unambiguous program success, independent of whether that housing were in any particular location. It is therefore in the VA's programmatic interest to steer veterans away from properties that would raise costs, which is frequently the result of environmental risk and contamination.

For-profit organizations – maximize profits, minimize losses
PNC and Freddie Mac are for-profit businesses. Their missions are to maximize profits and prices of shares. These entities have no mission-related need to address environmental matters, other than their need to minimize factors that can have negative impacts on profitability. Freddie Mac's status as a Government-Sponsored Entity (GSE), regulated by HUD, does not change this assessment. Freddie Mac's role is to sustain the secondary mortgage market, independent of geography and specific properties. HUD does not judge Freddie Mac in terms of whether it meets any particular environmental or location-specific redevelopment goals. In fact, the nature of HUD's oversight relates to Freddie Mac's financial prudence, which can serve to steer Freddie Mac away from embracing environmental challenges.

PNC's profit motive does not always deter it from confronting environmental obstacles. In fact, PNC has invested in properties on which there is environmental contamination. Where the perceived risk of environmental contamination depresses the market price of a property more than the true costs of environmental management, PNC has the potential to earn good profits on a profit that takes place on that brownfield.

2.1.4 Public Relations

An additional reason that organizations manage site contamination is public relations. Many public and private sector entities are concerned about whether the broader public will judge them harshly as a poor environmental actor. Many private companies invest resources in cultivating an image of being environmentally responsible. None of the development agencies wish to be considered a contributor to environmental contamination.

2.2 Context and Environmental Review

Each agency designs its environmental programs taking into account these key context factors. They are not, however, entirely determinant. While there are standardizing influences on how agencies perceive and respond to risk, including NEPA and how the courts treat environmental liability, it is still that case that two agencies that face the same risk do not end up with the exact same policies and procedures. There are many reasons for such variation, including the budget available for environmental due diligence, staff perception of risk, the relationship between staff with program responsibilities and staff with environmental responsibilities, and other matters of

organizational culture. Such factors tend to be more discretionary or changeable than do the broader context factors.

Context factors can, for the most part, be viewed as difficult-to-change *conditions*. That is, HUD and other federal agencies face regulatory regimes that are established and driven by Congress and the President. The financial and liability risk that public and private agencies face is controlled by both the nature of the transactions and by the decisions of elected officials and the courts. The organizational mission of public agencies is determined by outside authorizers, though agencies do tend to have significant controls over the interpretation of their missions.

For this study, it is important to distinguish between those factors over which HUD has some control and those for which it does not. For example, with respect to the liability to which HUD is exposed as a result of providing mortgage insurance, HUD may not have the ability to change the regulatory regime or the nature of the financial transactions, but it does have the ability to reinterpret and/or refine its perception of risk and affect the organizational culture in that respect.

SECTION 3. THE AGENCIES AND HUD

In this section, each agency's similarities and differences with HUD are discussed. The focus is on management of site contamination. An attempt has been made not to repeat the descriptive language of each agency from Task 3, but instead to focus on comparisons with HUD. In that Task 4 is a stand-alone task, some description has been necessary. In the final report, Task 7, this duplication will be eliminated.

Parameters for the following comparisons include the context drivers of regulatory requirements, organizational/programmatic mission, and financial risk and liability. An attempt it made to understand which policies are driven by context factors, and which policies are discretionary. Special focus will be on comparing the approach that each agency-program takes with respect to institutional and engineering controls, and in what sense it can be considered comparable to HUD.

3.1 Department of Veterans Affairs, Office of Home Loan Guaranty

The Department of Veterans Affairs (VA) guarantees homeownership loans to eligible veterans. These loan guarantees are similar to HUD Housing's Single Family 203(b) mortgage insurance program. The context for these programs, however, is somewhat different. As a result, there are similarities and differences in how site contamination is managed.

As with HUD's single-family housing programs (but for exceptional circumstances), VA does not carry out a NEPA Environmental Assessment for its single-family loan guarantee programs. In fact, VA has no specific environmental requirements for its Office of Home Loan Guaranty. Review for environmental problems comes in the context of the appraisal, in which the appraiser inspects to ensure that the home meets the Minimum Property Requirements (MPRs) as specified in the Lender's Handbook. The MPR includes ensuring that the home is "safe, structurally sound and sanitary" and that the property is "free of hazards which may adversely affect the health and safety of the occupants, adversely affect the structural soundness of the dwelling and other improvements to the property, or impair the customary use and enjoyment of the property by the occupants." Unlike HUD Housing's MAP guidance, no mention is made of hazardous waste in the Lender's Handbook.

Unlike HUD Multifamily Housing, VA does *not* eliminate sites when environmental contamination is found, and it has no requirement that remediation be complete before it approves a guarantee. If environmental contamination is found at a property where a veteran wishes to build a home, VA program officers encourage the veteran to select a different location. If the veteran chooses the home anyway, the appraisal will include a "notice of value" that cites the existence of contamination, which reduces the appraised value and, therefore, the amount that VA is willing to guarantee. VA also requires that the veteran produce a written document from the lender in which the lender declares responsibility for any costs resulting from the contamination.

Similar to HUD Housing, environmental due diligence at VA is driven by the need for an appraisal that determines the financial risk that VA faces. Nonetheless, VA has no cleanup standards that prohibit the use of institutional and engineering controls. It defers to the cleanup standards of state and local authorities.

In contrast to HUD's Multifamily Housing office, then, VA has established a system through which a veteran can get a loan guarantee even for a house on a contaminated site; but that guarantee is discounted through the appraisal process to take into account how the contamination is estimated to reduce the value of the property. VA staff report that it is very rare for environmental contamination to present a problem. Nonetheless, VA has methods that permit a contaminated site that state and local regulators approve to be part of its program if a veteran has a strong preference to purchase the property.

3.2 Department of Defense, Base Realignment and Closure (BRAC) Program

Through the Base Realignment and Closure (BRAC) program, the Department of Defense transfers to local communities, from DoD ownership, many properties that have been contaminated with hazardous waste. It is responsible for the cleanup and redevelopment of 400,000 acres. Once transferred from DoD, communities use these properties for housing, industry, commerce, parks and other community purposes.

Even though BRAC's activities are *grants* of property, rather than loans or mortgage insurance, its management of site contamination is very different than that of CDBG or the other grant-making agencies reviewed for this study. BRAC has undisputed liability for the contamination that is on these sites, and its management of site contamination reflects this responsibility. Furthermore, due to the scale and intensity of contamination that DoD faces, BRAC is among the programs most scrutinized by EPA's Federal Facilities office, in EPA's enforcement of CERCLA 120(h). The scale and intensity are far larger than those of HUD, and the responsibility is more surely with DoD, which, unlike HUD, has tended even to be responsible for the *generation* of the contamination.

BRAC's primary goal with respect to site contamination and remediation is to achieve a level of safety for its sites that will facilitate closing the sites and transferring them to communities, while minimizing DoD's potential future liability. That goal is stronger than any subsidiary redevelopment goals that BRAC has developed over time.

As a result, one area of concern for HUD that is not shared by the BRAC program relates to the financial health of development projects. HUD's mission is to support development. One of the primary reasons that HUD Housing is concerned about site contamination is that it may have a negative impact on the financial health of development projects for which Housing is providing support. HUD appraisers conducting environmental reviews for multifamily housing projects are, or should be, providing information to program offices who then assess whether the contamination might pose a financial problem to the overall project.

Furthermore, as discussed in great detail in Task 2, if a project that HUD is supporting is unsuccessful and the borrower is unable to repay its loan, HUD may find itself taking title to a

contaminated site. This dynamic does not exist for BRAC. DoD already owns the land, and it is not involved in the financing development projects. For both of these reasons, HUD has an incentive is not available to BRAC – that of avoiding contaminated sites.

Since DoD has no choice but to confront its contamination issues, DoD's ideal would be to be able to conduct remediation that brings all sites to "background" levels, thereby removing all possibility of DoD being held liable after transfer has occurred. This ideal is not achievable, for at least two reasons. First, the contamination at some sites is at such a high degree, and is found at such depths, that cleaning up to background may be technically infeasible. Secondly, BRAC's budget for environmental remediation is not even close to matching the overall need. It is likely that BRAC's need is for many billions of dollars.

As a result, if BRAC is to achieve its mission of transferring a significant amount of DoD properties to communities, it has found that it must find ways to accommodate institutional and engineering controls, which offer cheaper alternatives to managing environmental risk. It does so in the context of a highly rigorous approach that is similar to Superfund protocols. It works closely with the EPA, states, and local communities to ensure that all regulations are met and that communities are satisfied with the outcome of all remediation activities. BRAC completes a remedial investigation and feasibility study, establishes a record of decision, develops a remedial design, and implements the "remedial action construction, remedial action operation and long-term management plan." This last phrase, "long-term management plan," only has meaning in the context of contamination being left on the site, in combination with institutional and/or engineering controls.

In order to be able to interact effectively with regulators and in to constrain its own liability, DoD has highly trained staff and a pool of environmental-engineering contractors, who are capable of carrying out state-of-the-art risk assessment and management. DoD does not rely only on the determinations of state environmental regulatory authorities. Its own environmental staff resources are capable of making their own determinations, in service of DoD's needs. DoD has far more resources, and far more highly trained personnel, to help protect DoD from future liability, than does HUD.

In summary, BRAC finds itself needing to confront and directly manage environmental contamination on properties that it owns. HUD does not face this situation. DoD does not have the budget to clean all of its sites to background, nor would it be technically feasible to do so in all cases. As a result, DoD uses institutional and engineering controls, even though it faces direct liability for that contamination. DoD's highly trained staff and significant resources for hiring highly trained contractors permit effective management of risk.

If HUD Housing were to decide, as a matter of policy, that it will provide mortgage insurance on properties where contamination has been left on site, DoD provides an example of the organizational infrastructure that can be built to moderate the risk to a public agency.

3.3 General Services Administration (GSA) Public Building Service

The General Services Administration (GSA) Public Building Services owns and operates approximately 1800 buildings, totaling more than 339 million square feet. Acquiring and holding property for public uses is a core mission of GSA. Although HUD also acquires property, HUD's orientation is quite different than that of GSA. HUD does not seek to acquire property; it only does so when it has provided mortgage insurance for an investment that is *unsuccessful*. That is, GSA Public Building Services staff is pleased when it has acquired a property, while HUD Housing staff is disappointed when HUD needs to acquire a property that it has insured. Whereas GSA seeks to hold and manage the properties that it acquires, HUD seeks to dispose of its holdings as quickly as possible.

GSA encounters toxic contamination in the context of seeking to purchase and/or construct a building. For many of its purchases or new construction, the parameters that GSA is given for its purchase constrain its focus to downtown or "infill" locations, where encountering contamination is not unusual. GSA staff is frequently not in a position, either because of the type of use for the building or because of political considerations, to decide simply not to purchase a property because of environmental contamination.

Whether HUD Housing should consider itself similarly constrained is a core question for this study, which, unfortunately, is unanswerable without a further survey of some nature. The report for Task 2 raised the following question of fact: Is there a sufficient amount of non-contaminated land available in urban infill areas for Housing to be able to reject properties where contamination is left on the site while, at the same time, fulfill its missions of providing affordable housing and redeveloping urban areas? One of the bases for current Housing environmental policy comes from the belief among key decision-makers that there are plenty of clean properties available within cities. Therefore, there will be no negative impact on HUD's supporting the development of affordable housing – because other sites are readily available. Arguments against HUD's policies of not accepting institutional and engineering controls frequently include the assertion that there are not enough clean sites in cities, and that HUD should therefore feel constrained to working with contaminated sites.

Similar to HUD Multifamily Housing, GSA requests that the potential seller of a site complete a Phase I assessment (early in the acquisition process, for GSA). If further investigation is necessary, GSA requests that the seller, whether a city government (frequently the case) or a private party, execute a Phase II assessment. When contamination is found, GSA works with the seller to determine who will clean up the contamination, and it coordinates closely with local environmental authorities to ensure that all of the local requirements are met and that the sites are cleaned to an acceptable level.

In contrast to HUD, GSA does, at times, fund the remediation on a site. In these cases, GSA deducts the cleanup costs from its purchase price of the property. Unlike HUD, but similar to VA, GSA has found a way to incorporate the costs from environmental contamination into the property appraisal and/or the purchase price.

GSA's primary goals for environmental review are to ensure the health and safety of the employees who will be working in the building to avoid costs and liability associated with environmental contamination. GSA defers to the cleanup standards and practices established by

state and local authorities when encountering hazardous materials on a property. As a result, environmental engineers from the Public Buildings Service have two main tasks. First, they coordinate with the state and local entities that oversee cleanup requirements. Second, they manage GSA's compliance with whatever long-term monitoring requirements are in place after remediation is complete.

As a general practice, GSA prefers a remediation plan that provides for cleanup to "background" levels.[142] On occasion, however, institutional or engineering controls are necessary and, in contrast to HUD Housing, GSA does not reject this approach. On such sites, GSA monitors the institutional and/or engineering controls on an ongoing basis. In Region 9, which includes California, GSA is actively monitoring 26 such sites.

3.4 **Department of Agriculture, Rural Housing Service (RHS)**

RHS shares HUD's mission of developing housing for low-income and moderate-income families. RHS's division of Rural Housing Development (RHD) administers direct loans, loan guarantees, and grants for single-family and multifamily housing projects. Direct loans are made and serviced by RHS staff, loan guarantees are made to banks or other private lenders, and grants are made directly to individuals or organizations. The RHS administers two loan guarantee programs: the Section 515 Rural Rental Housing Guaranteed Loan program and the Section 502 Single Family Housing Loan Guarantee program. Its direct loan programs are varied, and include the Section 502 Rural Housing Direct Loans for single-family housing.

It is very rare for RHS to encounter contaminated sites. RHS, by definition, focuses on rural areas of the country rather than on the urban areas on which most of HUD is focused. The environmental concerns of RHS are more similar to those of ONAP, where issues of flood plains, historic preservation, and other non-industrial matters have a relatively elevated level of importance. Nonetheless, environmental contamination is of concern, for both regulatory and financial reasons.

As a federal agency, RHS is similar to HUD in needing to comply with NEPA, and therefore has developed a series of protocols for implementing its environmental review processes. Similar to the approach of FHA's MAP Guidance, the Rural Rental Housing Guaranteed Loan Program handbook (HB-1-3565) requires a Phase I Environmental Site Assessment, completed by an environmental professional, for new construction projects or for work on existing buildings when the agency has reason to believe that there is a potential for contamination. The Rural Housing Direct Loan program, which has no analogous program at HUD, uses the ASTM Transaction Screen Process for environmental site assessment and completes the questionnaire developed by ASTM for this protocol.

Similar to HUD's approach, when a screening or Phase I assessment determines that a site is likely to be contaminated, RHS requires that the borrower hire a licensed contractor to conduct further testing. If a site requires remediation, an interviewee at RHS indicated that RHS is likely to request that a client find an alternate site. This decision is made on a case-by-case basis. For

[142] "Background" is defined and discussed in Task 1 of this study.

RHS's Rural Rental Housing Guaranteed Loan Program, RHS program managers consult with USDA state environmental coordinators, who advise program managers on the environmental considerations of the loan-approval process and in decisions concerning site remediation. The state environmental coordinators receive training by ASTM contractors on environmental site assessment issues, NEPA and hazardous wastes.

If cleanup is required, the Rural Rental Housing Guaranteed Loan Program guidelines require the borrower or seller to hire a licensed contractor to conduct a remediation of the contamination. The agency defers to the appropriate oversight agencies (i.e., state and local regulatory agencies) to approve cleanup plans, determine the level of health protectiveness for the site, and decide whether housing would be an appropriate reuse of the property. Decisions on institutional and engineering controls are also deferred to these oversight agencies.

There is no explicit prohibition on the use of institutional or engineering controls at RHS, even in the programs of direct loans and mortgage insurance. Again, however, RHS's rural setting has made such situations extremely rare for RHS.

3.5 Department of Commerce, Economic Development Administration (EDA)

Unlike HUD, there is very little in EDA's mission that can be interpreted as involving the environment. Various programmatic initiatives, such as staff participation in the federal Brownfields interagency task force, bring EDA into contact with and participation in the interaction between development and the environment. In the end, however, EDA's mission is strictly oriented to economic development.[143]

As discussed in more detail in the report for Task 3, EDA provides grants to state, local, and tribal governments to support employment-generating development projects. EDA provides no direct loans and no longer provides loan guarantees, as it once did.

HUD's Economic Development Initiative (EDI) and CDBG are the HUD programs most similar to EDA's activities. For all of these programs, grants are provided to support development projects, with the redevelopment of former industrial areas receiving a large amount of focus. As a result, it is not uncommon to encounter environmental contamination as a result of pursuing these projects. In none of these cases, however, do these activities expose HUD or EDA to financial risk.

EDA's only purpose for conducting environmental review is in order to comply with NEPA. EDA's Regional Environmental Officers (REOs) oversee and certify the reviews, the approach to which is described in the Task 3 report. There is no equivalent to HUD's Part 58 delegation of responsibility to grantees.

Similar to the EDI and CDBG programs, and all other HUD grant programs, EDA has no prohibition on the use of institutional and engineering controls. EDA's REOs defer to the local and state environmental regulatory authorities, in terms of remediation standards. If those

[143] EDA's mission can be found at http://www.osec.doc.gov/eda/html/1a1_mission.htm

authorities are willing to accept caps and monitoring wells, EDA will permit its grant funds to be used at those sites.

