
Chapter 9

Environmental Review and Requirements

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9.1 Introduction

This chapter outlines for the lender and HUD staff the policies and procedures that must be followed to meet environmental review responsibilities. An environmental review is the process of reviewing a project and its potential environmental impacts to determine whether it meets federal, state, and local environmental standards and to determine whether the project is environmentally acceptable. The environmental review process is required for all insured projects to ensure that the proposed project does not negatively impact the surrounding environment, and that the property site itself will not have an adverse environmental or health effect on residents.

A. Legal Authorities, Handbooks and Forms.

1. All Federal agencies are required to comply with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) (NEPA), and the implementing procedures issued by the Council on Environmental Quality at 40 CFR Parts 1500-1508. HUD regulations implementing NEPA are contained in 24 CFR, Part 50, "Protection and Enhancement of Environmental Quality." Related Federal laws and authorities are listed in 24 CFR 50.4 and 50.3(i). Under Part 50, HUD may not delegate its environmental responsibilities to others; it is required to prepare the environmental review, make the appropriate environmental finding, and obtain all required review, comment and approvals prior to issuing a Firm Commitment. (See 24 CFR 50.11.)
2. HUD has guidance on complying with environmental requirements at the HUD Exchange Environmental Review website.¹ Housing has additional FHA-specific guidance at the Office of Housing Environmental Review Resources website.²

¹ <https://www.hudexchange.info/programs/environmental-review/>

² <https://www.hudexchange.info/programs/environmental-review/housing/>

3. HUD has established the HUD Environmental Review Online System (HEROS) to document compliance with NEPA and other environmental Federal laws, authorities, Executive Orders, and HUD standards. This system replaced HUD Form 4128 for MAP projects in May 2016. The use of HEROS to document environmental reviews is required under 24 CFR 50.18(a). All required source documentation, including The Phase I Environmental Site Assessment, must be uploaded to the relevant HEROS screens. HEROS source documentation, including but not limited to the ASTM Phase I Environmental Site Assessment, will be made available to the public for one year after HUD issues a Firm Commitment. See Section 9.2.B.13 for details.
4. This chapter cites many standards and guidance documents, such as ASTM standards. These are frequently updated, amended or superseded and as such this chapter may make references that are outdated. Wherever standards or guidance are cited in this chapter, **HUD requires reliance on the most recent edition in force or superseding document.** This also applies wherever sections, chapters, or addenda of the standards or guidance are cited. The comparable sections, chapters, or addenda of the most current version in force should be referenced and relied upon.
5. Requirements in this chapter may exceed those of many State agencies. One reason for this is if a mortgagor defaults on an FHA-insured project, HUD may become the project owner. Under Section 120(h) of the Comprehensive Environmental Response and Liability Act (CERCLA), Federal agencies that own properties are required to take “all remedial action necessary to protect human health and the environment” with respect to known hazardous substances upon disposition of the property. This requirement is beyond any liability releases under State or Federal law and any due diligence requirements under CERCLA.

B . Project Description and Aggregation.

A complete project description is necessary to determine the correct level of environmental review.

1. The project description should capture the maximum anticipated scope of the proposal. All physical aspects of the project, such as plans for multiple phases of development, size and number of buildings, size of parcel, and activities to be undertaken should be included in the description, as well as details of the physical impacts of the project, including whether there will be ground disturbance.
2. HUD must aggregate together related activities when determining what should be included as part of the project. Where a multifamily parcel that secures the FHA mortgage is part of a larger site, the project should be defined as the multifamily parcel plus the parts of the rest of the site that are directly related to the multifamily development (access roads, parking, storm water detention systems, open spaces, utilities, etc.). What gets defined as directly related is contextual; it depends on

project circumstances and may vary from project to project.³ Note that off-site improvements that may be included as part of an aggregated review are not to be considered for the purposes of calculating Davis Bacon wage rates.

- a. For all projects, the environmental review can and often must extend beyond the defined project boundaries in order to comply with the laws and authorities. The area of impact may differ based on the individual 50.3(i) or 50.4 authority under review and the type of activity undertaken. For example, an Area of Potential Effect under Section 106 can extend beyond the boundaries of a project site, especially if a project is in a historic district. Similarly, off-site endangered species may be impacted by the FHA action.
 - b. In most cases, the Lender is required to cover only the FHA collateral parcel for the Phase I Environmental Site Assessment conducted under ASTM E1527-13. (This applies to ASTM E1527-13 in-scope items only). However, the Phase I Environmental Site Assessment must consider the impact of contamination from offsite parcels on the collateral parcel. Remediation would be required for non-collateral areas only to the extent the hazard could affect the health and safety of occupants of the property securing the mortgage or conflict with the intended utilization of the property and as per Section 9.4.G.
3. Housing staff are considering an application for FHA mortgage insurance at a particular site and therefore are limited to considering three alternatives: the action as proposed, modifications within the aggregated project site, or no action, i.e., rejection of the application. This applies to the Environmental Assessment, floodplain and wetland 8-step, and any other law and authority that requires alternative analysis.