EDA has one element in its funding agreements that is different than HUD, and which adds protection for EDA against environmental liability. EDA includes an "Indemnification Standard Condition" in its Terms and Conditions, which holds "the Government harmless from and against all liabilities that the government may incur as a result of providing an award to assist, directly or indirectly, preparation of the project site of construction…to the extent that such liabilities are incurred because of toxic or hazardous contamination …" EDA's environmental officers do not, in general, believe EDA to be at risk from toxic contamination. They believe this standard condition to be a residual policy from the early 1990s, when EDA incurred great costs in its loan guarantee program, from environmental contamination.

3.6 California Housing Finance Agency (CFHA)

CHFA provides Californians a suite of programs for multifamily housing, ownership, rent support and other special activities. It provides mortgage insurance and loans, which expose CHFA to potential liability, through repossession of environmentally contaminated properties. CHFA competes against FHA for business, with its mortgage insurance.

CHFA is a California state agency and therefore only need comply with NEPA when it is using federal funds. For all applicable investments, however, it must comply with California's version of NEPA, called CEQA. Furthermore, as with HUD, CHFA's mortgage insurance products expose the agency to financial liability. As with HUD, CHFA is concerned with the viability of the project, the property's value as collateral, and the potential costs that CHFA would face were it to take title to the property. Similar to HUD, then, CHFA's environmental reviews are for the dual purposes of complying with regulations and financial due diligence.

Similar to HUD Housing, CHFA always reviews Phase I reports before providing mortgage insurance for multifamily properties. Unlike HUD, CHFA sometimes commissions Phase I reports with its own resources if, for some reason, the borrower and lender have not done so. Phase II assessments are almost always funded by the lender or the borrower. If cleanup is necessary, CHFA will carefully scrutinize the plan, especially if it is not familiar with the work of the environmental contractor. Also unlike HUD, CHFA hires a consultant after cleanup is complete to review the remediation and ensure that it was done correctly.

CHFA is willing to provide mortgage insurance for development projects on sites where there are institutional and engineering controls. If contamination is left on the site, CHFA requires that a regulator-approved operations and maintenance plan be in place and implemented.

In general, CHFA faces similar regulations and liability exposure that are quite similar to those of HUD. Furthermore, its mission is quite similar, to the point that its mortgage insurance products compete with HUD's. Nonetheless, CHFA has found a way to support projects on contaminated sites. A key tool for doing so is investing its own resources in high-level due diligence, through its own hired contractors in order to assess the site circumstances and the remediation plans.

3.7 Freddie Mac

Similar to HUD Housing, Freddie Mac has a mission of promoting and facilitating the development of housing throughout the nation. Unlike HUD, Freddie Mac seeks to fulfill this mission in the context of being a for-profit business. Freddie Mac purchases mortgages from private mortgage lenders and sells them as mortgage-backed securities on the private equity market. It sells these securities as large bundles of standardized mortgages. Buyers have the expectation that the bundled mortgages are alike and conform to the standards that Freddie Mac imposes on the lenders from which it purchases the mortgages.

It is perhaps because of this need for standardization that, of all of the agencies studied, Freddie Mac is the least willing to engage with a property that has environmental contamination. Similar to HUD Housing, Freddie Mac requires the preparation of an environmental report, similar to a Phase I assessment for mortgages that exceed one million dollars. For loans that are less than one million dollars, a less-intensive environmental survey is required. HUD Housing makes no such distinction. Surveys encompass a site inspection and basic research into the property's prior use. The applicants must complete environmental reports and environmental surveys prior to the approval of a loan that Freddie Mac would purchase.

Freddie Mac's policies are as restrictive as those imposed by HUD's MAP Guidance. Freddie Mac does not approve loans on properties that require cleanup. If the environmental report or environmental survey finds that there is a reasonable possibility of contamination, and that a Phase II is required, Freddie Mac staff reported that it is unlikely that the loan will be approved. "…Sites that would necessitate remediation are usually weeded out." Despite its strict screening practices, Freddie Mac has approved a few projects on which contamination was, later, discovered. In these cases, Freddie Mac has coordinated with state and local environmental authorities to ensure that the project is managed according to the appropriate standards.

3.8 PNC Financial Services Corporation

PNC provides direct loans to support development (commercial, industrial, and residential) on properties where there may be environmental contamination. Through subsidiaries, it is also a syndicator of affordable housing equity; as well as a national provider of multifamily mortgage loans, including financing for affordable and senior housing. Its various activities require environmental due diligence to ensure that environmental contamination does not harm its investments.

PNC is not a government agency and therefore has no requirement to comply with NEPA, as HUD does. PNC does, however, share HUD Housing's concerns on three matters: 1) the potential impact of environmental contamination on the project, and on the ability of the borrower to repay the loan; 2) being held liable for remediation, were PNC to foreclose on a contaminated property; and 3) the potential for third-party lawsuits. Both Housing and PNC share the general concern regarding the financial impact that environmental contamination could cause.

Nonetheless, in contrast to HUD Multifamily Housing, PNC does not reject properties for the sole reason that a remediation plan will leave contamination on the property. PNC has loaned money for development projects where institutional and engineering controls are employed. PNC does not, however, simply rely on state environmental regulators to protect its interests.

Instead, PNC is an active participant in reviewing environmental assessments and remediation plans, far more so than is HUD. PNC employs highly trained staff that has expertise at the interaction between financial risk and environmental contamination. Key features of its approach include that:

1) PNC closely analyzes consultant's environmental reports, and reject them when it judges the reports to be questionable or poorly prepared;
2) PNC relies on state environmental regulators for standards, but not in all states. PNC does not base its financial security on the opinions of state regulatory bodies that PNC does not think is rigorous. If PNC does not trust the rigor of a particular state, it insists that borrower conduct remediation to a level that would be sufficient in New Jersey, a state that PNC considers to be particularly strong in its science and understanding risk.
3) PNC's environmental unit includes environmental engineers and financial experts.

PNC's approach will be highlighted in Task 6, in which conclusions and recommendations for this study will be discussed, because it offers a model for how HUD Multifamily Housing could accommodate sites where contamination is left on the site. PNC shows how these development projects can be supported, while maintaining protection for PNC.

Also in contrast to HUD, PNC is also willing to fund remediation as part of the development project. PNC does not insist that, in all cases, remediation be complete before it approves a loan.

SECTION 4. SUMMARY OF COMPARISONS

Because of the importance financial risk in determining how an agency addresses environmental contamination, this section is divided into separate discussions for those agencies whose financial risk is quite low due to only being involved in providing monetary grants; and those whose financial risk is higher, either because they own properties or because they provide mortgage insurance and/or direct loans.

4.1 Lower-Risk Programs/Agencies

Environmental due diligence for HUD's grant programs is similar to that in other agencies, in focusing exclusively on implementing NEPA. No extra due diligence is pursued by any of the agencies, though EDA includes standard language in its grant agreements that holds EDA harmless in case contamination is found.

HUD is the only agency studied that delegates NEPA reviews to grant recipients, or Responsible Entities (REs). All other agencies conduct their environmental reviews internally with their own staff. One reason that HUD has delegated this responsibility is because of the far-larger quantity of development projects that are supported by HUD grants and that require NEPA environmental review. Because HUD is unique in this regard, there are no comparisons that can be made with other agencies, in order to assist HUD in solving its problems of monitoring the compliance of REs.

HUD's standards for remediation are similar to those at the comparison agencies, in that none have elaborated specific standards in the context of providing grants. In none of the programs through which grants are provided, including those in HUD, are there prohibitions on institutional and engineering controls. In all of the federal programs through which grants are provided, environmental standards are determined by the federal (EPA), state and local environmental regulatory bodies that have jurisdiction in the project location.

4.2 Higher-Risk Programs/Agencies

Development agencies that provide direct loans or mortgage insurance all have a higher level of due diligence with respect to site contamination for these programs than do those that provide grants. All of the public agencies, including HUD Housing, require Phase I assessments. Freddie Mac and PNC require enhanced Phase I assessments for loans of more than $1 million, and a less-intensive screening by an appraiser for loans of less than $1 million. When a Phase I produces concern that there may be contamination, all agencies require Phase II assessments to be conducted.

Once contamination is discovered, there is quite a bit of variety among agencies in terms of how that contamination is managed. HUD's MAP Guidance, as discussed in great detail in Task 2, requires that cleanup be complete before it will approve an application for mortgage insurance, and it requires that the cleanup not require institutional or engineering controls. Though most agencies studied are reluctant to approve such sites, no other public agency is as strict in its

prohibition as is the MAP Guidance. Freddie Mac is the only other studied entity that indicated a similar prohibition of engaging properties with contamination left on the site. As discussed in Task 2, however, the MAP Guidance does not define the totality of Housing's policies. HUD's Office of Multifamily Housing has approved methods for program officers to make exceptions to these prohibitions. Nonetheless, the MAP language is stronger than any language that we have seen with respect to avoiding the use of "caps and wells."

Agencies that are exposed to financial risk but that choose to accept institutional and engineering controls have found ways to enhance their assessments of that risk or to incorporate the decreased value of the property into its appraisals. CHFA, DoD BRAC, GSA and PNC all spend their own resources on high-level environmental consulting services to ensure that remediation plans are sufficiently protective of their interests. PNC even maintains an in-house staff whose purpose is to provide expert guidance to loan officers on the interaction between environmental and financial risk at properties. VA discounts the value of the appraised property by an estimate of the costs of the environmental contamination.

RHS is an exception in this regard in being willing, though reluctant, to accommodate such controls yet not having a supportive infrastructure of resources to moderate its risk. RHS staff interviewed does not view this system as a problem because of the rarity of encountering site contamination of significant magnitude in rural areas.

SECTION 1. INTRODUCTION TO TASK 5

1.1 Background

The objective of Task 5 is to review and assess the views of the users of HUD programs. Our assumption for this chapter is that the reader has familiarity with Tasks 1, 2 and 3 of this study. The Task 2 report is particularly important as background for this document because it describes HUD's approach to environmental review, with a focus on how HUD implements NEPA and HUD's NEPA-implementing regulations, 24 CFR Parts 50 and 58. In large measure, the users of HUD programs are reacting to the policies and procedures that Task 2 discusses.

1.2 Study Methodology and Organization of the Report

In order to prepare this report, ICF interviewed representatives from cities that manage CDBG and HOME funds, developers, lenders, a public housing authority, and a state housing finance agency. ICF also contacted nonprofits, organizations and coalitions representing the interests of tenants, and states managing HUD dollars for housing projects. As these groups are very different, interviews were separate for each group.

Key information for this task was also gathered during a visit to the Chicago HUD field office, during which a session was held with multiple interest groups. The main topic of conversation was the policies resulting from Chapter 9 of the HUD Office of Housing's MAP Guide.

This document is organized in the following manner. Section 1 provides a brief overview of the study and how Task 5 was conducted. Section 2 discusses the users of HUD programs that were targeted for this Task, and those who were interviewed. Section 3 describes the views of the users, which includes a discussion of the views of the MAP guidance by key users. Finally, Section 4 provides a conclusion, including a description of next steps for the study.

SECTION 2. USERS OF HUD PROGRAMS: THE INTERVIEWEES

2.1 Who are HUD's Key Development Partners?

The purpose of Task 5 is to understand the views of users of the types of HUD development programs for which HUD's environmental policies are relevant. One can think of these users as HUD's development partners – the entities that use HUD's resources to pursue the goals that are shared between HUD and its partners.

HUD has many such partners. They include: state, local and tribal governments; public housing authorities; for-profit and non-profit private developers; tenants; and financial institutions. Each of these partners needs to follow HUD's rules, including those determined by HUD's environmental policies, in order to gain access to HUD's resources.

The views of HUD's partners are crucial as inputs to how HUD should construct any of its policies and procedures, including those that relate to the environment. HUD is a facilitator of, and an investor in, development; it is not a developer. HUD can only achieve its development missions through creating an investment climate that encourages HUD's partners to take advantage of HUD resources as part of their investments.

Environmental requirements are sometimes consistent with HUD's development goals, but sometimes can seem, to developers or lenders, to be obstacles to investment. HUD's challenge is to ensure the successful implementation of environmental requirements while, at the same time, remaining facilitative of development. If policies are facilitative, HUD's partners are more likely to participate in HUD-sponsored development. If policies serve as obstructions, HUD's partners will tend to avoid participating.

2.2 Users Have Different Relationships with HUD

Users are different in their perspectives on environmental review in part because they interact with HUD on different bases. Fundamentally, HUD is engaged in providing grants and mortgage insurance to its development partners.[144] When HUD provides mortgage insurance, HUD is the entity directly responsible for environmental review and conducts a Part 50 review. Lenders who apply for mortgage insurance, on behalf of developers and sponsors, therefore have a direct relationship to HUD in HUD's role as a regulator and implementer of NEPA. The relationship of developers and sponsors to HUD is indirect, for programs of mortgage insurance, because they are not the applicants. Nonetheless, it is their projects that are dependent on HUD's approval, meaning that they have a strong interest in HUD's policies. If HUD requires more costly approaches to remediation, these costs will affect the profitability of the project.

When HUD provides grants, either a Part 50 or Part 58 review may be the applicable regulation. Under Part 58, a local, state or tribal government is the entity responsible for the environmental

[144] For a limited number of programs, HUD also provides direct loans.

review.[145] Part 58 is the applicable regulation for most programs in HUD's Offices of Community Planning and Development (CPD) and Public and Indian Housing (PIH), though there are a great many exceptions. For grants to localities that can be Responsible Entities (REs), the localities/tribes/states conduct the appropriate environmental reviews when they are able and willing to do so. HUD's connection to the developers, lenders and, even, the locality or state is more distant than for Part 50. HUD's roles are to 1) serve as a resource to the Part 58 responsible entity; 2) approve/deny the Request for Release of Funds, which is dependent on successful local completion of environmental review; and 3) monitor localities on a regular basis.

When an eligible RE is unable or unwilling to carry out the Part 58 environmental review, HUD conducts a Part 50 review. In this case, HUD's relationship to the developer is once again direct. HUD finds itself conducting Part 50 reviews on a regular basis for projects sponsored by public housing authorities (PHAs). Unless a particular PHA is a government agency of a state, local, or county government, it is not authorized to be an RE. It must rely on the relevant state, local, or county government to act as the RE for its projects. If none of these entities are willing or able to assume these responsibilities, HUD staff will conduct the Part 50 review for a specific PHA project.

2.3 The List of Interviewees

For Task 5, we attempted to speak with representatives of each of HUD's key user groups on development programs.

Interviewees were selected based on:

- Categories discussed in the Statement of Work.
- Categories suggested by representatives of HUD, in particular the group of HUD staff that is advising ICF on this study. They include the environmental clearance officers from CPD, Housing and PIH; HUD's staff member in charge of Environmental Justice; key PD&R staff; and HUD field environmental staff.
- Feedback and approval from HUD's GTR for this study.
- The discussion above, regarding HUD's key partners/users.
- Internal ICF staff knowledge.
- Internet and telephone research.

ICF staff contacted more than 25 agencies, organizations, and companies. Of this number, 15 were determined to have relevant information and experience to discuss the topic. The following table provides a list of those whom ICF interviewed.

[145] The draft memorandum for Task 2 of this study discusses in detail how Parts 50 and 58 are implemented.

List of Interviewees for Task 5		
CPD Staff	**Affiliation**	**Date of Interview**
Ken Marshall	Prairie Mortgage	June 13, 2002 and December 11, 2002
Alan Cravitz	Developers Mortgage	June 13, 2002 and October 1, 2002
Greg Tatara	City of Chicago, Illinois	June 13, 2002
Sheila Gilmore	City of Houston, Texas	September 23, 2002
Mike Holmes	City of Clearwater, Florida	November 13, 2002
Ronette Bachert	Pennsylvania Housing Finance Agency	December 11, 2002
Margaret Allen	AGM Financial Services and Mortgage Bankers' Association of America	October 21 and December 23,
Mark Veckman	Private Environmental Consultant and Mortgage Bankers' Association of America	October 21 and December 23, 2002
Tim Veenstra	Chicago Public Housing Authority	November 14, 2002
B.J. Wills	City of Long Beach, California	October 29, 2002
Paul Johnson	City of Nashville, Tennessee	October 25, 2002
Stephanie Lampe	City of St. Petersburg, Florida	December 16, 2002
Kathy Boatman	Volunteer Housing	December 13, 2002
Maurice Williams	The Delta Institute	June 13, 2002
Michael Mittleholzer	National Association of Homebuilders	October 22, 2002

Other organizations that were contacted but, for various reasons, did not provide information include:

National Housing Law Project
Coalition on Homelessness and Housing in Ohio
North Carolina Low Income Housing Coalition
Washington Low-Income Housing Network
National Low-Income Housing Coalition
Douglas-Cherokee Economic Authority, Inc.
ReGenesis Project
Virginia Department of Housing and Community Development
Federation of Appalachian Housing Enterprises
Illinois Housing Development Authority
New Jersey Division of Housing and Community Resources
Clearwater, Florida Community-Based Development Organization

ICF Consulting makes no claim that the conversations that were held are representative samples of the opinions of the groups to which they are a part. Resources did not permit the investment of time that would have been necessary to collect that level of specificity of data. Our best and most-substantive feedback came from:

1) Local governments
2) The Mortgage Bankers Association of America
3) Individual lenders who have had direct relevant site-specific experience
4) A Public Housing Authority

It is important to note that not all organizations provided points of view on HUD's policies with respect to site contamination that might have been expected to provide them. Our discussions with some interest groups were less informative than we might have hoped. As a key example, we spoke with the Director of Environmental Programs at the National Association of Homebuilders (NAHB)[146], who has had a great deal of experience in advocating on matters related to brownfields and smart growth. He indicated that NAHB has not developed any positions regarding HUD's environmental policies. Furthermore, he was unable to direct me to any individual member of the organization whom he knew to have focused on the topic.

ICF also made a particularly strong effort to solicit input from tenant-oriented organizations. We searched for key relevant organizations through talking with HUD's lead staff person on environmental justice, ICF staff knowledge, and Internet searches. We identified six organizations and made multiple telephone calls to each. The organizations either had not developed relevant policy positions or they were not responsive, despite numerous attempts by ICF to contact them. In either case, the topic of HUD's environmental policies did not stimulate the type of responsiveness as that which we experienced with mortgage lenders.

[146] Michael Mittleholzer, Director of Environmental Programs, National Association of Homebuilders

SECTION 3. VIEWS OF USERS

As discussed, HUD has two fundamental ways of interacting with the users of its programs, with respect to environmental review: Part 58 and Part 50. For Part 58 reviews, eligible Responsible Entities (local, state and tribal governments) are in charge of the process and complete key paperwork, whereas HUD conducts Part 50 reviews on its own. Because this distinction is so fundamental to the types of views that users have, we have organized this section according to this distinction.

3.1 Views Relevant to Part 58

Our key interviewees for this section were cities and states, especially those who are empowered to act as Responsible Entities under Part 58 and conduct environmental reviews for HUD-funded development projects. We also interviewed a representative of a public housing authority.[147] The following are themes that emerged from interviewees who are responsible for reviewing and certifying environmental reviews and/or have some knowledge of HUD's policies in the context of their carrying out development projects.

- ***There was Mixed Experience Among Prospective, and Eventual, Interviewees Regarding Whether Site Contamination was a Significant Obstacle to Residential Development.***

In order to find appropriate governments with which to hold conversations for Task 5, ICF called many local governments of large and medium-sized cities in search of substantive feedback on HUD's policies with respect to site contamination. Many localities reported that site contamination has not posed a problem, in particular with respect to HUD-supported residential development. In one location (St. Petersburg, Florida)[148], most housing development is occurring in parts of the cities where housing has been the predominant use in recent history, rather than in areas where there was industrial use. In another interview (Pennsylvania Housing Finance Agency)[149], it was reported that the agency "weeds out" many projects that may cause problems, environmental or otherwise, before the projects are ever brought to HUD's attention. Other environmental concerns were mentioned by localities as being more significant obstacles, including lead-based paint and floodplain. Some highly industrial locations, however, such as Long Beach (CA)[150], Chicago[151] and Houston had encountered site contamination as a problem.

- ***HUD Part 58 Policies on Site Contamination are not Obstacles***

[147] We did not interview tribes, who are also eligible to be REs. HUD staff in the Office of Native American Programs (ONAP) indicated, in our work on Task 2, that there have been almost no reports of site contamination being an obstacle to HUD-supported development projects in Indian country.
[148] Stephanie Lampe, Housing Coordinator, City of St. Petersburg, Florida.
[149] Ronette Bachert, Certifying Officer, Pennsylvania Housing Finance Agency.
[150] B.J. Wills, Development Program Manager, City of Long Beach, California.
[151] Greg Tatara, City of Chicago, Illinois.

Our interviewees have not viewed HUD policies regarding site contamination as obstacles to development when site contamination has been encountered during a Part 58 review. Under Part 58, the responsibility of REs is to work with the environmental regulatory authorities to arrive at solutions, and consult with HUD staff on the process or regulations in the instances when they deem HUD's input to be helpful. Interviewees tend to view HUD field staff as partners, rather than regulators, in the Part 58 process. The interviewee from the City of Houston[152], who is responsible for Part 58 environmental review, indicated that it might even be appropriate for HUD to have stronger environmental standards, even for projects reviewed under Part 58. She believes that a high degree of care is warranted.

- ***Inconsistent Implementation of Part 58 in Public Housing Authorities***

Our interviewee from the City of St. Petersburg, Florida[153] is in charge of environmental review for the City. She conducts approximately 40 environmental reviews per year for City projects. She said that the City has elected not to conduct the environmental review on behalf of the public housing authority. The City and the PHA function very separately, and the City has elected not to take on these additional responsibilities. She assumes that HUD conducts the necessary environmental reviews.

- ***Consistency of Standards -- Concerns With Site Contamination Under Part 58 Occur when Part 58 Reviews Interact with Part 50 Reviews***

In Chicago, a HOPE VI project has involved the use of both HUD grant funds, for which a Part 58 review is completed, and FHA mortgage insurance, for which a Part 50 review is required. An employee of the City of Chicago[154] indicated his frustration that both needed to occur and that the standards were not the same. The more-strict standards of HUD's MAP guidance became a source of concern. The Chicago interviewee, who manages Chicago's environmental review, indicated that establishing consistent standards across HUD programs would be helpful in implementing complex HUD-supported projects, whether those standards were equalized at a stronger or weaker level.

- ***HUD Field Environmental Staff Provides High-Quality Guidance***

The staff of the REs who are responsible for environmental review reported that they rely on HUD field environmental staff to provide guidance on how to resolve problems or questions when they conduct of environmental reviews. We encountered only positive statements regarding the quality of the guidance and the intelligence of the field staff. HUD staff was seen as knowledgeable, a valuable resource for answering questions and, for the most part, responsive. One interviewee likened the working relationship between her agency, the community development agency, and HUD to "a think tank," in which the parties discuss options to resolve any environmental issues.[155]

[152] Shelia Gilmore, City of Houston
[153] Lampe interview.
[154] Tatara interview.
[155] Bachert interview.

- ***Amount of Staffing***

The primary concern that we heard regarding HUD's participation in environmental review relates to the amount of staff in the field relative to the demand for environmental work. Interviewees commented on their impression that the environmental staff seemed overworked. The interviewee from Houston said that she relied on guidance from HUD field staff in Atlanta for support, because of the lack of local field staff.[156]

3.2 Views Relevant to Part 50 Environmental Reviews

As a brief review, HUD conducts Part 50 reviews in three broad circumstances:

- For all programs through which HUD provides mortgage insurance, which includes most programs within the Office of Housing.
- For all grant programs, for which the recipients are non-profit organizations, universities, or others that do not have a governmental connection to an RE (many of these programs lie within CPD).
- When units of local, state or tribal government who are eligible to be REs decline or are unable to assume the role of "responsible Federal official."

Our key interviews for this element included local and state governments, a public housing authority, mortgage lenders, developers and national associations. The most substantive feedback came from lenders, developers, the Mortgage Bankers Association of America (MBAA), and local governments. The following are themes that emerged from interviewees whose projects are reviewed and certified under Part 50.

- ***Staffing Shortages***

As mentioned in 3.1, the shortage in HUD staff is felt by localities. Many localities either had no access to local HUD field personnel or mentioned the delays in getting feedback from HUD staff. Our interviewee from Long Beach, California, who is a Development Program Manager, discussed the problems that he had a few years ago in getting HUD environmental field staff to be responsive in a previous position that he held with the City of Los Angeles. In a Single-Room Occupancy development project that he was managing, he needed HUD's "sign-off" on the site. (He did not know why HUD needed to do the environmental review and did not seem aware of the distinction between Parts 50 and 58 – he know only that HUD needed to "sign off" on it.) He said that the project was using SRO grant funds. The setting and breaking of meeting dates became "a comedy of errors." The interviewee commented that "HUD is an obstacle when it comes to getting clearances." He said that the staff was qualified and professional when they finally made the time to do the work.[157]

[156] Gilmore interview.
[157] Wills interview.

- ***Staffing Quality – The Need for High-level Unbiased Technical Support on Site Contamination.***

There were mixed reviews from interviewees on the quality of the HUD staff in HUD's conducting Part 50 environmental reviews. Local governments, who may tend to see reviews for CPD and PIH grant programs, reported that HUD staff is qualified and capable. Mortgage lenders, who interact with the Office of Housing staff on applications for mortgage insurance, were more critical.

Strong opinions came from a member of the Mortgage Bankers' Association of America (MBAA), who also works with a private mortgage lender, and an environmental consultant, who has supported MBAA in developing its points of view on HUD policy. They believe that HUD does not have the in-house skills to be able to analyze complex reports that result from environmental site assessments. In order for HUD to be able to assess risk appropriately and be involved in risk-based cleanup, as they wish HUD to be, HUD must have adequately trained staff. *MBAA recommends that HUD have access to unbiased high-level technical support* whose job would be to protect HUD's interests while facilitating development.[158]

The environmental consultant believes that the lack of consistency in the quality of what is produced by environmental consultants hired by developers or lenders enhances the importance of HUD's having this skill and knowledge base. He also recommends that HUD develop and impose more standardization in the formats of reports that HUD requires for its Phase I and Phase II environmental site assessments.[159]

Overall NEPA Requirements

One interviewee criticized the administrative burden associated with adhering to NEPA requirements. She complained about the resources necessary to adhere to such requirements as securing the approval of state regulatory agencies such as Fish and Wildlife. She gave an example of a project that was delayed by two-to-three months in order to fulfill all environmental requirements. The interviewee mentioned that the administrative requirements were taxing even to her fairly large organization, and she speculated that trying to meet NEPA requirements might be even more excessively burdensome for smaller organizations.[160]

3.2.1 Mortgage Insurance and the MAP Guide.

One of the central questions of this study concerns the environmental policies of the Office of Housing's Multifamily Accelerated Processing (MAP) Guide. This guide "establishes national standards for approved Lenders to prepare, process, and submit loan applications for Federal Housing Administration (FHA) multifamily mortgage insurance."[161] Chapter 9 covers Environmental Review. Section 9.3, *Phase I and Phase II Environment Site Assessment*,

[158] Margaret Allen, AGM Financial Services and MBAA; and Mark Veckman, Private Environmental Consultant working with MBAA.
[159] Veckman interview.
[160] Kathy Boatman, Volunteer Housing
[161] Multifamily Accelerated Processing (MAP) Guide, revised March 15, 2002.

provides guidance for how to inspect for and manage contamination on the site of proposed projects. This chapter and these sections are the primary guidance to relevant staff for how to implement the regulation 24 CFR Part 50 for HUD-insured multifamily housing projects.

Task discussed the MAP Guide and Chapter 9 in detail, including some of the issues that have been raised regarding the policies and procedures that derive from the Guide. This document does not repeat that information. This section presents the views of users of HUD programs on the MAP Guide. The primary sources of these views are the MBAA, individual mortgage lenders, developers and localities. Other interest groups, including NAHB and tenant organizations, did not indicate that they had developed views on this topic or on HUD's policies with respect to site contamination, in general.

Key themes that emerged from the interviews included:

- ***The MAP Guide Requires Remediation/Resolution of Conditions Before Firm Commitment***

In the opening paragraph of Chapter 9 of the MAP Guidance, HUD states that it will not issue a letter of invitation to the lender to submit an application for Firm Commitment if there are unresolved environmental issues with the Phase I Environmental Site Assessment. Following the Phase I and Phase II, if a Phase II is necessary, the borrower may submit a remediation plan for eliminating the contamination or bring it to a level accepted by the appropriate regulatory agency. If, however, HUD is uncertain whether the remediation plan will eliminate the contamination or bring it to an acceptable level, then HUD requires that the borrower complete all remediation before it will issue a firm commitment. Among our interviewees, lenders, a developer, a staff member of a public housing authority and a representative of a local government were highly critical of this requirement.

A fundamental concern mentioned is that, in many development projects on contaminated sites, the remediation is conducted and funded as part of the overall financing package. For FHA-insured multifamily housing, the mortgage insurance is a key part of the financing package. If the mortgage insurance may not be secured until *after* the remediation is complete, the developer must conduct the remediation with financial resources that are not part of the development package; and that remediation cost must be borne *before* the developer can have complete confidence that the development financing will occur. Developers are hesitant to bear, on their own, costs that are related to such speculative return; and mortgage lenders are very unlikely to support them if FHA insurance has not yet been approved.

Furthermore, in many instances, the borrower/developer does not own the property on which the development is planned to occur before the financing package is in place. It is quite common for the development financing to include the costs of acquisition. If the FHA insurance is not secured until after remediation is complete, and acquisition will be funded by the total financial package, the implication is that the borrower/developer must complete remediation *before* taking title to the site. There are many obstacles to remediation taking place under those conditions, including borrowers' reluctance to place themselves in the precarious legal position of managing or financing a cleanup before having site control.

In addition, although a seller may be able to fund remediation on its own, a seller may have little motivation to do so to the standards required by HUD before the property is sold. A seller may have alternatives that would require either no or less-intensive (less-costly) cleanup. A seller may be more inclined to sell to a purchaser who would not have such requirements.

Some interviewees suggested that HUD should allow remediation to be considered a mortgageable cost. If Firm Commitment were permitted once a reliable estimate of the costs of remediation had been generated, remediation could be conducted as part of the construction or rehabilitation of the property. It was argued that this approach would be more consistent with the policy direction in which banking institutions are moving.

- ***MAP's Prohibition on Caps and Wells – Stronger Requirements than Regulators***

A frequent criticism from mortgage lenders and developers related to the MAP Guide's prohibition on approving FHA mortgage insurance on sites where remediation includes the use of caps and wells, and the resulting prohibition on institutional and engineering controls. Interviewees stated that this prohibition involves a stricter approach than those of federal and state regulators, many of whom are willing to approve remediation plans for residential sites that include institutional and engineering controls.

The result of this strict standard is to raise the remediation costs on some sites to a much higher level than would otherwise have been the case. As a result, some projects may no longer be viable.

In one example from an interviewee, a site contained a monitoring well that had identified a small amount of oil. Although the state regulatory agency did not think that the well was a threat to the environment, HUD required that the developer remove the well and all the soil surrounding it. The cost to the developers for cleanup was $20,000.[162] An even starker example of cost difference is presented below, as a case study – the Madden/Wells site in Chicago.[163]

One mortgage lender said that "HUD should never have a standard higher than the federal regulatory agency" that is charged with setting environmental standards.[164] Many interviewees pointed out that many state regulatory agencies have memoranda of agreement with USEPA, in which USEPA has endorsed the capabilities of state regulatory agencies in managing site contamination. One interviewee stated "If the federal EPA has an agreement with the state EPA, I would expect HUD will defer to the judgment of the state EPA."[165]

- ***Is FHA Exposing Itself to Enough Financial Risk?***

[162] Allen and Veckman interviews.
[163] Ken Marshall, President, Prairie Mortgage
[164] Ibid
[165] Ibid

One mortgage lender (Prairie Mortgage) suspects that FHA may not be taking enough risk in its lending practices, with HUD's overly conservative approach to site contamination as evidence. In his view, FHA has no purpose if it is not willing to bear risk – it was created to bear some of the risk that private financial institutions were unwilling to bear, in order to facilitate an increase in the supply of affordable housing. If HUD is not willing to bear that risk, it will not be fulfilling its mission of redeveloping urban areas and increasing the supply of safe and affordable housing.[166]

In an example of HUD's approach being more conservative than a private financial institution – on one site, treated wooden telephone poles had been stored on the property and had dripped arsenic into the soil. The soil was removed and placed in a concrete container across the street from the property. Nonetheless, HUD would not allow the property to be insured because there were trace amounts of contamination on the property. The project still went forward, and Fannie Mae later purchased the mortgage.[167]

The interviewee from Prairie Mortgage suggested that FHA conduct an investigation of the loss rate of its own portfolio. He does not know what the loss rate should be, but suspects that it should be in the range of three to five percent. If FHA finds that, for example, its loss rate is one percent, the implication is that HUD should be taking more risk. If HUD's loss rate is 15 percent, the implication is that HUD should be taking less risk. FHA's goal, in the context of its overall mission, should be to take as much risk as it can while remaining financially solvent. Decisions on how much risk HUD should take on environmentally contaminated sites should be made in the context of FHA having overall targets for risk and loss rates for its portfolio.

- ***HUD Program Staff Has Flexibility in their Implementation of MAP***

A lender in Chicago provided an important example of HUD having approved an application for mortgage insurance through the MAP process, even though the MAP approach to site contamination was not followed. In the Madden/Wells case, engineering barriers and institutional controls were permitted as part of the remediation plan. The example is presented as the Madden/Wells Case Study, below.

[166] Ibid
[167] Allen interview.

"Dig to Clean" vs. Illinois EPA Standards
The Madden/Wells Case Study
Chicago, Illinois

Madden/Wells is an 800-acre project of demolition and redevelopment of public housing in Chicago, which will result in a mixed-income neighborhood. 35-40% of total units are planned as public housing, and another 35-40% will be offered at market rates. The remaining units will be multifamily housing supported by low-income-housing tax credits and FHA mortgage insurance. The project is partially funded with HOPE VI funds. The first phase of the project involves approximately 95 acres.

A Phase I environmental site assessment on the 95-acre site suggested the possibility of contamination. A Phase II confirmed that PNAs exceeded the limits permitted by Illinois Environmental Protection Agency (IEPA) on residential sites. PNA, which is a by-product of the combustion of coal, is a carcinogen. Although PNA can be ingested through inhalation, the contaminant would need to be eaten in large quantities to cause cancer.

The MAP Guide requires that all contamination be removed from a site in order for mortgage insurance to be approved. In some parts of the 95-acre site, PHAs were found at depths of 12 feet. A professional environmental contractor estimated remediation costs for the "dig to clean" approach to be $155 million. In contrast, IEPA's standard required removal and replacement (with clean soil) of up to only 3 feet of contaminated soil, in places where no engineering barriers (e.g., buildings or parking lots) were in place. IEPA required no removal of soil in places where engineering barriers would cover the contaminated soil. The environmental contractor estimated remediation costs of the IEPA-driven approach to be between $9 million and $15 million, depending on the site plan (a site plan with more green space would require more removal of soil.)