C. Level of Environmental Review

All projects submitted under MAP require an environmental review. The level of environmental review varies based on the HUD program and proposed activity.

Projects are categorized by activities into four levels of review under 24 CFR Part 50:

1. Categorically Excluded Not Subject to the laws and authorities at 50.4 (CENST)
2. Categorically Excluded Subject to the laws and authorities at 50.4. (CEST)
3. Environmental Assessment (EA)
4. Environmental Impact Statement (EIS)

In general, the level of environmental review does not directly correspond to the HUD program. For example, a 221(d)(4) substantial rehabilitation project can be reviewed as CEST if below certain thresholds, or as an EA if above those thresholds. The following discussion outlines level of review determinations by HUD program and project specific activities.

1. Categorically Excluded **Not** Subject to Related Laws and Authorities (CENST): 223(a)(7).

³ For examples, visit <https://www.hudexchange.info/programs/environmental-review/housing/#faq>.

HUD has determined programmatically that Section 223(a)(7) projects are categorically excluded, not subject to the laws and authorities at 50.4 as per 24 CFR 50.19(b)(21) other than the flood insurance requirements specified at 24 CFR 50.4(b)(1) and described at Section 9.6.F. Compliance with MAP radon requirements described at Section 9.6.C is encouraged.

2. Categorically Excluded **Not** Subject to Related Laws and Authorities (CENST): 223(f) under limited circumstances.

The categorical exclusion at 24 CFR 50.19(b)(21) also applies to currently HUD-insured Section 223(f) refinancing transactions that will not allow new construction or rehabilitation, nor result in any physical impacts or changes except for maintenance. HUD must determine for each currently insured 223(f) whether the physical impacts meet the environmental definition of the term ‘maintenance’ and must document this in the description of the proposed project in the project summary screen in HEROS.

- a. For environmental review purposes, the term “maintenance” means an activity that slows or halts deterioration of a building and does not materially add to its value or adapt it to new uses. A more detailed explanation including examples is found in in “Guidance for Categorizing an Activity as Maintenance for Compliance with HUD Environmental Regulations, 24 CFR Parts 50 and 58.”²
- b. Note that this definition of maintenance is specifically for environmental review purposes. Please see Chapter 5.1 for definitions of alterations and repairs that apply for other program purposes.
- c. The flood insurance requirements specified at 24 CFR 50.4(b)(1) and MAP Guide Section 9.6.F are still applicable, as are the Lead Based Paint requirements discussed in Section 9.6.A. Compliance with MAP radon requirements described at Section 9.6.C is encouraged.

3. Categorically Excluded Subject to Related Laws and Authorities (CEST): 223(f).

Pursuant to 24 CFR 50.20(a)(5), the purchase or refinance of housing or medical facilities under section 223(f) of the National Housing Act is categorically excluded from NEPA but still subject to the laws and authorities listed at 24 CFR 50.4.

- a. Almost all 223(f) projects will be CEST, with two limited exceptions:
 - i. Currently HUD-insured Section 223(f) refinancing transactions that will not incorporate new construction or rehabilitation, nor result in any physical impacts or changes except for maintenance as discussed in Section 9.1.C.2; or
 - ii. Extraordinary circumstances with the potential for a significant impact (see 24 CFR 50.20(a) and (b)).

² HUD Notice CPD 16-02:
<https://www.hudexchange.info/resource/3197/guidance-categorizing-activity-as-maintenance-environmental-regulations-24-cfr-parts-50-and-58/>

- b. CEST projects must comply with all of the laws and authorities listed in Section 9.3.A. Projects must also comply with the requirements related to Nuisances and Hazards in Section 9.6.S. unless otherwise noted in the guidance.
 - c. For 223(f) projects that include new construction of accessory structures or ancillary improvements, the level of review remains the same as a traditional 223(f) refinance (CEST), but because the project will include ground disturbance, there is a greater risk of environmental impact. The project description must include the extent of the ground disturbance and the HEROS review must consider the laws and authorities at 24 CFR 50.4 and Section 9.3.G.1 in the context of new construction, including:
 - i. Consultation with federally recognized tribes in addition to the State Historic Preservation Officer (SHPO) under the National Historic Preservation Act.
 - ii. Noise assessment and mitigation as required if the new construction is a noise sensitive use.
 - iii. Above Ground Storage Tank requirements for new construction.
 - iv. Airport clear zone requirements for new construction.
 - v. The 8-step analysis for construction in a floodplain or wetland.
 - vi. Consideration of Endangered Species, Farmlands, Sole Source Aquifers, Wild and Scenic Rivers, Coastal Zones and Air Quality.
4. Categorically Excluded Subject to Related Laws and Authorities (CEST): rehabilitation under 221(d)(4), 220, 231 and 241(a) under limited circumstances.

Rehabilitation projects under the 221(d)(4), 220, 231 or 241(a) programs may also be reviewed as CEST if they are not considered substantial rehabilitation under HUD’s environmental regulations (see 24 CFR 50.20(a)(2)(ii)).⁴ Note that for environmental review purposes, the term “substantial rehabilitation” refers to rehabilitation that does not qualify as CEST in 24 CFR 50.20(a)(2)(ii). Please see Chapter 5 for a definition of substantial rehabilitation that applies for FHA program purposes.

- a.—Projects that exceed the 50.20(a)(2)(ii) thresholds are considered substantial rehabilitation for purposes of the environmental review and must complete an environmental assessment. Projects at or below these thresholds may complete a CEST level environmental review documenting compliance with the related laws and authorities at 24 CFR 50.4 and Section 9.3.G.1 and the requirements related to Nuisances and Hazards in Section 9.6.S unless otherwise noted in the guidance.
- b. In order to consider a CEST level environmental review for a rehabilitation project under the 221(d)(4), 220, 231 and 241(a) programs, lenders must document and HUD staff must confirm that the project meets the categorical exclusion threshold in the description of the proposed project in the project summary screen in HEROS. In the absence of this documentation, rehabilitation projects under these programs will

⁴ Current regulations define rehabilitation for multifamily residential buildings as CEST if unit density is not changed more than 20%, the project does not involve changes in land use from residential to non-residential; and estimated cost of rehabilitation is less than 75 percent of the total estimated replacement cost after rehabilitation. Projects should refer to the latest CEST regulations.

require an environmental assessment level of review.

5. Environmental Assessment (EA).

All 221(d)(4), 220, 231 or 241(a) new construction projects and rehabilitation projects that fall above the Part 50 definition of substantial rehabilitation as discussed in 9.1.C.4 require an Environmental Assessment. Environmental Assessments must include all of the laws and authorities listed at 24 CFR 50.4 and Section 9.3.G.1, Additional Nuisances and Hazards at Section 9.6.S and the Environmental Assessment requirements at Section 9.6.T.

6. Environmental Impact Statement (EIS).

Projects over 2500 units require an Environmental Impact Statement, as discussed at 24 CFR 50.42(b). Contact HUD staff immediately if the project is close to 2500 units.

7. The Section 213 Cooperative Housing Program follows Traditional Application Processing (TAP), not MAP. Section 213 projects must follow environmental review thresholds as discussed in 24 CFR 50.20 and described in Sections 9.C.4. and 5.

D Local, State, Tribal or Federal Laws.

1. The acronym LSTF as used in this chapter refers to “local, state, tribal or Federal”.
2. In cases where state or local laws, tribal laws, ordinances, codes or regulations are more restrictive than Federal requirements, the borrower must comply with the stricter local or state standard unless Federal law states otherwise. An Application for Firm Commitment does not relieve an owner of responsibility for compliance with state or local requirements.
3. HUD will not assume any responsibility with respect to inspection, enforcement, interpretation or determination of compliance with such state or local requirements.
4. Where the project is located on a Native American reservation, the tribal authority may assume the responsibilities of the state or local environmental protection agencies.
5. This chapter is not a substitute for requirements in the laws, regulations, and Executive Orders regarding environmental analysis and mitigation.

9.2 Procedures

A. Lender Responsibilities.

1. The lender must submit an environmental report to HUD using the HEROS system for all projects submitted under MAP. The HEROS submission must follow the requirements as described in this Chapter 9. The failure to submit a complete environmental report,

including applicable supporting documentation, may cause delays in the environmental review process.