The mortgage lender presented this cost difference to the Chicago HUB Director and to field environmental staff, requesting that IEPA's approach be accepted. The Chicago Multifamily HUB Director conferred with HUD Headquarters, leading to HUD's approving the application for mortgage insurance based on the IEPA-approved remediation plan. Under this plan, remediation will be completed as part of the construction process, rather than prior to Firm Commitment.

Information for this Case Study comes from Ken Marshall, President of Prairie Mortgage, Inc.

3.2.2 MBAA's Recommended Revision of MAP Chapter 9

In early 2001, the Mortgage Bankers' Association of America (MBAA) developed a draft revision to Chapter 9, Environmental Review of the MAP Guide. Goals of MBAA's draft chapter are to amend the policies and procedures that flow out of the current MAP Chapter 9.

A comparison of HUD's and MBAA's MAP Chapter 9 is provided below. MBAA's draft Chapter is also attached as an Appendix to this chapter. Differences between the two guides focus on the following topic areas:

- Qualifications of Professionals
- Capping or Paving
- Testing, Flushing, or Monitoring Wells
- Updating Phase I Assessments
- Phase I Possible Conclusions
- Standardized Environmental Assessment Reports, Checklists, and Forms
- Timing
- Who Conducts the Environmental Assessments

MBAA emphasized that the focus of its recommendations is not to weaken standards. In many instances, they believe that implementing their recommendations would result in strengthened standards, especially its focus on upgrading the standards for environmental reports and consultants.[168]

[168] Allen and Veckman interviews.

MAP CHAPTER 9: A COMPARISON OF HUD'S CURRENT VERSION AND MBAA'S DRAFT[169]		
	HUD MAP GUIDANCE	**MBAA MAP GUIDANCE**
QUALIFICATIONS OF PROFESSIONALS	No Guidance.	The MBAA guidance adds requirements for minimum qualifications of environmental consultants who conduct environmental assessments. Consultants must also ensure that personnel performing assessments meet requirements relating to: 1. Asbestos sampling 2. Lead-based paint (LBP) 3. Radon testing
CAPPING OR PAVING	HUD will not accept property for firm commitment where the remediation for site contamination has been capping or paving, rather than removal.	Capping or paving is permitted. The HUD Field Office must ensure that controls are in place and implemented that minimize potential risk.
TESTING, FLUSHING, OR MONITORING WELLS	A property with testing, flushing, or monitoring wells in operation will not be considered for mortgage insurance	These items are appropriate for placement on property under the following conditions: 1. Source of contamination has been removed 2. Well is required by regulatory agency 3. Well is to monitor possible contamination from an adjacent or nearby property If the source of contamination is an adjacent property, the well should be on the subject property but close to the source of the problem. Cost of installing or relocating wells is a mortgageable cost. Monitoring wells established on property where no contamination has been found, or where the source has been removed and remaining contamination poses no risk to human health and/or the environment and is naturally attenuating, are not barriers to environmental approval.

[169] This comparison was conducted by ICF, and reviewed by Ms. Allen and Mr. Veckman. ICF will include the entire draft Chapter 9 as an appendix to the final report if MBAA permits our doing so.

UPDATING PHASE I ASSESSMENTS	Update no later than 150 days past the expiration of the original Phase I and within 60 days of the date of submission. Guide does not specify how the update should be done.	Update of previous report may be submitted provided original report is less than one year old at time of submission. Update should include new records search and limited physical of property to determine if environmental conditions have changed.
POSSIBLE CONCLUSIONS OF PHASE I (a change in the structure of how the results are presented)	A property is considered unacceptable if it has an identified hazard. However, it may be accepted if corrective action is feasible. If no corrective action is feasible, then the property is rejected. The borrower may propose a remediation plan to remediate contamination or bring it to an acceptable level, as determined by appropriate local, state, or Federal authority. Remediation must be complete before initial endorsement. If no definite conclusion can be reached after the Phase I, a Phase II is required.	Possible Conclusions from Phase I 1. The property is acceptable. No follow-up needed. 2. No additional assessment work is required. However, the property will require an Operations and Maintenance Plan (O&M). The O&M Plan may be one-time operations and maintenance action or an ongoing program. 3. Property is unacceptable and no corrective action is possible. Property is not eligible. 4. Property is currently unacceptable, but could be made acceptable by remedial actions if borrower and lender wish to pursue loan. A Phase II may or may not be required. 5. If no definite conclusion can be reached after a Phase I, a Phase II is required if the borrower and lender wish to pursue the loan.

STANDARDIZED ENVIRONMENTAL ASSESSMENT CHECKLISTS AND FORMS (To be completed by environmental consultant)	No checklists for Phase I or Phase II environmental assessments. No Environmental Data Sheets for completing HUD Form 4128 and Sample Field Notes Checklist. No MAP-certifying language.	Standardized checklists for Phase I and Phase II (if necessary) environmental assessments. Standardized environmental data sheets to assist HUD staff in completion of HUD Form 4128 and Sample Field Notes Checklist. MAP-certifying language to be included in each environmental report submitted. Environmental consultant certifying the following: 1. The report was prepared in accordance with HUD requirements 2. No conflicts of interest 3. Personnel preparing site assessments and reports and conducting remediation are trained and licensed according to appropriate authorities.
TIMING	Remediation must be complete before initial endorsement.	The cost of abatement or development of an operations and maintenance plan is a mortgageable cost and does not need to be complete before initial endorsement.
WHO CONDUCTS THE ENVIRONMENTAL SITE ASSESSMENT?	Does not specify	States that the Phase 1 and 2 Environmental Site Assessments will be conducted by the borrower's environmental consultant.[170]

[170] Allen and Veckman stated that there was no intention to make a specific point on this topic. ICF has chosen to identify the different language.

SECTION 4. CONCLUSION

4.1 Why Was it Difficult to Obtain Substantive Feedback?

The process of identifying interviewees who could give substantive feedback on HUD's environmental policies with respect to site contamination was somewhat challenging, with the important exception of mortgage lenders for multifamily housing projects. Many potentially interested organizations had not developed any policy positions on the topic.

One possible reason for this lack of focus has to do with the origins of brownfields as a policy topic. During much of the development of "brownfields" into a national policy movement in the 1990s, the attention of local, state and federal governments has been on the potential for employment and business investment that redeveloping brownfields offered. Housing was not a significant topic of conversation until the last few years, even independent of any obstacles that HUD's policies may present.

Furthermore, key elements of the original advocacy regarding brownfields redevelopment were not necessarily supportive of developing housing on contaminated properties. A central feature of the brownfields policy conversation involved promoting the notion that regulatory standards could vary according to the intended use of the site. Under this logic, EPA and states were encouraged to have less-restrictive environmental standards for industrial reuses than for residential reuses. Very few people argued in favor of less-restrictive standards for residential reuses.

Thus, despite examples of successful residential development on brownfields, many developers and local governments have elected not to pursue such projects. It may be the case that there is not yet a critical mass of localities and states that wish to promote such projects, and, as a result, their national organizations have not focused attention on the matter.

Individual municipalities, such as Chicago, who are attempting to redevelop contaminated sites into housing, have sometimes developed strong opinions on policy.

4.2 Summary of Conclusions

- In general, localities with whom we spoke seemed satisfied with their interactions with HUD when they carried out their Part 58 environmental reviews, and they did not seem concerned about HUD's policies. Their view of the quality of HUD staff is, for the most part, favorable. Some interviewees were concerned about the quantity of staff available to provide support to localities and expressed their belief that the number of employees in the field is too low relative to the amount of much work.

- As we mentioned in our report for Task 2, we suspect that there are significant problems in the implementation of Part 58 reviews in Public and Indian Housing (PIH). The combination of limited resources and the different focus of this study together prevented our focusing attention sufficiently on PHAs to understand the full extent of problems that may exist. Nonetheless, the conversations that we had with municipalities and a PHA

supported the hypothesis that the current Part 58 structure, which asks localities to conduct Part 58 environmental reviews on behalf of the PHAs, is frequently not functioning as intended. In one case, the local government refuses to do the Part 58 reviews, leaving the responsibility to HUD.

- Mortgage lenders and developers whose projects depend on receiving FHA mortgage insurance, and the localities that promote this development, have expressed the most concern regarding HUD's policies with respect to site contamination. Concern is focused on MAP Guide Chapter 9, Environmental Review, which guides HUD's conducting of NEPA Part 50 environmental reviews when lenders have applied for mortgage insurance on multifamily housing development projects. MBAA has taken the initiative to draft, for discussion, a revised Chapter 9. Changes that the MBAA draft recommended were that HUD should:
    - Establish minimum qualifications regarding who can produce Phase I and Phase II environmental site assessments.
    - Establish standardized reporting formats for Phase I and II assessments.
    - Accept Phase I environmental site assessments for up to one year after they have been conducted, rather than the far-shorter time currently permitted.
    - Gain access to unbiased, high-level technical support in order to understand adequately the reports produced by environmental consultants and to make decisions for complex sites.
    - Permit the use of institutional and engineering controls, including caps and monitoring wells, on sites that receive FHA mortgage insurance.
    - Permit initial endorsement to occur before remediation has been complete, as long as a remediation plan, acceptable to regulators, has been approved.
    - Permit remediation to be a mortgageable expense, covered by FHA insurance.

- Other points that lenders made included that HUD should:
    - HUD should never have standards that are higher than those of environmental regulators.
    - Housing should be willing to take more risk, even environmental risk, than the private sector – the purpose of FHA mortgage insurance is to bear risk.

SECTION 1. INTRODUCTION TO TASK 6

This chapter is the product of Task 6. The objective of this task is to discuss the conclusions and recommendations that have emerged from the entirety of this study by identifying potential alternatives to HUD's current policies and procedures in the management of site contamination. Our assumption for this chapter is that the reader has familiarity with Tasks 1-5.

1.1 The Core Questions of This Study

This study has had one core area of concern and several related topics. The primary area has centered on the FHA Office of Multifamily Housing's policies regarding the management of site contamination, as detailed in the MAP Guide. The substantive questions revolve around a general notion, proposed by some HUD staff and some outside parties, that Multifamily Housing may be too restrictive in its approach to environmental contamination. Some of these interested parties have expressed their belief that Multifamily Housing should be more willing to accommodate "risk-based" cleanup at properties on which Multifamily Housing supports development projects, rather than attempting to achieve a state of no environmental risk of any sort.

In addition to this core policy question, other broader questions about HUD's management of site contamination have emerged. In order to assess whether the approach of the Office of Housing is consistent with the approaches of other parts of HUD, it was important to understand those other approaches. In doing do, other questions and concerns that were consistent with the themes of this study have been addressed, albeit not in as much detail as have been the questions regarding Multifamily Housing. Questions have included the effectiveness of the implementation of the Part 58 regulation, for both CPD and PIH, and overall staffing.

Many of our conclusions come from the central understanding of this study that there are three different reasons for conducting due diligence for environmental contamination: 1) requirements under NEPA and other environmental laws; 2) financial risk; and 3) agency mission. A great deal of variation among approaches to environmental review, both within and across agencies, can be explained by differences in how agency staff perceive these factors to affect the agency. This understanding helps to sort out which elements may be appropriately borrowed from other agencies, and which may not be. For example, PNC Bank's approach to managing financial risk due to environmental contamination offers important lessons for HUD, even though PNC offers nothing in terms of how to comply with NEPA (PNC is not a federal agency). In contrast, EDA needs to comply with NEPA, but its programs do not expose it to environmental risk. These three reasons provide grounding for how all recommendations and conclusions are discussed.

1.2 Organization of the Report

This report is organized according to the core questions of the study. Section 2 discusses Multifamily Housing's policy questions, and Section 3 discusses other matters, including CPD's monitoring of Part 58 reviews, staffing, and the overall effectiveness of the system for environmental review in Public and Indian Housing. We do not discuss these topics at as much

analytic depth as we do the questions of Multifamily Housing. Section 4 presents a brief summary of the conclusions and discusses the final step of the study.

SECTION 2. MULTIFAMILY HOUSING'S ENVIRONMENTAL STANDARDS

2.1 MAP Guide, Chapter 9

The central question of this study is whether Multifamily Housing should retain or change its current policies and, even, philosophy for managing site contamination. Under its present approach, as it is enunciated in Chapter 9 of the MAP[171] Guide, Multifamily Housing will not approve an application for mortgage insurance if the presence of contamination requires engineering and/or institutional controls in order for the site to be considered safe for residential use. If contamination is present, remediation must be complete before Multifamily Housing may approve an application. HUD's implicit "philosophy" behind this conservative approach is that environmental contamination presents too much risk in terms of health and, especially, financial exposure; and HUD should therefore avoid any such potential risk. There are provisions in the process for program directors in the field to make exceptions, and approve applications even though caps or monitoring wells are deployed on-site.

This restrictive approach has come under challenge by some interested parties, both within HUD and outside of it. A key external partner of HUD, the Mortgage Bankers Association of America (MBAA), who represents the primary class of users of mortgage insurance programs, has so much interest in this matter that is has made the effort to develop a draft alternative to Chapter 9. Some developers have also expressed interest in seeing change in the policy approach.

A review of the arguments that have been made on each side of this matter is helpful. Arguments in favor of Multifamily Housing's policy remaining the same include:

- The prohibition on the use of caps and monitoring wells is consistent with HUD's mission of providing "safe, decent and sanitary" housing, in particular for those people for whom HUD-assisted projects provide housing of last resort.
- The prohibition is highly protective of HUD's financial resources.
- Engineering and institutional controls are relatively new and unproven approaches, in particular in the long run.
- Plenty of alternatives to contaminated sites exist in cities. Prohibiting the use of such sites does not have a negative impact on the ability of FHA to achieve its mission of providing affordable housing.
- HUD environmental staff does not have training to assess risk.
- The MAP Guide specifies that Multifamily Housing program directors in field offices have the authority to make exceptions in two ways: 1) within the MAP process, or 2) following the alternate ("traditional") approval process. Through these methods, Multifamily Housing has approved applications where institutional and engineering controls are in place.

The key arguments for changing Multifamily Housing's Approach include:

[171] Multifamily Accelerated Processing

- Requiring this strict approach to remediation makes developing certain sites too expensive, increasing the obstacles to providing affordable housing.
- HUD needs to be realistic about the nature of industrial cities: these cities have a small number of appropriate developable urban properties, and an even smaller number that do not have such environmental concerns.
- The combination of strict environmental policies and limited numbers of developable properties restricts HUD's ability to bring about urban redevelopment.
- If "caps and wells" and other risk-based cleanup methods are acceptable to environmental regulators, there is no health-based or environmental reason for HUD to reject their use.
- The approach is inconsistent with the approach of HUD's other programs and Offices, where institutional and engineering controls are not prohibited.
- Other comparable agencies find ways to incorporate these controls. In our comparisons, HUD's Office of Housing is unusual in its strict approach, even as compared to other agencies that are as exposed to environmental liability as is HUD.
- Financial risk from environmental contamination is manageable. Even private for-profit entities manage to make profitable investments on properties where contamination is left on the site, but controlled with risk-based methods.
- The current approach, which permits risk-based methods to be used only in exceptional circumstances, has not encouraged HUD to build up the infrastructure to support higher-level risk analysis. Decisions are made without the benefit of the latest methods.

In this section, we discuss conclusions that we have drawn, through posing and answering key questions that hope guides resolution of the arguments listed above.

2.2 Interpretation of HUD's Mission

In terms of HUD's agency mission, retaining Multifamily Housing's current restrictive approach to site contamination, as enunciated in the MAP Guide, is a defensible position from the perspective of HUD's responsibilities for public health and financial prudence. By taking this approach, HUD is:

- Protective of human health and the environment, consistent with HUD's mission of providing "safe, decent and sanitary" housing, in particular for those people for whom HUD-assisted projects provide housing of last resort; and
- Highly protective of HUD's finances and program resources by limiting HUD's exposure to potential liability.

A central challenge to this conservative approach comes from the question of whether this approach is consistent with the core elements of HUD's mission that involve 1) supporting the development of housing for low-income families, and 2) promoting urban development and revitalization. Answering this question relies on two key subsidiary questions, one of *fact* and one of *values*.

2.2.1 A Question of Fact – Are Clean Sites Available in "Infill" Locations?

In this study, we heard clear differences in perception among various interviewees, between those who think that there are very few available clean sites in cities, and those who think that there are plenty of such sites. Some believe that in industrial cities, especially those that have had great fires (e.g., Chicago and Baltimore), there simply is no clean soil in infill locations. Others disagree, saying that plenty of non-contaminated sites exist. This study does not have the resources to answer this question, though it may be answerable through additional research. The hypothesis that we might test would be that cities are quite different in this regard, with some presenting very few problems in identifying a sufficient number of available clean parcels to meet the needs for affordable housing, and others having far more difficulty.

The answer to this question has implications on whether Multifamily Housing's restrictive approach has an impact on HUD's fulfilling its development mission. If there is a sufficient number of clean sites available for multifamily housing in areas targeted for revitalization, avoiding contaminated sites should have very little impact on the ability of HUD Multifamily Housing to meet its development mission. If, on the other hand, the number of clean sites is limited and insufficient to meet needs with respect to affordable multifamily housing, HUD will be far less able to achieve its mission if there are high obstacles to developing contaminated sites.

If such a study were conducted, the implication of finding whether there are sufficient clean sites in infill locations would be that HUD could remain conservative in its environmental policies without having a negative impact on its development missions. HUD would not be declaring that these sites could not be developed for any use; HUD does not have that power. Rather, HUD would be declaring that it remains very reluctant to provide mortgage insurance for those sites.

If the findings were otherwise, that there are very few available sites that would not need to use institutional and engineering controls, HUD's remaining conservative on environmental policies would be sacrificing its development mission.

Based on our interviews with representatives of local governments, we assume that there are at least *some* cities that experience a shortage of clean sites that are appropriate for affordable multifamily housing.

2.2.2 A Question of Values and Mission – Development versus Risk

Assuming that at least some cities are limited in the amount of clean sites available for residential multifamily development, HUD needs to make a decision regarding how it values its development mission relative to two key areas of risk – 1) public health and the environment, and 2) financial and regulatory.

There is no "correct" answer to the question of whether HUD should permit the use of institutional and engineering controls. In the end, the decision will need to be made on the basis of HUD's interpretation of its mission. In the ideal, HUD would organize its policies and processes for environmental review according to both the *real* risks presented by environmental contamination and HUD's organizational goals/mission.

The key mission questions for HUD to ask are:

1) How does HUD balance its mission to provide housing and to promote urban development with its needs for that housing to be "safe and sanitary" and its financial risk to be minimal?
2) FHA exists to bear financial risk that the private market is reluctant to bear. Should FHA consider environmental contamination to be one of the categories of financial risk that it should help to bear, or should it be an excluded risk?

From our interviews and from reviews of documents, we have concluded that *Multifamily Housing's conservative environmental policies are driven far more by concern about financial and regulatory risk than it is by concern about public health and the environment.*

Mission and Health Risk

Neither U.S. EPA nor most state environmental regulatory agencies prohibit the use of engineering or institutional controls. In general, however, they tend to be more careful and conservative for residential sites by requiring that remediation be carried out to stricter standards of risk. Most have embraced the logic of risk-based cleanup, in which standards for cleanup for residential sites may be more restrictive than, for example, standards for industrial uses.

HUD has no current agency-wide policies that address health standards with respect to site contamination. If Multifamily Housing's policies were driven by a HUD-wide concern about health, one would expect that Multifamily Housing's strict policies would be shared by other parts of HUD. Instead, HUD has made no objections to the use of institutional and engineering controls at sites where development is supported with funds from CPD or PIH, even though programs in those Offices also may support the development of multifamily housing. Programs from these Offices do not, however, expose HUD to the financial risk that mortgage insurance programs do in the Office of Housing.

There are some people in HUD who believe that HUD should incorporate the protection against health risks into its mission. Even though HUD is, at core, a development agency, such an approach would not be inconsistent with other HUD activities, such as those that occur in the Office of Healthy Homes and Lead Hazard Control. Even in this Office, however, it is not HUD's role to set health standards. We do not believe that HUD should develop its own health and environmental standards. This activity is the mission of other regulatory agencies. Our recommendation is that, if HUD wishes to increase its role in that regard, it should open a more active dialog with EPA and other health-oriented agencies (e.g., ATSDR) to understand the role that HUD might play in protecting public health.

Mission and Financial Risk

There is a component to financial risk that interacts with HUD's and, specifically, the Office of Housing's overall mission. As stated above, it is clear to us from this study that the primary reason for Multifamily Housing's conservative approach to environmental contamination is financial risk. In all parts of HUD where there is no direct exposure of HUD to financial risk and

liability as a result of the transaction, there is no prohibition on the use of engineering and institutional controls.

In that context, it may be surprising to consider that *the mission of FHA Office of Housing is, in fact, to bear financial risk*. The purpose of government-sponsored mortgage insurance is to bear risk that private investors and/or lenders are unwilling to bear, in order to achieve development objectives. Types of risk include the risks that private lenders associate with 1) development in poor neighborhoods; 2) properties in which poor families will live; and 3) fluctuations in such market factors as interest rates and the demand for real estate.

Under current MAP policy, Multifamily Housing declares environmental contamination to be an area of financial risk that HUD should not bear, by declaring caps and monitoring wells to be prohibited. We believe it to be inconsistent with the mission of the Office of Housing's mortgage insurance programs to exclude this area of financial risk.

We advise HUD's Office of Housing to broaden the interpretation of its mission by embracing environmental risk as part of the financial risk that it be willing to bear, in order to facilitate the development of affordable housing in areas of revitalization. In order to do so, HUD must embrace the modern rigorous approaches to management of environmental risk that are not, at present, part of the Office of Housing's management infrastructure.

2.3 Managing Financial Risk

If HUD wishes to include environmental risk as part of the financial risk that Housing will bear, it much confront three key concerns: 1) how effective are current risk-based approaches, 2) HUD's capacity to analyze those approaches, 3) EPA's enforcement of CERCLA. We address those concerns, here.

Our conclusion, however, is quite clear. *The financial risks that result from developing a property on which environmental contamination has been left on site, but whose risk pathways have been blocked, can be managed. We believe that HUD should view risk in the context of its broad portfolio of transactions and properties.* Public agencies that have even greater exposure to liability and financial risk than HUD have implemented systems to be protective. For example, the U.S. General Services Administration's (GSA) Public Building Service purchases properties and develops buildings where people work, even though contamination is left in the soil or the groundwater. Private lenders, such as PNC bank, make profitable investments in residential properties where there are institutional and engineering controls. Other examples include the Department of Defense BRAC program, California Housing Finance Agency, USDA Rural Housing Service, and others. These agencies' approaches are discussed in greater detail in the reports for Tasks 3 and 4.

2.3.1 A Question of Science – Will ECs and ICs Last?

One of the key questions that can inform Multifamily Housing on whether to accept institutional or engineering controls is whether these remedies can be trusted over the medium and long term. HUD's financial risk would be far greater if these approaches were not trustworthy in the long

run. Within HUD, there is disagreement on this matter. Advocates for change argue that HUD should not challenge the opinions of state and federal environmental regulators, who have more training on these matters and whose jobs are to protect public health and the environment. Advocates for keeping the current policy argue that the case is not yet settled and point to differing approaches by state regulators regarding residential sites.[172]

There are no easy answers to this question. As we discussed at length in our Task 1 report, state and federal regulators are increasingly willing to accept risk-based cleanup methods on sites that they regulate. 44 out of 47 states reviewed had some method of accepting remedial solutions that did not include complete removal, and the vast majority of those 44 had no language prohibiting that approach on residential sites.

Nonetheless, not everyone is enthusiastic about using these approaches on residential sites. Some states include language in their documentation that encourages complete cleanups on residential sites. Even within U.S. EPA, where there is no specific prohibition on the use of institutional and engineering controls, certain staff that we interviewed had a certain degree of skepticism over whether localities or state would monitor the controls sufficiently to ensure that they are protective in the long run.

The consensus among the experts that we interviewed for our Task 1 report was that modern risk-based cleanup methodologies provide adequate protection of human health and the environment, both in theory and in practice. Specifically, they indicated that changing from older systems to risk-based cleanup has not resulted in a reduction in protectiveness and that the technical quality of cleanup decisions is improved, due to the overall modernization of risk assessment methods that generally has accompanied the introduction of risk-based approaches. While the number of interviews was limited, none of the respondents reported any "horror stories" related to the failure of risk-based cleanup to protect public health or the environment.

Based on our understanding of the "state of the art" of risk-based cleanup, *we advise Multifamily Housing to embrace the logic of risk-based cleanup, as enforced by states that use rigorous science and methods. States with a high level of rigor tend to be quite protective of health and the environment, especially for residential sites.* Using institutional and engineering controls does not have to be inconsistent with a safe remedial approach. For it to be protective of HUD's interests, however, HUD must invest in technical capacity.

2.3.2 A Question of Technical Capacity – Can HUD Analyze Risk?

Assessing plans for whether an institutional control and/or an engineering barrier are sufficient is a highly technical task that requires an understanding of toxicological risks to human health and remediation techniques. Furthermore, due to the nature of HUD's transactions, HUD must be able to tie these environmental risks to financial risks, for both individual sites and for HUD's entire portfolio of properties.

[172] This topic is discussed in detail in the Task 1 report.

At present, we do not believe that HUD has the in-house technical capacity to analyze risk appropriately. In the Office of Housing, appraisers are responsible for reviewing the environmental conditions of properties for which there has been an application for mortgage insurance. Those appraisers have two responsibilities when they conduct environmental due diligence: 1) carry out the Part 50 regulation that implements NEPA, and 2) protect HUD's interests financially. Appraisers have no special environmental training. They review the documentation submitted to them by the applicant, and ensure that, if there has been a problem at a site, the appropriate environmental regulators have approved of the approach. If the remediation includes engineering and/or institutional controls, the appraisers know that they should advise program staff to reject the application. Appraisers always have access to guidance from field environmental officers and from headquarters staff. Even those specialists, though, do not bring high-level training and experience in risk management.

Under the circumstances, it is understandable that Multifamily Housing would bias toward a conservative approach. Being more accepting of creative approaches to remediation requires a high level of staff training and sophistication in the understanding of hazardous waste.

It is important to note that this lack of expertise is not only a problem if Housing wishes to permit risk-based cleanup, it is a problem *at present* because there are program directors in field offices who are choosing to approve applications for mortgage insurance on sites with institutional and engineering controls. Those program directors are not accepting such approaches on their own; they are doing so based on regulatory acceptance of those approaches by state regulators. Nonetheless, there should be an additional step in the process in which technical experts, on behalf of HUD, review the specifications of the remedial approach to ensure that HUD's financial interests are protected. All private for-profit entities, and many government agencies, conduct this next step. They understand that regulators have different requirements than do organizations for which there may be financial exposure as a result of the contamination.

Thus, whether or not HUD chooses to embrace environmental risk as part of the overall financial risk that FHA will bear, *we advise that HUD upgrade its technical capacity to analyze the risks of site contamination*. HUD needs to establish a risk-management infrastructure that is similar to that of PNC Bank, either through in-house staff or contracting. The core task of that technical expertise would be to advise HUD program directors on the interaction between development goals and risk on a site-by-site basis, using advanced techniques in risk analysis. Core components of that unit should include expertise in environmental engineering and finance.

Furthermore, risk assessment applies not only to individual sites, but also to HUD's portfolio of holdings. At present, there is no indication that HUD has conducted an analysis of its portfolio from the perspective of environmental risk. HUD should be willing to manage a certain level of risk, which implies that it *should* be willing to accept a certain amount of financial loss from that risk. The appropriate approach is to balance that risk against program goals.

Once HUD upgrades its capacity, those technical experts will see the wisdom of the advice of an environmental consultant to the MBAA, who advised that HUD 1) establish minimum

qualifications for who can submit Phase I and Phase II reports to HUD, and 2) establish standardized reporting formats for Phase I and II assessments.

2.3.3 EPA and CERCLA

Some HUD staff have expressed concern regarding EPA's responsibilities and interest in implementing CERCLA 120(h) with respect to HUD. EPA regulates HUD's environmental practices through that provision, in particular when HUD owns property.

Our interviews with EPA staff in many offices, including the Federal Facilities Enforcement Office (FFEO), as well as a review of EPA publications, indicate the EPA's focus, in terms of federal facilities, is far more on the intensively contaminated sites within the Department of Energy and the Department of Defense. It is rare for HUD properties to attract attention/scrutiny from FFEO, in particular. Other federal development agencies did not report EPA being an obstacle for their work.

FFEO does not prohibit the use of institutional and engineering controls, even on residential sites, though its preference is for active and permanent remedies. FFEO staff that were interviewed for this study offered to work with HUD to draft policies on how to accommodate these controls. We recommend that HUD accept that offer. FFEO's focus is on voluntary compliance with regulations, rather than on fines or lawsuits. Our Task 3 document also includes other areas where EPA may be of assistance.

2.4 Additional Related Concerns Raised by Lenders

2.4.1 Timing of HUD's Approvals

Multifamily Housing requires that sites be completely free of hazardous materials before it will approve applications for mortgage insurance. As a result, cleanup must occur *before* the financial package for the development is completed. Lenders tend to wait until FHA has approved the application before they will commit to the loan. One consequence of this policy is that developers are not able to include the costs of cleanup in their overall financing package for their development projects. They are forced to pay for remediation from alternative sources, before the development financing is in place, thereby greatly increasing their risk. HUD personnel has reported that borrowers have encouraged HUD, at a minimum, to allow the costs of Phase I and Phase II analyses to become eligible costs; and, further, that HUD be willing to make a firm commitment to mortgage insurance earlier in the process.[173]

We advise HUD to make a change in this policy. A useful approach may be for HUD to grant a *conditional approval.* HUD could approve an application for mortgage insurance even before remediation has occurred, but after the problem has been assessed and characterized, and a cost estimate has been developed for the remediation. HUD would not be responsible for insuring the site if the remediation is not completed according to the plan approved by the regulator and, in

[173] Stevenson and Axelrod interviews.

the ideal, by a HUD technical expert. This issue is an example of where such expertise would be extremely useful.

Another alternative would be for HUD to grant a full approval of the application, but require that the applicant obtain environmental insurance. In this way, HUD would be protected.

2.4.2 Remediation as a Mortgageable Expense

A natural corollary to permitting approval by Multifamily Housing before remediation has occurred is to make remediation costs a mortgageable expense. In brownfields projects throughout the country, developers attempt to bundle the costs of remediation into overall costs of the project. In fact, these costs are frequently difficult to separate. As an example, one key element of an engineering control at a site might be to construct a parking garage over a part of the property where some contamination has not been removed. In that case, the remediation will occur as part of the development.

We advise Multifamily Housing not to prohibit remediation costs from being a mortgageable expense. As before, HUD could protect itself in this regard by having highly trained experts review cases before they are approved.

2.5 A Summary of Alternatives

In summary, we believe there to be four options for HUD in terms of its approach to Chapter 9 of the MAP Guide:

- Option 1: Status Quo - Retain the current overall MAP policy and do not invest in new analytic capabilities.
- Option 2: Improve Capabilities - Retain the current overall MAP policy, but invest in new analytic capabilities.
- Option 3: Change Policy - Change the overall MAP policy so as to accept institutional and engineering controls. Do not invest in new analytic infrastructure, but instead rely on the input of state and federal regulators.
- Option 4: Change Policy and Capabilities - Change the overall MAP policy so as to accept institutional and engineering controls. Invest in new analytic infrastructure.

Based on previous discussion and the work throughout this study, we advise that HUD adopt Option 4. Modern approaches, both within the public and private sectors, and among regulators, permit risk-based cleanup approaches to be deployed in a sufficiently safe manner. *However*, this change in policy must be done in conjunction with upgrading technical capabilities. We advise HUD to develop in-house expertise on the cutting edge of risk-based cleanup methodologies, or have on-call contractors who can support HUD's decision-making. This expertise, as mentioned before, should permit the linkage between financial risk and environmental contamination. PNC Bank's environmental unit is headed by an expert in finance and supported by environmental engineers. This model may be more labor-intensive than HUD needs.

HUD should hire an in-house financial expert who has experience with environmental contamination. That person might manage environmental technical staff, which might be in-house or contractual. The Department of Defense, including the Army Corps of Engineers, provides examples for how to maintain on-call private environmental contractors.

We do *not* advise that HUD adopt Option 3. Some interviewees in the course of this study have said versions of the following: "If environmental regulators accept a remedial solution, why shouldn't HUD also accept it?" We do not accept the logic of that question, and we believe that it would expose HUD to more risk than it should want to accept. Multifamily Housing's interest in environmental due diligence is broader than regulatory compliance. It is concerned also about financial risk. States vary widely in terms of the rigor that they apply to the regulatory process for site contamination. There are certain states that lenders who invest in contaminated sites do not necessarily trust, because their level of science and rigor is *too low*. Even states with highly rigorous approaches, however, do not focus on financial risk – their focus is on public health and the environment. For that reason, any for-profit entity that invests its resources in such sites, especially when contamination is left on-site, will ensure that it has access to technical expertise that is loyal to the business's interests.

If, in the end, Multifamily Housing elects not to change its policies, and judges that its exceptions provide sufficient opportunity to support sites with institutional and engineering controls, we still advise Multifamily Housing to adopt Option 2 rather than Option 1. We also believe that there is demand for this analytic support in other parts of HUD, as well, including within PIH.

SECTION 3. OTHER IDENTIFIED MATTERS WITHIN HUD

In the course of this study, we identified other matters that seemed of sufficient importance to include them in our discussions. Here, we discuss HUD's implementation of Part 58, PIH, and staffing.

3.1 Monitoring Implementation of Part 58 Reviews

HUD has not been consistent in monitoring local implementation of Part 58 environmental reviews, as was its stated intention in its agreement with the Council for Environmental Quality in the creation of Part 58. In the most egregious cases, HUD has not monitored Responsible Entities (REs) for as much as 20 years. It is unclear what the implications are for HUD in terms of liability, in that REs are ultimately responsible for the review. In the worst-case scenario, CEQ could judge that HUD has not monitored sufficiently and that REs have not been adequately implementing NEPA – and CEQ could revoke HUD's right to rely on Part 58. There is no reason, however, to think that CEQ would do such a thing.

Reasons for HUD's inconsistent monitoring have included: 1) insufficient numbers of staff, and 2) decisions by field environmental officers that training is more important and time-effective than monitoring.

At the beginning of this study, only 16 field environmental officers existed throughout the country. During the course of the past year, CPD's Office of Community Vitality has been rapidly increasing this number. As of February 2003, there were more than 30 field environmental officers, and almost every field office was covered. This increase should make a large difference in HUD's ability to monitor.