- 2 The lender must identify any environmental issues to be resolved in the HEROS submission and in the Lender Narrative including a plan accompanied by a timeframe to resolve identified issues, cost estimates and identification of those responsible for implementing the plan. To the extent possible, all environmental issues should be resolved prior to submission of the application. HUD will not upload the Lender Narrative to HEROS.
3. HUD environmental policy requires that there be a limitation of certain activities or actions by any direct or indirect parties⁵ to the transaction from the time of pre-application (or application for straight to Firm deals) until HUD has completed the environmental review process. Specifically, no action concerning the proposal shall be taken prior to completion of the environmental review which could: (1) have an adverse environmental impact, (2) limit the choice of reasonable alternatives, or (3) prejudice the ultimate decision on the proposal. Activities that limit the choice of reasonable alternatives include an action or commitment to repair, rehabilitate, construct, demolish or clear the site.
 - a. Certain actions are permitted prior to the completion of an environmental review, such as development of plans or designs, or performance of other work necessary to support an application for Federal, State or local permits. Planning activities include rezoning, platting or replatting. Site studies and assessments that will not have an environmental impact include Phase I and Phase II Environmental Site Assessments, wetlands delineations, and minimal associated soil borings. Ground disturbing activities beyond minimal soil borings or minimal archaeological tests for site assessment purposes are choice limiting actions and cannot be taken prior to completion of the environmental review.
 - b. Existing multifamily residential properties may continue normal operations during the FHA application process including leasing to new tenants, completing maintenance and repairs related to unit turnover, and drawing from reserve for replacement accounts for regularly scheduled or emergency repairs. Existing properties may not undergo critical or non-critical repairs that are included as part of the FHA application for mortgage insurance prior to a completed environmental review.
 - c. Other actions are strictly prohibited until an environmental review is completed, such as demolition, modification of a wetland, or actions that adversely affect a historic property. Pursuant to the “anticipatory demolition” requirements of Section 110(k) of the National Historic Preservation Act (54 U.S.C. 306113), even before application

⁵ Direct or indirect parties include the lender, borrower, developer and related partners.

submission takes place, any action by a potential lender or borrower, or any action by another party that the lender or borrower has the legal power to prevent, that is taken with the intent to avoid Section 106 review and that significantly adversely affects a historic property, could result in rejection of an application.

- d. If a project has received an encouragement letter or invitation letter after a concept meeting or submission of a pre-application, respectively, and an application is not submitted for mortgage insurance by the lender within the approved timeframes, or is submitted for mortgage insurance but withdrawn by the lender prior to the issuance of a commitment to insure, then the project is no longer federalized. If the project is resubmitted for mortgage insurance at a later date, then any environmental compliance concerns noted by HUD during the project's original concept meeting/pre-application/firm commitment application must be addressed at re-submission. The revised application must describe any actions taken at the project site post HUD review that might have adversely affected or otherwise threatened compliance with any originally noted environmental concerns. These actions, if taken by the owner, may impact the acceptability of the project and may result in rejection of the re-submission.
- e. If any party is unsure as to whether an action would fall within such limitations it should seek advice and possibly approval by HUD.
- f. This section does not change the long-standing FHA prohibitions on any construction (other than outlined in Section 9.2.A.3. a and b) after a concept meeting without HUD approval. The lender must instruct the developer that modification of the site (e.g. grading, clearing, filling) post concept meeting is expressly prohibited.
- g. These restrictions apply to early start of contractually related construction activities discussed in Chapter 12 and pre-endorsement improvements discussed in Chapter 5.8.

B. HUD Staff Responsibilities.

1. In accordance with 24 CFR 50.32, HUD, not the lender, is responsible for independently evaluating the information supplied by the lender in HEROS, supplementing that information as needed, and making the required findings in HEROS as the environmental review record for the project. HUD will determine whether the proposed project site is out of compliance with applicable laws, Executive Orders, or regulations or otherwise would endanger residents' health or safety or put FHA mortgage insurance or the U.S. Government at financial risk or liability.

2. HUD staff shall promptly notify the lender that it will take appropriate action to ensure that the objectives and procedures of HUD environmental policy are achieved if it becomes aware that an action subject to limitation as discussed in Section 9.2.A.3 has taken place or may be about to take place.
3. Trained HUD staff must review the documentation submitted by the lender and must make a site visit. The site visit will help validate the information provided in the HEROS Environmental Report. HUD staff should use the latest Multifamily Site Assessment Form to prepare for and document the site visit. HUD staff will analyze each response, conduct consultation when required, supplement the lender's documentation as needed, and make the required findings in HEROS. As part of its environmental review responsibilities, HUD may require additional environmental material from a lender, such as a Phase II Environmental Site Assessment or a Biological Evaluation, even when the lender might not believe that such additional environmental material is necessary.
4. HUD staff must certify the completed environmental review in HEROS as the preparer. The Approving Official for the program must also certify the HEROS environmental review.⁶
5. Regulation 24 CFR 50.32 requires that Environmental Assessment level reviews for projects with more than 200 units (or as specified at 24 CFR 50.32) be sent for review and comment to the Regional or Field Environmental Officer (REO/FEO) in whose jurisdiction the project is located. The REO/FEO must also review and comment on Environmental Assessment level new construction projects or projects that convert land uses to residential when noise is in the unacceptable noise zone (above 75 DNL (a weighted day-night average sound level)). Neither requirement applies to categorically excluded projects.
6. The REO/FEOs are the regional experts on environmental review requirements and should be consulted for technical assistance on complex environmental issues such as projects in the normally unacceptable noise zone; projects in a floodplain or wetland, particularly when the project uses the incidental exception discussed in Section 9.6.E.4; projects with an adverse effect on historic properties including archaeological resources; projects with contamination issues; or any other environmental issue that requires specialized knowledge or a mitigation plan to resolve potential impacts. REO/FEOs should review special environmental conditions in the Firm Commitment, particularly when they have given technical assistance on an issue.
7. Housing staff are strongly encouraged to consult with the REO/FEO (regardless of the number of units) for CEST and EA projects:
 - a. Located on or adjacent to a designated Superfund Site or a Formerly Used Defense Site (FUD).

⁶ The Production Division Director is the Approving Official for MF Production.

- b. That have an unresolved contamination issue with the potential to affect the health and safety of occupants.⁷ For example:
 - a.—An ASTM Phase I or Phase II Environmental Site Assessment (ESA) indicates a release or threat of release of hazardous substances or petroleum products but does not identify a Recognized Environmental Condition (REC), or
 - b. There is current or proposed remediation, mitigation or monitoring at the site; or
 - c. Issues are raised in the Phase I or Phase II ESA but not addressed in the mitigation plan.
 - c. Located on or directly adjacent to a parcel with a floodway.
- 8. When Housing staff determine they should or must consult with the REO/FEO, they should do so at the earliest possible time after receipt of the required information from the lender. Housing staff should also invite REO/FEOs to the concept meeting for new construction projects over 200 units or if there is a complex environmental issue.
- 9. HUD will discuss any environmental conditions in the letter of invitation for Sections 221(d)(4), 220, 241(a) and 231. Any requirements that affect project design will be fully detailed. The lender must assure that any requirements affecting project design are conveyed to the design architect for incorporation into the contract drawings and specifications.
- 10. Housing staff shall ensure that all environmental conditions are identified, any required mitigation plans are approved and the environmental review in HEROS is completed and approved prior to issuance of a Firm Commitment.
- 11. When environmental reviews reveal environmental conditions that require mitigation, HUD will require an acceptable plan for mitigation prior to Firm Commitment and will condition the Firm Commitment on completion.⁸ HUD will discuss the requirements for completion of mitigation in HEROS on the Mitigation Measures and Conditions Screen. HUD staff will identify who is responsible for implementing a special condition along with the associated timelines (e.g. by initial endorsement, final endorsement, or ongoing by Asset Management). Mitigation plans must be detailed in the Firm Commitment, Closing Agreement and other relevant documents.
- 12. HUD staff must update and record the completion of the environmental conditions in HEROS using the Mitigation Follow-up Screen. Regional Production Division Directors

⁷ Not including Asbestos, Lead Based Paint or Radon.

⁸ For examples of acceptable conditions to the Firm visit <https://www.hudexchange.info/programs/environmental-review/housing/#faq>.

will determine the appropriate staff positions in each office to review and upload the mitigation resolutions after construction completion and final endorsement. This screen appears only after an environmental review has been marked Completed in HEROS. Note that HEROS will allow HUD to continue editing environmental reviews to document that mitigation measures and conditions are fulfilled.

13. HUD shall distribute completed environmental reviews to those who have requested them. Additional efforts for involving agencies, tribes or the public shall be made when required by the implementing procedures of the laws and authorities cited in 24 CFR 50.4. HUD staff shall also 'archive' HEROS reports at the time the MF office issues the Firm Commitment. This archive step posts the environmental review record and all uploaded documentation online and available to the public for one year.