3.2 Overall Structure of Environmental Review in PIH

As we mentioned in our report for Task 2, we suspect that there are significant problems in the implementation of Part 58 reviews in Public and Indian Housing (PIH). The combination of limited resources and the different focus of this study together prevented our focusing attention sufficiently on PHAs to understand the full extent of problems that may exist. Nonetheless, the conversations that we had with municipalities and a PHA supported the hypothesis that the current Part 58 structure under PIH, which asks localities to conduct Part 58 environmental reviews on behalf of the PHAs, is frequently not functioning as intended. In one of our interviews, the representative of the local government told us that she refuses to do Part 58 reviews for the local PHA, knowing that HUD would take care of it.

We do not know how this system should be improved, without further study. Our recommendation is that HUD conduct a study of how Part 58 is implemented in PIH, with a goal of restructuring the approach. We suspect that the resolution of the problem will result in a system that implements Part 58 in full. Part of that solution may require legislation or a regulatory ruling that declares local PHAs to be Responsible Entities. Under the current system, there is no incentive for the local government to take on that responsibility.

It is also our impression that PIH has no consistency in terms of the field staff that implements Part 50 reviews, when Part 58 is not completed. For the most part, CPD Field Environmental Officers are not responsible for conducting Part 50 reviews. We have even heard reports that PIH staff sometimes avoids taking advantage of the environmental expertise of CPD FEOs, even when their assistance may be warranted and/or helpful. Instead, PIH uses its own engineers or other program staff. Or, it has contracted with the U.S. Army Corps of Engineers, though our understanding is that this arrangement has not been entirely satisfactory to HUD.

In summary, we suspect that PIH's overall system would benefit from a "fresh look."

3.3 Staffing

We have found it to be somewhat odd that in the place where HUD is most consistently carrying out Part 50 environmental reviews, the Office of Housing, there is the least amount of environmental expertise among the implementing staff. In Housing, appraisers are responsible for environmental review. Appraisers are not, by profession, trained environmental experts. In Multifamily Housing, their role is to conduct financial due diligence on applications for mortgage insurance. Environmental matters are only one small component of that larger picture. Within that relatively small environmental component, site contamination plays an even smaller role. They must also cover historic preservation, flood plain, endangered species, and many other areas.

In theory, these appraisers have two sources of support for environmental matters: 1) field environmental officers who are in their field offices, and 2) headquarters staff, including the Environmental Clearance Officer for Housing. In practice, some appraisers do draw on these resources, other do not. One obstacle to this participation is that some FEOs are employed by CPD, and are responsible, first, to CPD work. Other FEOs are responsible to the Field Office and all of its functions, in all parts of HUD. CPD FEOs tend to have more difficulty interacting with other Offices within the field office than do Field Office FEOs (though there is great variation in this regard).

At minimum, it seems that there has been no consistent system, in which all HUD staff knows the role of the FEOs and how they can support HUD projects. The Director of the Office of Community Vitality, who is also the NEPA lead for HUD, has proposed a change that would help to address this lack of consistency. The proposal involves converting all FEOs to an agency-wide status, rather than being in CPD. It would then provide a path for their roles to be defined as supporting all HUD activities, as it should be. In particular, they may be more available to support and/or conduct Part 50 reviews for all Offices within HUD and to provide guidance to others who are conducting them.

It is our impression that additional work will need to be done, if this proposal is accepted, to define more clearly the impact of the shift on how the FEOs interact with other staff. In some field offices, the "cylinders" are somewhat ossified, providing a potential obstacle to the acceptance of FEOs. We suspect, however, that these obstacles should not be too difficult to overcome.

SECTION 4. CONCLUSION AND NEXT STEPS

4.1 Summary of Conclusions

In summary, we have concluded that, based on our understanding of current practices of regulatory agencies and comparison agencies, and based on the "state of the art" of risk-based cleanup approaches, there is a path for HUD to be able to accommodate risk-based cleanup in Multifamily Housing projects – and we recommend that Multifamily Housing do so. We also recommend that the Office of Housing be willing to accommodate environmental risk as an additional area of risk to its portfolio, and permit environmental remediation to be a mortgageable expense. Other public agencies and for-profit private companies are able to do so, and thrive financially.

Multifamily Housing should *not* make these changes unless it is willing to invest resources in technical expertise on site contamination, in order to provide an analytic base for making decisions on a site-by-site basis. Areas of expertise should include environmental engineering and financial risk. These experts should report to HUD, not the lender or the developer. HUD should also deploy that expertise to analyze risk to its overall portfolio, as a result of an increased potential to foreclose on properties where contamination is on-site. Without addressing these last matters, it would not be unreasonable for HUD to remain restrictive its overall approach.

Even if HUD does not choose to make explicit that it will accommodate institutional and engineering controls, but leaves their approval as exceptional cases, we still advise HUD to upgrade its access to technical expertise so as to apply greater rigor to the analysis of these exceptional cases and how they might affect HUD's exposure to risk.

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APPENDIX B: INTERVIEW PARTICIPANTS

Task 1: State-of-the-Art Risk-Based Cleanup

Name	Organization	Title
Alvaro Alvarado	EPA Region 3	Toxicologist/Risk Assessor
Scott Dunkelberger	Pennsylvania Department of Community and Economic Development (PA CED)	Grants Manager
Chuck Epperson	Texas Natural Resources Conservation Commission (TNRCC)	Manager, Texas Voluntary Cleanup Program
Bill Hayes	Indiana Department of Environmental Protection	Risk Assessor, Remediation Branch
David Hess	Pennsylvania Department of Environmental Protection (PA DEP)	Chief, Voluntary Cleanup and Recycling
Stan Hitt	EPA Region 6	EPA Region 6 Brownfields Coordinator
Jennifer Hubbard	EPA Region 3	Toxicologist
Eric Johnson	EPA Region 3	Chief, Technical Support Division
Drew Lausch	EPA Region 3	Brownfields Technical Coordinator
Paul Lewis	Texas Natural Resources Conservation Commission (TNRCC)	Technical Specialist
Joe Odencrantz	Tri-S Environmental	Principal Environmental Engineer/Environmental Consultant
Pat Pantoriero	Harding ESE	Principal Geologist / Environmental Consultant
Linda Watson	EPA Region 3	Toxicologist/Risk Assessor

** In alphabetical order*

Task 2: HUD

CPD Staff	Title	Date of Interview
Richard Broun	Director, Office of Community Viability	November 27, 2001 and June 21, 2002
Antoinette Sebastian	Senior Environmental Planner, Office of Community Viability	June 19 and 20, 2002
Kathleen Naymola	CPD Division Director, New Jersey State Office	June 27, 2002
John Hood	General Engineer, Office of Community Viability	July 10, 2002
Eugene Goldfarb (Field Staff, not CPD)	Senior Environmental Officer, HUD Illinois State Office	June 12 and 13, 2002
Robert Goulka	Office of Affordable Housing Specialist	July 10, 2002
PIH Staff	**Title**	**Date of Interview**
Bob Barth	Team Leader, Office of Grants Management	December 4, 2001 and June 7, 2002
Ainars Rodins	Director of Special Applications Center	July 25, 2002
Daniel O' Connell	Public Housing	December 6, 2001
Michael Boyd	ONAP Denver Program Office, Grants Management	June 26, 2002
Eleny Ladias	Director of Technical Services Division	August 8, 2002
Bill Thorson	Capitol Improvements	July 19, 2002
Office of General Counsel	**Title**	**Date of Interview**
Chris Hartenau	General Counsel	April 3 and 8, 2002
Housing Staff	**Title**	**Date of Interview**
Eric Axelrod	Environmental Clearance Officer	November 29, 2001; July 3, 9, and 11, 2002
Eric Stevenson	Directory of Policy Division, Multifamily Development	July 12, 2002
Mary Owens	Supervisory Project Manager and Team Coordinator, Multifamily Housing Division, Detroit Field Office	July 5 and 10, 2002
Roger Lewis	Supervisory Project Manager, Seattle Multifamily HUB	July 17, 2002

Bill Hill	Director of Asset Management Policy and Participation Standards, Multifamily Asset Management	August 8, 2002
Ed Hinsberger	Chicago HUB Director, Multifamily Housing	June 12 and 13, 2002
Laurie Maggiano	Director of Asset Management and Disposition, Office of Single Family Asset Management	July 22, 2002
Karen Birdsong	HUD Santa Ana Homeownership Center, Single Family	July 29, 2002

Task 3: Other Development Agencies

Organization	Interviewee/Title	Date of Interview(s)
PNC Financial Services Group	William Muzychko VP, Environmental Services Chair, Risk Management Committee of the Environmental Bankers Association	May 7, 2002
California State Housing Finance Agency	Linn Warren Director of Multifamily Programs	March 27, 2002 May 15, 2002
Department of Agriculture – Rural Housing Service	Sue Wieferich Environmental Protection Specialist	April 1, 2002
Department of Commerce – Economic Development Administration	Frank Monteferante Director of Compliance Programs Compliance Review Division	April 11, 2002
	Jonathan Markey Regional Environmental Officer Region 6 (Dallas) Office	May 17, 2002
Department of Defense – Base Realignment and Closure Program	Shah Choudhury Office of the Deputy Under Secretary of Defense for Installations and Environment	March 28, 2002 April 2, 2002
	Bill Judkins Department of the Navy	May 20, 2002
Environmental Protection Agency3	Renee Wynn Deputy Federal Facilities Restoration and Reuse Office	April 10, 2002
	Bernadatte Rappold Acting Director Site Remediation and Enforcement Federal Facilities Enforcement Office	April 25, 2002
	Greg Snyder Director Planning, Prevention Compliance Assistance Federal Facilities Enforcement Office	May 3, 2002

	David Cooper Senior Environmental Scientist Office of Emergency and Remedial Response	May 3, 2002
	Mike Bellott Environmental Scientist Office of Emergency and Remedial Response	May 15, 2002
Federal Home Loan Mortgage Corporation	Mike Patterson Director Credit Oversight and Risk Management Multifamily Division	April 18, 2002
General Services Administration – Public Buildings Service	Ando Mirendi Environmental Engineer Region IX	April 10, 2002
Department of Veterans Affairs – Office of Home Loan Guaranty	Gerry Kifer Staff Real Estate Appraiser	March 28, 2002

APPENDIX C: INTERVIEW QUESTIONS

Task 1: State-of-the-Art Risk-Based Cleanup

A. Background

1. What is your role in the development and redevelopment of sites where land contamination has been discovered?
2. Are the majority of sites: 1) contaminated (after comprehensive testing), 2) not contaminated (after comprehensive testing), 3) may have contamination (unknown)?
3. Does the discovery of site contamination ever stop a project?
4. Briefly describe a "typical" housing or mixed-use project time line from property acquisition through construction (assume land contamination is discovered).
5. Briefly describe the process for environmental approvals (permits, institutional controls)?

B. Determination and Use of Cleanup Standards and Risk-Based Cleanup

6. Is the cleanup decision based on the intended land use (i.e., residential, commercial, industrial)?
7. Do the cleanup levels vary from project to project? If so, why?
8. Briefly describe the nature or basis of the standards (e.g., RBCA, EPA guidelines (Region 3 or 6), Soil Screening Guidelines, etc.)
9. Are levels calculated using screening equations or determined from predetermined values (tables)?
10. How would you categorize the type of cleanup standards that are applied?
11. How widely is the use of risk-based standards applied to projects?
12. How do you define risk-based cleanup?
13. How were the standards developed? And how long have these standards/this approach been in place? Have they been successful?
14. Who makes decisions concerning the required level of cleanup for projects? Does it differ if the project is residential?
15. Are residential standards only met when the site's future land use is intended to be residential? Or do some applicants choose to remediate to these standards regardless of the intended land use? (From the point of view of health and safety, is it acceptable to have less-than-background cleanups when housing is being built?)
16. Is cleanup limited to soils and structures, (such as buildings), or is groundwater a concern also?
17. Are engineering and institutional controls allowable for all types of projects, including residential developments?

C. Public-Health Protectiveness

18. Are cleanup levels explicitly set to meet specific risk targets (e.g., 10-6 cancer risk)? In other words, is there a specified level of risk for each predefined standard?
19. Do the current standards result in cleanups that are perceived as being appropriately protective by stakeholders?

20. Is setting a cleanup standard often an issue of major concern? (e.g., is there often disagreement among regulatory and housing agencies, local governments, developers, lenders, the public?)
21. Are the current standards perceived as being more, less, or similarly protective, compared to past approaches (Do you have any data to support this impression?)
22. Do the current standards result in cleanup costs that are reasonable given the levels of risks?

D. Cleanup Costs and Timeliness

23. Does the agreement of cleanup standards often (ever?) delay projects or increase their costs?
24. Can you give examples, estimates of typical delays, types of costs? (this might be in terms of cost savings or cost overruns?)
25. Is cleanup often a significant proportion of total project costs?
26. Generally, what proportion of total project costs is associated with site cleanup?
27. Does the cleanup process itself often significantly delay project completion?
28. Does the current approach effect the length of time for project completion? (If so, can you provide any examples?)

E. Other Advantages, Disadvantages

29. Are there any other features of the current standards that improve project quality or reduce costs?
30. Do you have any concerns with the current cleanup standards, as they are currently applied?

F. Comparison to Historical Approaches

31. What difference have you seen since risk-based cleanup has been applied? If this is not a risk-based cleanup, then how has site cleanup changed since the current approach has been initiated?

In terms of site cleanups for residential development, have the standards (or allowances of ICs) changed over the last few years, and if so, why?

Task 2: HUD Field Staff

Interviewee Responsibilities

1. Please describe your day-to-day duties.
2. Who do you report to?

Organization-Specific Questions

3. Please briefly describe the programs your office administers.
4. Please name the notices and environmental review guides used for each program your office administers.
5. Under which programs are site contamination problems likely to be encountered?
    a. How often do you encounter site contamination issues?
    b. When do you encounter them?
6. The following activities are *eligible* costs according to program rules:
    a. Payment for studies by environmental professionals to identify and evaluate site contamination (i.e., TSA, Phase I, Phase II Site Assessments)
    b. Cleanup of contaminated sites?
    c. Mitigation and monitoring activities
    d. Other
7. Are you responsible for completing Transaction Screen Analyses (TSA), and Phase I or Phase II Environmental Site Assessments? (Yes/No) If no, who is responsible?
8. Are you responsible for reviewing the contents of TSA, and Phase I and IIs? (Yes/No)
9. Are all activities funded by your office's programs required to have TSA, or Phase I reports? (Yes/No) If no, how is potential site contamination identified?
10. What are the "hot button" issues that attract the most questions/attention from the field concerning site contamination?
11. *When do you need guidance from headquarters? Who do you go to with questions?*

Policies and Procedures

12. *What HUD policies/procedures does your office rely upon for identifying, analyzing, and remediating site hazards?*
13. *Who completes the screening/assessment/remediation/monitoring?*
    a. What criteria or standard is used?
    b. How long does each step take?
    c. When does each step take place?
14. *Who at HUD is responsible for:*
    a. identifying environmental risks (i.e., on-site and off-site contamination that may affect a project)
    b. making decisions about approving or rejecting a project
    c. providing technical assistance about site contamination issues

15. If recipients of HUD assistance are required to provide documentation, is the information verified by HUD?

If interviewee answers NO, proceed to question 16.
If interviewee answers YES, ask the following question.

    a. How is documentation (provided by the recipient) verified by HUD?

16. If a site is rejected due to contamination issues, what is the recourse of recipients?

17. Are the current approaches/policies working in terms of: (Yes/No/Uncertain)
    a. Timeliness
    b. Cost effectiveness
    c. Protectiveness (How clean is clean?)
    d. Training
    e. Coordination with headquarters
    f. Consistency between regions
18. Record keeping – Which records are kept? How? How long? Why?
19. Generally risk based cleanup has to be done to background. Does HUD follow this procedure as well?
20. Do the programs your office administers allow environmental controls? (Yes/No)
21. What standard is used for deciding that a site is sufficiently clean? Does the same standard apply to all types of uses (i.e., housing, commercial/retail, industrial)? (Yes/No/Uncertain)
22. Under what circumstances is a project rejected because of site contamination?

Coordination

23. Do your office's policies and procedures complement those of other offices within HUD? (Yes/No/Uncertain)? If no, where is there a conflict?
24. Do you coordinate with federal, state and local oversight agencies? (Yes/No/Uncertain)

    If interviewee answers NO or UNCERTAIN, skip to "Technical Capacity and Administrative Capability" questions.
    If interviewee answers YES, ask the remaining COORDINATION questions.
    a. Who at HUD or in your office generally coordinates with these agencies?
    b. Where do HUD guidelines fit with state, local, other guidelines, i.e., Do HUD guidelines supercede those of state, local or other guidelines? (Yes/No/Uncertain)
    c. Do your office's policies and procedures complement those of other federal agencies, i.e., EPA, BIA, etc.? (Yes/No/Uncertain) If no, where is there conflict?

Technical Capacity and Administrative Capability

25. What aspect of your job (a HUD policy, guidance, etc.) would you change? How would you change it? Why?
26. We've heard that the ever-decreasing levels of staffing have affected HUD environmental offices dramatically? Has this affected you? If so, how?