C. Environmental Review Timing

1. Lenders are required to submit all the exhibits necessary to identify and resolve any environmental issues with the Firm application submission via HEROS. For lenders that use the pre-application process for new construction or substantial rehabilitation proposals, HUD requires the environmental documentation to be submitted via HEROS at pre-application. The purpose of completing HEROS at pre-application is to help make an early evaluation of any environmental issues so HUD can determine if all environmental issues can be resolved or a plan for mitigation approved prior to issuance of the Firm Commitment. The letter of invitation will condition the issuance of a Firm Commitment upon the environmental review finding that there are no unresolved environmental concerns.
2. Certain environmental issues cannot be resolved until the final plans and specifications have been submitted, which may result in HUD finalizing the environmental review during the Firm application rather than at pre-application.
3. Any environmental problems present at the site will require a discussion of impacts to human health and appropriate mitigation measures. The Lender must provide mitigation plans for those environmental problems, as discussed in Section 9.2.A.2.
4. The implementation of mitigation and remediation plans may, with HUD approval, commence prior to initial endorsement or at commencement of and continuing throughout the construction period. HUD will review the lender's plan and make it a condition of the Firm Commitment if HUD considers the plan acceptable.

5. Lenders are strongly encouraged to discuss all known and/or suspected environmental issues and concerns at the HUD Concept Meeting, and HUD staff are strongly encouraged to invite REO/FEOs to the concept meeting as discussed in Section 9.2.B.8.

D. Qualifications of Professionals.

1. The lender will generally select the professionals who prepare the HEROS Environmental Report, the Phase I ESA, or any other environmental information required by HUD, and must verify that the professionals used are qualified for their assigned responsibilities.
2. The Environmental Professional preparing the Phase I ESA must meet the qualification and license/certification, education, or experience requirements of Appendix X2 of ASTM E1527-13.
3. When a Phase II study is conducted, the Phase II Assessor must meet the qualification requirements in ASTM E1903-19.
4. Professionals may be required to evaluate technical areas, such as lead-based paint, asbestos, radon, noise, wetlands, flooding, endangered species, historic preservation, soil stability conditions, engineered fall distances, pipeline hazards, or other areas. Multiple subject matter experts or firms with subject matter experts may be required.

E. Consulting with Regional or Satellite Offices.

Lenders should consult early with Regional MF program staff⁹ on HUD environmental requirements. Local conditions and interagency relations affecting environmental review requirements differ from state to state and from field office to field office. For instance, coastal zone management requirements are not applicable in most states, but in states where they are applicable, compliance procedures differ. In some states, a letter from the state coastal zone management agency for projects in the coastal zone is required but in others, alternative review procedures make this unnecessary. Some states require special licensure of professionals evaluating asbestos, lead-based paint, radon, and soil stability conditions.

9.3 HEROS Environmental Report

- A. The lender must provide information in HEROS regarding compliance with the NEPA environmental factors, the laws and authorities listed at 24 CFR 50.4, and the HUD-specific requirements described herein, as applicable, as well as any issues that might

⁹ For contact information, please see https://www.hud.gov/program_offices/housing/mfh/hsgmfbus/aboutsubpcs.

affect the acceptability of the project, including any issues of compliance with state environmental laws. The HEROS submission and uploaded documentation constitutes the Environmental Report.

- B. The HEROS submission must address each authority at the appropriate level based on the activity and level of environmental review. In cases where the MAP Guide has requirements that go beyond what is required in HEROS, lenders and HUD staff must include MAP compliance on the appropriate HEROS screen.
- C. The Environmental Report must include and appropriately cite supporting documentation. Maps must clearly identify the subject site(s). The failure to submit applicable supporting documentation may cause delays in the environmental review process.
- D. HUD will post its environmental review for one-year post-initial endorsement, including the ASTM Phase I report and all other environmental documentation. These records may be found on the HUD exchange,¹⁰ a public-facing website, for one year after the review is posted.
- E. Lenders and third parties will find information about registering for HEROS, HEROS training materials, and HEROS Guidance for Multifamily FHA Partners at <https://www.hudexchange.info/programs/environmental-review/housing/>.
- F. Sections 9.4-9.6 of the MAP guide provide background information on the laws and authorities and Multifamily Housing specific requirements; more information, including where to find maps and specific compliance steps, can be found on the HUD Exchange Environmental website¹¹ and on the Housing environmental website¹². The MAP summaries do not substitute for the requirements in the statutes, regulations, Executive Orders, and handbooks.
- G. The following environmental issues must be addressed in HEROS, as applicable:

1. Laws and Authorities

- 9.4. Contamination and Toxic Substances (and related Chapter 9.5 HUD Staff Responsibility in Cases Requiring Remediation of Contamination and Toxic Substances).
- 9.6.A. Lead-Based Paint
- 9.6.B. Asbestos

¹⁰ <https://www.hudexchange.info/programs/environmental-review/environmental-review-records/>

¹¹ <https://www.hudexchange.info/programs/environmental-review/>

¹² <https://www.hudexchange.info/programs/environmental-review/housing/>

- 9.6.C. Radon
- 9.6.D. Historic Preservation
- 9.6.E. Floodplain Management
- 9.6.F. Flood Insurance
- 9.6.G. Wetlands Protection
- 9.6.H. Noise Abatement and Control
- 9.6.I. Explosive and Flammable Hazards
- 9.6.J. Air Quality
- 9.6.K. Airport Hazards
- 9.6.L. Coastal Barrier Resource
- 9.6.M. Coastal Zone Management
- 9.6.N. Endangered Species
- 9.6.O. Farmlands Protection
- 9.6.P. Sole Source Aquifers
- 9.6.Q. Wild and Scenic Rivers
- 9.6.R. Environmental Justice

2. Housing and EA Requirements

- 9.6.S. Additional Hazards and Nuisances
- 9.6.T. Environmental Assessment Factors

9.4 Contamination and Toxic Substances

The purpose of the requirements of this section is to identify manmade contamination on a site, other than contamination from in-place building components such as asbestos containing materials (but see Section 9.6.B) or lead-based paint (but see Section 9.6.A), and to ensure that any contamination so identified is mitigated to the point where it would be unlikely to “affect the health and safety of occupants or conflict with the intended utilization of the property” as stated in HUD-wide policy at 24 CFR 50.3(i)(1). Laboratory analysis may reveal naturally occurring contaminants in the pathway vectors (air, water, groundwater, soil or sediment) surrounding the proposed HUD-assisted project at levels that pose a health or safety risk to sensitive receptors. Mitigation might be required depending on the intended use of the proposed project, the direction, the transmissivity, the proximity and the use of the pathway vectors with respect to the location of the proposed project. Specific requirements for radon are described in Section 9.6.C.

Any potential contamination issues should be discussed with HUD at the concept meeting. It is recommended that lenders consult with HUD before preparing an ASTM E1903-19 “Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process (Phase II ESA).”

A. Phase I Environmental Site Assessment (ESA).

1. Submission. The lender must submit a complete and final Phase I ESA with the pre-application or, if the pre-application stage is omitted, with the application for Firm Commitment as part of the HEROS submission. A summary submission is not acceptable. The lender must inform the ESA preparer of all of the following Phase I ESA requirements:
 - a. Purpose. The Phase I ESA will make an initial determination as to the presence or likely presence of “hazardous substances” as defined by CERCLA, and of petroleum and petroleum products. The Phase I ESA can meet EPA’s All Appropriate Inquiry requirements for CERCLA liability protection for the property owner.¹³ However, HUD’s purpose is to document compliance with 24 CFR 50.3(i), which states HUD’s policy that all properties proposed for use in HUD programs 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. This purpose must be described in the “Purpose” subsection to the required “Introduction” Section of the Phase I ESA. To meet this purpose, in addition to the standard Phase I determination of whether Recognized Environmental Conditions (RECs) have been identified in connection with the site, the Evaluation section’s discussion of Findings, Opinions, and Conclusions must state whether further investigation or corrective action is recommended to meet §50.3(i).
 - b. Format. The Phase I ESA must be prepared in accordance with the requirements of ASTM E1527-13 “Standard Practice for Environmental Site Assessments, Phase I Environmental Site Assessment Process”. The Phase I ESA must utilize the table of contents and report format specified in Appendix X4. The Phase I ESA must incorporate a vapor encroachment screen performed in accordance with ASTM E2600-15. The Phase I must clearly indicate that HUD is an authorized user of the report. The Phase I preparer must also be notified that HUD will post its HEROS environmental review online, including documentation such as the Phase I ESA report, for one year following its completion.
 - c. Timing. The Phase I ESA must be conducted (meaning the earliest of the date of the site visit, records review documents, or interviews) within one-year of the submission to HUD. HUD may require updates or additional analysis in specific circumstances. A Phase I ESA that was conducted more than 180 days prior to the submission date to HUD, but within the allowable one-year period, must be updated pursuant to Section 4.6 of ASTM E1527-13. A Phase I ESA prepared more than one year prior to submission to HUD, even if updated within 180 days of being submitted, is not acceptable.