Additional Questions for CPD and PIH Staff (specific to Part 58)

27. Under Part 58, the city, county, state, or tribe is the "responsible Federal official" and has decision-making authority concerning site contamination. Are you aware of when controls, or risk based cleanups allowed? (Yes/No)
28. Do you defer to the decisions of these entities concerning all aspects of the site contamination issue? (Yes/No)
29. Please name the programs for which a city, county, state or tribe may not assume environmental review responsibilities under Part 58? For example, CPD Notice 97-7 does not allow states and localities to perform environmental review responsibilities under the Empowerment Zone program.
30. For this study to be useful, what does it need to address?
31. Is there anything you would like to add that I have not asked?

Task 2: HUD Headquarters

Organization-Specific Questions

1. Describe what your office does day-to-day.
2. Have you encountered site contamination issues with programs your office administers (i.e., hazardous materials, contamination, toxic chemicals and gases, and radioactive substances)? (Yes/No) If no, skip to "Policy and Procedures" questions 5 thru 11. If yes, how often do you encounter site contamination issues?
3. When do you encounter them?

Policies and Procedures

4. What HUD policies/procedures does your office rely upon for:
    a. Identifying sites likely to be at risk for site contamination,
    b. Evaluating/analyzing risk once off-site and on-site contamination is identified
    c. Cleaning up site hazards
5. What resources, e.g. databases, HUD environmental officers, oversight agencies, etc., are used (inside and outside HUD) to investigate and evaluate site contamination?
6. Is the implementation of these policies/procedures consistent between Field Offices? (Yes/No/Uncertain)
7. Are your office's policies and procedures for site contamination consistent with those of other offices/divisions in HUD? (Yes/No) If no, where is there a conflict?
8. Which of the following actions are the responsibility of your office:
    a. Identifying risks of site contamination;
    b. Making the decision to approve or reject a project because of site contamination;
    c. Providing technical assistance about site contamination issues
    d. Making environmental risk management policy
9. How often are Transaction Screen Analyses, and Phase I and Phase II Site Assessments completed for projects receiving funding assistance from your programs?
10. Do the programs your office administers allow for in place controls (encapsulation, deed restrictions, etc.)? (Yes/No/Uncertain) If yes, when are site cleanups and controls allowed? If no, what standard is used for deciding that a site is sufficiently clean?
11. Does the same standard apply to all type of uses (i.e., housing, commercial/retail,
12. industrial)? (Yes/No/Uncertain)
13. Are the current policies working in conjunction with project implementation in terms of: (Yes/No/Uncertain)
    a. Timeliness
    b. Cost effectiveness
    c. Protectiveness (How clean is clean?)
    d. Staffing (number of, background, length of time in position for average staff person, qualities of good staff)
    e. Training (of staff)
14. Do HUD guidelines supercede those of state and local guidelines? (Yes/No/Uncertain)
15. What are the rights of recipients of sites that are rejected on the basis of site contamination?
16. Under what circumstances is a project rejected because of site contamination?
17. Record keeping – What records are kept? How? How long? Why?

Coordination

18. Are there programs your office administers at the headquarters level that require assistance from Field Office staff to complete the environmental review process? (Yes/No) If yes, what kind of assistance is expected of the Field Offices concerning site contamination?
19. Is coordination with federal, state and local oversight agencies required? (Yes/No/Uncertain) If yes, who at HUD or in your office generally coordinates with these agencies?
20. Do your office's policies and procedures complement those of other agencies, i.e., EPA, BIA, etc.? (Yes/No) If no, where is there conflict?

Technical Capacity and Administrative Capability

21. We've heard that the ever-decreasing level of staffing has reduced HUD's technical expertise concerning environmental compliance. Has this affected your office's ability to operate effectively? If so, how?
22. *If decreased staffing is an issue:* With decreased staffing, what roles, responsibilities, duties, etc. have been changed, discontinued, redistributed among staff, etc.?

Additional Questions for Environmental Clearance Officers

23. One of our goals is to understand the roles and responsibilities of each of the positions that are involved with site contamination policies. Please describe the people/positions whose day-to-day duties include site contamination issues.
24. How much time do you devote to environmental site hazard issues?
25. Which federal laws and regulations oversee, guide and/or regulate HUD's handling of site contamination issues?
26. What is the criterion for completion of screening/assessment/remediation/monitoring?
27. Who performs these functions? How is it done? How long does it take? When does each step take place?
28. When are site contamination investigations (i.e., screening and assessment) determined to be necessary (and by whom) for each program area (CPD, Housing, PIH)?
29. What are the "current techniques" for investigation that are referred to in section 50.(i)(4)? Do all program areas (CPD, Housing, and PIH) follow the same techniques?
30. Is completion of either a Transaction Screen Analyses or Phase I Site Assessment always required for HUD-assisted projects? (Yes/No) If no, what other method is used for identifying potential site contamination issues?
31. Who issues policy on environmental site hazard issues:
    a. Assistant Secretary of Community Plann9ing and Development
    b. Assistant Secretary of Housing
    c. Assistant Secretary of Public and Indian Housing
    d. CPD Office of Environment and Energy
    e. Program Directors in Field Offices
    f. All of these
    g. Other
32. How is guidance from HUD Headquarters passed on to Field Offices?
33. How often are projects not undertaken or abandoned because of contamination?
34. Are there recurring issues related to environmental site hazards? (Yes/No) If yes, what are they?
35. What standard(s) does HUD use to achieve its objective in Part 50, section 50.3(i)(1), that all properties receiving HUD assistance must be "free of hazardous materials, contamination, toxic chemicals and gases, and radioactive materials"? (How clean is clean?)
36. What recourse do recipients have if their projects are rejected by HUD because of contamination issues?

37. What are the "hot button" issues that attract the most questions/attention from the field?
38. HUD Policy 79-33 implies that only section D. of the policy applies to those programs administered under Part 58 and, specifically, to new development activities. Is similar investigation required for acquisition, lease, rehabilitation and conversion activities? (Yes/No) If yes, what is the policy?
39. Under which programs are site contamination problems likely to be encountered?
40. *For this study to be useful, what does it need to address?*

Additional Questions for the Office of Environment and Energy

41. What are the individual responsibilities of the Environmental Review Division and the Environmental Planning Division?
42. Are you ever responsible for reviewing the contents of Transaction Screen Analyses, and Phase I and II Environmental Site Assessments?

Task 3: Staff from Development Agencies

General Description

1. Please provide a brief description of:

    a. Your organization

    b. What you do

Policies and Procedures

2. Which federal laws and regulations oversee, guide and/or regulate your organization's handling of site contamination issues? (Note to interviewer: Please ask for citations for the regulations so that we can get the documents.)

3. Does your organization have policies and procedures for handling polluted sites? (Yes/No)

4. ***(If yes***)

    Please describe your organization's policies and procedures for handling contaminated sites.

    a. What are your organization's requirements for:

        i. Screening

        ii. Assessment

        iii. Remediation

        iv. Monitoring

    b. Please send me a copy of these policies, or can you tell me where I can find them on the Internet?

5. (If no)

    a. On what policies and procedures do you rely in order to make decisions regarding contaminated sites?

    b. Please describe your processes with respect to:

        i. Screening

ii. Assessment

iii. Remediation

iv. Monitoring

c. Are any of these processes available in hardcopy? (If yes) Please send me a copy of these policies, or can you tell me where I can find them on the Internet?

6. Does your division/office/bureau, etc. within {the organization} have more specific direction or instruction for how to service polluted sites? Examples might include administrative guidance, informal approaches communicated through emails, or agreed-upon approaches?

    a. If yes, could you please describe those to me?
    b. Could you send me copies of relevant guidance or tell me where to find them on the Internet.
    c. How do these policies differ from other divisions/offices/bureaus, etc. within your organization?

7. Would an outsider find your organization's policies and procedures to be easy-to-understand?

    a. In particular, do you have "partners" or "customers" who need to understand these rules, and are they able to understand and implement them easily?

8. Are your organization's policies and procedures consistent and implemented identically in all:
    a. Geographic locations (for example, are there variations by regional office, or by state?)

    b. Organizational sub-part (do different parts of your organization have different approaches to managing environmental issues?)

9. What are the 'hot button' issues related to site contamination that attract the most questions/attention within your organization?

10. If you were to change any of your organization's policies/procedures related to site contamination, what would you change? Why?

<u>Scenario</u>

11. Under what circumstances are you, or is someone else at your organization, most likely to encounter a contaminated site?

12. Let's walk through a scenario (***or each scenario***), using your answer to the previous question. When your organization does _____, and contamination is identified as an issue, what are the steps that your organization must take?

    a. Who (what entity) completes the
        i. Screening?
        ii. Assessment?
        iii. Remediation?
        iv. Monitoring?

    b. What is the process for carrying out a screening or a site assessment?

    c. If contamination is found, how are he remediation and (if necessary) the monitoring carried out?

    d. **(If not yet answered in the first section)** Are there documents that provide guidance on the methods to use for screening/assessment/remediation/monitoring?

        i. If so, may we have copies of those documents?
        ii. If not, how are decisions made on these elements?

    e. What standard do you use to determine when a site is sufficiently clean?

    f. Who determines the degree of health protection used?

    g. What is the *typical* length of time for an entire project to be completed?

    h. Who pays for each step of the process?

13. In your organization's portfolio of current projects, how many projects encounter a contaminated site?

14. Do you believe that your organization's approach (to the development of contaminated sites) leads to cleanup being completed in timely way? Why? How it be improved?

    a. How much time does it take to clean up a typical site? What is the least amount of time it takes to clean a site? What is the most amount of time?
    b. Do contaminated sites lengthen the amount of time it takes to complete a project?

15. Do you believe that your organization's approach adequately emphasizes health protectiveness?

16. Do you believe that your organization's approach is cost-effective?

    a. How much does a typical contaminated site cost to clean up?

b. What is the most expensive project that your organization has ever undertaken? How much was it?

c. Is cost a concern?

17. We're interested in the tradeoffs between timeliness (getting the process completed quickly), health protectiveness, and cost-effectiveness that organizations must face. Of timeliness, health protectiveness, and cost-effectiveness, which is most emphasized at your organization? Why?

18. Do you believe that the environmental policies and procedures in your organization are obstacles to doing the core business of the department? If so, in what way?

Organization-Specific Questions

19. I'm going to read you a list of attributes. Please answer "yes" to the attributes that apply to your organization:

	Yes "x"	**No** "x"
Provider of affordable housing		
Lender whose loans are secured by potentially contaminated property		
Provider of mortgage insurance		
Provider of grants and loans to states and cities		
If yes, provider of grants and loans targeted for community and economic development		
Owner of portfolio of properties, some of which may have contamination		
Service provider in Indian country		
Owner of several sites that require multi-million dollar cleanups.		

20. [To providers of affordable housing]

Let's assume that your organization was hoping to develop a 25-unit apartment building for low-income families on a site that you knew to be contaminated by _____.

a. Please walk me through the process that your organization would take to assess, cleanup and develop this site.

b. Because this property is to be used for multifamily housing, what degree of health protection would be required?

c. Would your organization permit an engineering control (such as a cap) to be used on this property? If yes, what kind of monitoring system would you likely use? Who would be responsible for the monitoring?

21. [To lenders with loans that are secured by potentially contaminated property]

How does your organization try to limit its liability for the costs associated with future environmental cleanup?

22. [To providers of mortgage insurance]

Is your organization potentially liable for cleanup costs?

(If yes) How does your organization try to limit its liability?

23. [To providers of grants and loans to states and cities]

Is your organization potentially liable for cleanup costs?

(If yes) How does your organization try to limit its liability?

24. Are institutional controls allowed in all cases?

25. Are engineering controls allowed in all cases?

26. How often are projects not undertaken or abandoned because of contamination?

27. What is your organization's purpose or mission? (For example, HUD's mission is to "provide a decent, safe, and sanitary home and suitable living environment for every American.")

a. How well does your organization's mission mesh with the site contamination activities such as site cleanup, health protection and economic development? Is this an easy match?

b. Do staff of your organization view site cleanup as a priority, as a required duty, or as an afterthought? (a mix of the responses is ok.)

28. How often does your organization receive guidance from the EPA or Department of Justice regarding contaminated sites? What guidance have you received?

Coordination

How does your organization coordinate with other organizations regarding site contamination? How often does this occur?

APPENDIX D: CLASSIFICATION OF STATE CLEANUP PROTOCOLS FOR SITE CONTAMINATION

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
ALABAMA	No formal RBCA or comparable/informal process in place; state uses EPA's Soil Screening Levels using DAF of 1, Background or EPA's Region III Risk-Based Concentrations table, using the residential numbers for soil and below MCL's for groundwater at sites not using ICs.	✓	✓	✓	✓	✓
ALASKA	Formal, streamlined RBCA-like process in place for VCP that allows default cleanup levels protective of ingestion, inhalation, and migration to groundwater pathways. Site-specific cleanup levels and risk assessment methods are not allowed.		✓	✓	✓	✓
ARIZONA	No formal RBCA or comparable/informal process in place (except that UST program follows RBCA); VRP participants have choice of remediating to background levels, predetermined (residential or non-residential) standards, or site-specific cleanup levels; non-residential require deed restrictions.	✓		✓	✓	✓
ARKANSAS	EPA Region 6 Risk-based Standards applied for intended land use.			✓	✓	✓
CALIFORNIA	State uses site-specific risk-based cleanup standards pegged to EPA Risk Assessment Guidance for Superfund. In addition, DTSC		✓	✓	✓	✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
	has devised a conservative "preliminary endangerment assessment" which can be done quickly, with a hand-held calculator to determine if further site evaluation is required.					
COLORADO	No formal RBCA or comparable/informal process in place; VCP applicants choose from various cleanup standards or perform risk assessments. State allows risk-based closures.			✓	✓	✓
CONNECTICUT	Remediation Standard Regulations in effect since 1/96 apply; they permit use of background concentrations, site-specific conditions, and future property use to determine appropriate criteria. RBCA process was used as a guide for developing the criteria.	✓	✓	✓	✓	✓
DELAWARE	Risk-based standards (but not RBCA) are in place; VCP references a cleanup guide with standards based on intended land use. (sister UST office does use RBCA).			✓	✓	✓
FLORIDA	RBCA-like process in place.		✓	✓	✓	✓
GEORGIA	No formal RBCA or comparable/informal process in place; state superfund law provides applicants a choice between generic and site specific residential and non-residential clean-up standards for soil and groundwater.		✓	✓	✓	✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
HAWAII	RBCA-like process in place; applicant chooses from Tier I, II, or III action levels, depending on end use.		✓	✓	✓	✓
IDAHO	N/A	✓				
ILLINOIS	Formal objectives based on RBCA and US EPA soil screening levels in place; applicant has a choice of clean-up standards.		✓	✓	✓	✓
INDIANA	RBCA-like process in place; state's "Risk Integrated System of Closure (RISC) non-rule policy is currently in its one-year transition period until February 2002, during which time either RISC or VRP standards may be used. The RISC Technical Guide and User's Guide are available.		✓	✓	✓	✓
IOWA	State uses statewide, background, and site-specific standards. Site-specific standards are risk-based.		✓	✓	✓	✓
KANSAS	RBCA-like process in place; applicant can choose from a range of clean-up standards.		✓	✓	✓	✓
KENTUCKY	No formal RBCA or comparable/informal process in place. State Superfund statute provides 4 cleanup options – proving that no action is required; proving that site/release can be managed with institutional controls; removal; or any combination of these three.			✓	✓	✓
LOUISIANA	RBCA-like process in place; applicant can choose the RECAP (Louisiana's RBCA)		✓	✓	✓	✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
	standard, as appropriate to site and reuse.					
MAINE	Draft cleanup guidelines consider three separate exposure scenarios for soil contact: residential, commercial/industrial, and trespasser. Alternatively, a site-specific goal may be established using the state's risk-assessment guidance document. If these options fail, applicants may follow a RBCA-like process, which always includes institutional controls.		✓	✓	✓	✓
MARYLAND	VCP provides a "menu" of cleanup options — uniform risk-based standards, site-specific risk assessment, federal/state soil standards or water quality standards, federal/state MCLs, and other federal/state standards. Site-specific risk assessments follow a RBCA-like process.		✓	✓	✓	✓
MASSACHUSETTS	Risk-based regulatory program in place; offers a choice of a chemical-specific approach with numerical standards, or a cumulative-risk approach based on site specific information.			✓	✓	
MICHIGAN	Risk-based standards in place for soils and groundwater (although not a formal RBCA) in several land use categories — residential, commercial, and industrial, and "limited" uses with ICs. MDEQ may also approve site-specific criteria.			✓	✓	✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
MINNESOTA	State uses a risk-based approach that considers future use.			✓	✓	✓
MISSISSIPPI	The Brownfields program is a tiered risk-based approach to remediation. The approach is reasonable, flexible, while still protective of human health and the environment.		✓	✓	✓	✓
MISSOURI	RBCA-like process in place; applicants can select standards for residential (or unrestricted), commercial, or industrial uses. Cleanup standards are based on current and intended future use of the property.		✓	✓	✓	✓
MONTANA	Choice of cleanup standards available.			✓	✓	✓
NEBRASKA	If cleanup values are not established by statute, such as ground water MCLs Title 118, RBCA or a RBCA-like process is used. This is generally coordinated through a risk assessor at the NE Health and Human Services Systems.		✓	✓	✓	✓
NEVADA	RBCA process in place.		✓	✓	✓	
NEW HAMPSHIRE	Risk characterization and management policy includes a three-tiered risk-based approach. Contaminant-specific generic soil and groundwater cleanup standards are provided in table form; alternatives can be developed based upon site-specific information.		✓	✓	✓	✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
NEW JERSEY	State allows 3 cleanup levels: unrestricted use remedial actions, limited restricted use remedial actions, and restricted use remedial actions; natural attenuation allowed in some circumstances. In any situation, contamination source must be removed.			✓	✓	
NEW MEXICO	RBCA-like process in place; applicants choose from statewide soil guidelines, background concentrations, or a site-specific RBCA-style process. State has developed a "look-up" table for soil contaminants.		✓	✓	✓	✓
NEW YORK	Brownfield program does not have a formal RBCA or comparable/informal process in place. The VCP features a RBCA-like process.		✓	✓	✓	✓
NORTH CAROLINA	Site cleanup under the Brownfields Program is only required when necessary to make the site safe for the intended reuse. Site-specific risk-based cleanup standards are used.				✓	✓
NORTH DAKOTA	Cleanup standards are site specific, in the absence of a program.				✓	✓
OHIO	Ohio EPA has developed industrial, commercial, and residential risk-based standards. VAP standards can also be met via property-specific risk assessments or cleaning to background levels.			✓	✓	
OKLAHOMA	RBCA-type process and standards in place; VCP features a risk-based system based on		✓	✓	✓	✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
	the proposed use of the site. DEQ uses a three-tiered approach: (1) sampling data is compared to screening levels; (2) if data higher than screening levels, state will generate default levels using EPA RAGS-based methodology; or (3) applicants may choose to conduct a full risk assessment and make a case based on those levels (which the state may or may not accept).					
OREGON	Applicant has a choice of approach (i.e., removal or institutional controls), but the same $1x10^{-6}$ standard must always be met. Applicants can use standard or site-specific RBCA-style assessment approaches.		✓	✓	✓	✓
PENNSYLVANIA	No formal RBCA or comparable/informal process in place; applicant has a choice of background, statewide health, or site-specific standards. "Special industrial area" provisions may apply to VCP cleanups at sites used prior to enactment of Act 2, in 1995.			✓	✓	✓
RHODE ISLAND	Standards based on risk and potential reuse.			✓	✓	✓
SOUTH CAROLINA	No formal RBCA or comparable/informal process in place; state generally uses EPA Region III Risk-based Concentration Tables as cleanup guidance. Applicants can choose from risk-based concentrations, background concentrations, and site-specific assessment			✓	✓	✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
	standards.					
SOUTH DAKOTA	N/A	✓				✓
TENNESSEE	No formal RBCA or comparable/informal process in place, but risk-based cleanups can be done via a "Site Specific Risk Assessment," with standards based on risk. Applicant can also request or develop a standard based on future use.			✓	✓	✓
TEXAS	Formal RBCA process in place; VCP provides the applicant with a choice of standards.		✓	✓	✓	✓
UTAH	No formal RBCA or comparable/informal process in place. Applicant has a choice of cleanup standards, including: background values, generic risk-based levels, site specific risk-based levels not relying on ICs, site-specific risk-based levels which rely on ICs, and others based on consultation with DEQ. A RBCA process is in place for petroleum contamination (under the LUST Program).			✓	✓	✓
VERMONT	No formal RBCA or comparable/informal process in place. State uses EPA RBCs as screening values, and allows for site-specific or risk-based evaluations of alternative standards.			✓	✓	✓
VIRGINIA	RBCA-like process in place; applicants have a choice of remediation standards — Tier I		✓	✓	✓	✓

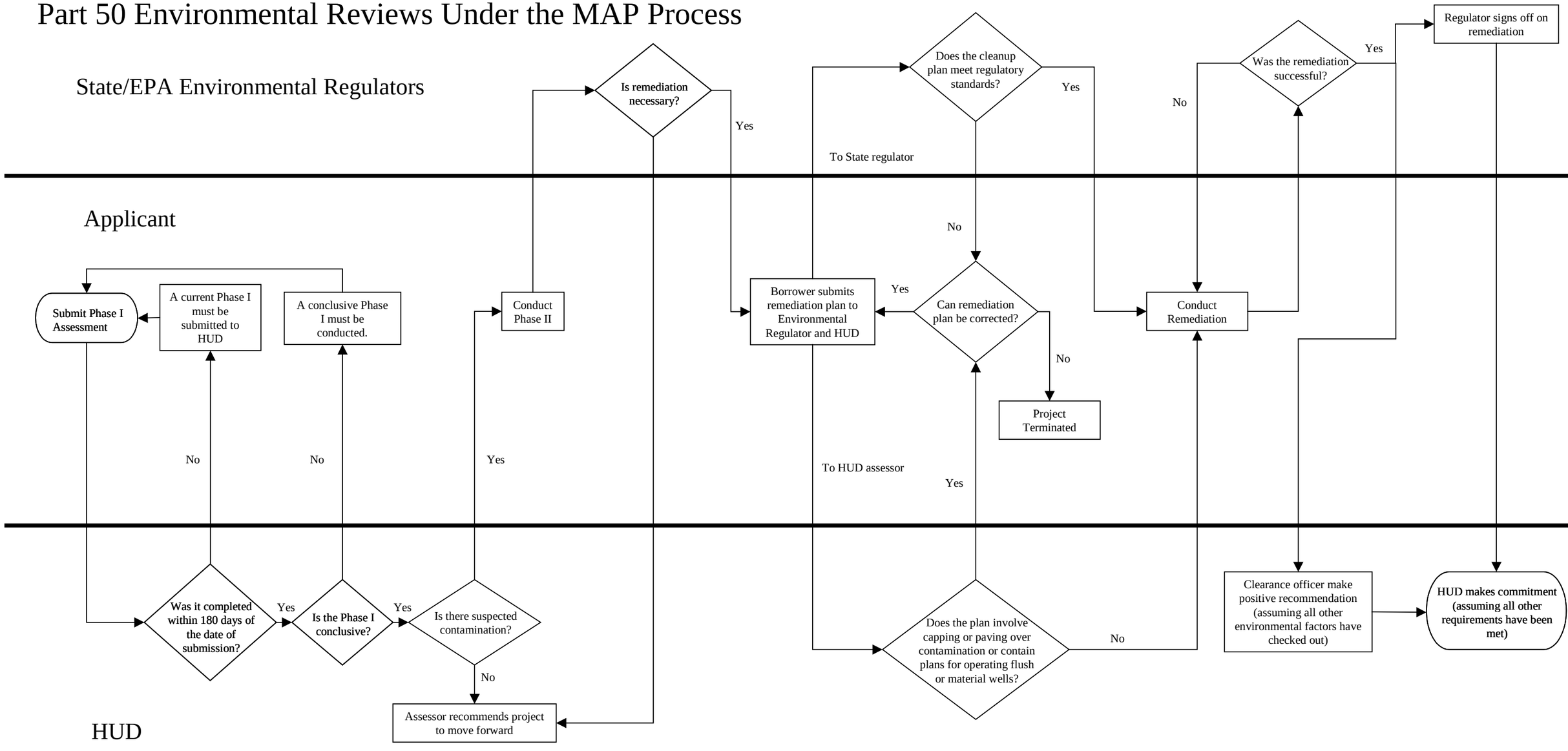
State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
	(background), Tier II ("look-up" values adopted/modified from EPA standards), or Tier III (risk-based, including ICs).					
WASHINGTON	Applicant has a choice of clean-up standards, including risk-based standards, although they are not based on RBCA. They are in state law and regulation.			✓	✓	✓
WEST VIRGINIA	N/A	✓				
WISCONSIN	Wisconsin has performance based cleanup standards (NR 700 rule series) that apply to all cleanup sites including VPLE sites. RBCA-like process is in place; applicants have a choice of cleanup standards for soil contamination — numeric values in regulation; site-specific cleanup standards; or risk-based performance standards. Groundwater must meet enforcement standards or demonstrate it will meet standards.		✓	✓	✓	✓
WYOMING	Draft standards table for unrestricted cleanup scenarios is currently under development. Framework also under development for establishing standards for restricted cleanup. All sites are required to meet drinking water standards for hazardous constituents in groundwater, and to maintain class of use for nonhazardous constituents. DEQ may set			✓		✓

State	Cleanup Standard Currently in Use[a]	No Risk-Based Cleanup	Tiered Approach	Screening / Cleanup Levels from Look-up Tables	Cleanup Levels from Screening Equations	Allowance of Institutional Controls
	alternate standards if it is not technically practicable to meet the primary standards.					
Number and percentage of states utilizing each protocol		**3 (6%)**	**26 (52%)**	**45 (90%)**	**46 (84%)**	**44 (88%)**

[a]Bartsch, C., Dorfman, B., and Deane, R. (2001). Brownfields "State of the States": An End-of-Session Review of Initiatives and Program Impacts in the 50 States. Northeast-Midwest Institute.

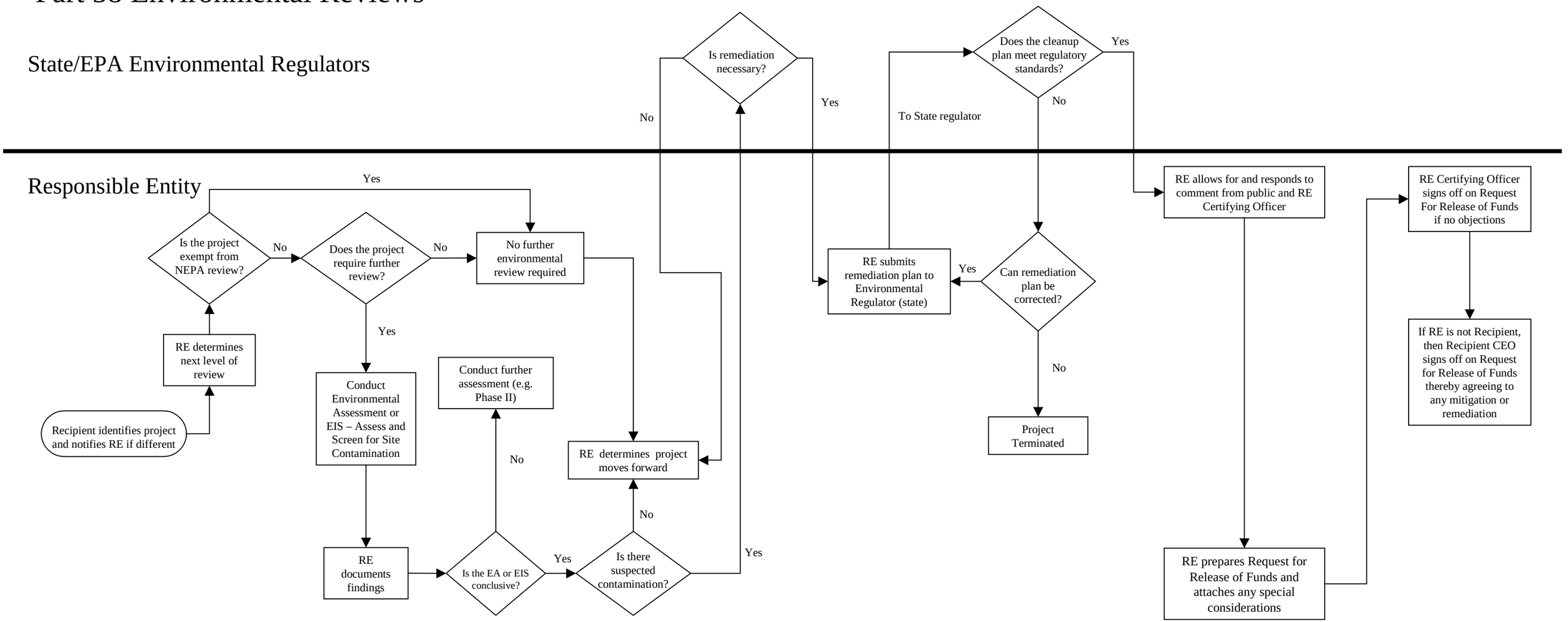
APPENDIX E. ENVIRONMENTAL REVIEW PROCESS MAPS UNDER PARTS 50 AND 58

Part 50 Environmental Reviews Under the MAP Process



Part 58 Environmental Reviews

State/EPA Environmental Regulators



Responsible Entity

APPENDIX F. FEDERAL LAWS

National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) requires that federal agencies consider the environmental consequences of proposed actions. Federal agencies develop their own regulations that provide more detail on how they will implement NEPA. It is typical for these agency-specific regulations to designate the types of actions that fall under each of the three levels of NEPA review: *categorical exclusion, environmental assessment* (EA), and *environmental impact statement* (EIS).

An action that is categorically excluded is one for which an agency has determined does not, by itself or in combination with other actions, have a significant effect on the environment. Most agencies require little or no environmental documentation for such activities. For example, HUD's NEPA-implementing regulations categorically exclude activities associated with HUD's programs to assist homeownership of existing dwelling units (e.g., assistance with closing costs and down payments, and interest "buy-downs,"); and certain types of acquisitions and rehabilitations of public facilities (and some other buildings).[174]

The EA is a concise document (10 to 15 pages) that is used by federal agencies to determine if a proposed action will have the potential to cause a significant environmental effect. For projects involving property acquisition, financing, and disposition, the EA might have to address potential effects related to floodplains, historic preservation, archaeology, and public services, in addition to contamination by hazardous materials. At a minimum, the EA would disclose whether the potential for contamination exists. If the site or building were contaminated, the EA would address the potential effects to human health and the environment associated with construction, renovation, or disposition and any associated remediation. Some amount of public notification and public involvement is required for EAs, depending on the nature of the proposed action and the potential impacts. HUD primarily requires EAs for projects that involve new construction or significant rehabilitation. EAs usually result in a Finding of No Significant Impact (FONSI). If the agency cannot reach a FONSI and they wish to proceed with the proposed action, they must prepare an EIS.

If an agency determines that a categorical exclusion does not apply to a proposed action, the agency would prepare an EA, unless the action would automatically require an EIS.

Agencies typically prepare EISs for large, complex, and controversial projects that would possibly or likely have a significant adverse effect. While agency regulations will indicate specific types of project that require an EIS, many other projects may arise that do not fit under the list of EA or EIS projects. In such cases, agencies have to determine which document to prepare. Failure to prepare an EIS instead of an EA is a heavily litigated issue. However, EISs for HUD projects are rare. They are usually prepared for proposed actions on the scale of a military base closure or the remediation of a large area on a DOE site or the entire site.
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[174] Task 2, which focuses on HUD's policies and procedures with respect to site contamination, provides more detail on HUD's NEPA-implementing regulations.

In terms of NEPA pitfalls, most of the delays or project cancellations associated with NEPA occur on procedural grounds, e.g., failure to consider an adequate range of alternatives, preparing an EA instead of an EIS, or failure to consult with appropriate regulatory agencies. As long as an agency prepares a reasonable analysis of potential impacts that is not arbitrary or capricious, a court will defer to an agency's analysis. The same is generally true for an agency's analysis of alternatives. In addition, agencies should try to satisfy NEPA-equivalent state laws through the NEPA process when appropriate to avoid delays (California, New York, and Washington State are prominent examples).

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) provides broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA also established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also authorized two types of responses. The first response, short-term removal, occurs where actions may be taken to address releases or threatened releases requiring prompt response. The second type of response, long-term remedial response actions, permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

With regard to liability, CERCLA poses strict, joint, several, and retroactive liability for the owner or operator of a site, regardless of whether the party caused the contamination or not. Retroactive liability means that parties are liable for contamination existing prior to the enactment of CERCLA. Strict liability means that the parties are liable for cleanup costs regardless of negligence or intent. Finally, the parties are also subject to both joint and several liability. This means that any of the responsible parties, alone or in combination, are equally liable for the full amount of damages. Anyone who did not perform satisfactory due-diligence of a property (e.g., did not perform a detailed enough investigation of the property, its history, and its ownership) could potentially be held liable for the entire cleanup. In 1996, CERCLA was amended to clarify the definition of the "owner or operator" of a site. Routine lending activities do not constitute participating in the management of a facility, and therefore, lenders cannot be held liable as an "owner or operator" unless they actually participate in the management or operational affairs of a facility. These liability issues dramatically affect development agencies' approaches to obtaining, cleaning and developing a contaminated site.

CERCLA 120(h) deals with issues regarding property transferred by federal agencies. This section outlines the requirements that the Federal government must abide by when transferring federal property. For properties that stored hazardous waste for one or more years, or were known to have hazardous waste released onto, or disposed onto them, certain notices must be placed on the deed. Notices detailing the type and quantity of the hazardous material, the time at which the storage, release, or disposal took place, and a description of the remedial action that was taken, if any, must be placed on the deed. Furthermore, a covenant mandating that all remedial action has been completed and that if any further action is needed, it is the

responsibility of the government must be included with the deed. Section 120(h) also discusses the requirements for transfer of a property in which remediation has not fully completed. Furthermore, Section 120(h) outlines the steps that the government must take to identify a property as being free of contamination.

Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA) establishes a framework for national programs to achieve environmentally sound management of both hazardous and non-hazardous wastes. RCRA promotes resource recovery techniques and methods to reduce the generation of hazardous waste. It is designed to protect human health and the environment, reduce and eliminate the generation of hazardous wastes, and conserve energy and natural resources. To achieve these goals, RCRA establishes three distinct, yet interrelated programs. The first program, the solid waste program (RCRA Subtitle D), encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste. It also sets criteria for municipal solid waste landfills and other sold waste disposal facilities, while prohibiting the open dumping of solid waste. The hazardous waste program (RCRA subtitle C) establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal (i.e., managing wastes from the cradle to the grave) and it sets standards for the remediation of sites with hazardous wastes, without necessarily requiring that cleanup occurs. Finally, under RCRA subtitle I, the underground storage tank (UST) program regulates USTs storing and remediation of releases from petroleum products and other hazardous substances.