¹³ For more information on the All Appropriate Inquiry Rule, please see <https://www.epa.gov/brownfields/brownfields-all-appropriate-inquiries>

- d. Preparer's Qualifications. The Qualifications section of the Phase I ESA must describe the preparer's qualifications. The Environmental Professional preparing the Phase I ESA must meet all of the qualification requirements of Appendix X2 of ASTM E1527-13.
- e. Findings Section. The Findings section of the Phase I ESA must list all known or suspect Recognized Environmental Conditions (REC), Controlled Recognized Environmental Conditions (CREC), Historical Recognized Environmental Conditions (HREC) and de minimis conditions (such as minor soil staining). The Findings section must also list Vapor Encroachment Conditions (VECs), likely VECs, and circumstances in which VECs cannot be ruled out.
- f. Opinions Section. The Opinions Section must discuss each finding from the Findings section and whether it is a REC pursuant to Section 12.6 of ASTM E1527-13. The justification for any Finding deemed not to be a REC must be included in the Opinions section. If the ESA preparer cannot make a statement as to whether a condition is or is not a REC, the Opinion Section must state what information or further investigation would be deemed necessary to make such a determination. The ESA preparer must also identify any data gaps and state whether the data gaps are significant. When previous remediation has been performed or is ongoing, i.e., not yet an HREC at the proposed site, the Phase I ESA must fully discuss the extent of such remediation in this section of the Phase I ESA, including any involvement of LSTF Authorities. The Phase I preparer must justify whether such ongoing remediation should resolve any RECs or undecided issues identified in the ESA. Note that even if the Environmental Professional preparing the Phase I ESA determines that a Finding does not rise to the level of a REC, HUD may determine that the finding warrants Phase II investigation based on HUD's toxics policy at §50.3(i).
- g. Conclusions Section. The Conclusions Section must make a determination of whether a REC, including a CREC, exists on the site in accordance with one of the two quoted statements at Section 12.8 of ASTM E1527-13.
- h. In addition to the standard Phase I determination of whether RECs have been identified in connection with the site, the Evaluation section's discussion of Findings and Conclusions should state whether further investigation or corrective action is recommended to meet 24 CFR 50.3(i).
- i. User Provided Information Section. The borrower, or the current property owner (if different from the borrower), shall complete the User Questionnaire(s) as per Appendix X3 of ASTM E1527-13 which must be included in the "User Provided Information Section" of the Phase I ESA and the preparer must take into account any information provided in the preparation of the Phase I ESA.

- j. Testing Not Required. The Phase I ESA does not require sampling and testing. A Phase II ESA or remediation plan, if required, would include sampling and testing (see below). If a Phase II ESA had been previously completed at the property, the Phase I must reference and discuss any prior Phase II ESA performed in general accordance with ASTM E1903-19 including whether a condition is a REC.
- k. Vapor Encroachment Screen. The Phase I ESA shall incorporate an initial vapor (a.k.a. gas) encroachment screen following ASTM E 2600-15 to determine if there is a potential for vapors to occur in the subsurface below existing and/or proposed on-site structures. Those hazardous substances may be petroleum and petroleum products that consist of volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), and inorganic volatile compounds. The initial vapor encroachment screen shall be performed using Tier 1 “non-invasive” screening pursuant to ASTM E 2600-15 “Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions, Section 8”. If the Tier 1 vapor encroachment screen determines that, as indicated in ASTM E2600-15, Section 8.7.1, there is a “vapor encroachment condition” (VEC) which is the “presence or likely presence” of such vapors in the subsurface below existing and/or proposed on-site structures, it must be reviewed under the Phase I ESA to determine if it is a REC as per the ASTM E1527-13 standard. Vapor encroachment screen analyses must be included in their own section in the report but also integrated into the findings, opinions and conclusions sections of the Phase I ESA.
- l. Lead-based Paint (LBP) Chips. LBP chips that are not inside or part of a structure may be deemed to be a hazardous substance. Therefore, if there is or was a structure on the site that was built prior to 1978, any evidence of paint chips not inside or part of any current structures must be discussed in the “Site Reconnaissance” section of the Phase I ESA, must be listed in the Findings Section, and must be discussed further as to whether the paint chips are either a REC or a de minimis condition in the Opinions section.
- m. Underground Storage Tanks (UST) containing hazardous waste or petroleum products. The Phase I ESA must identify onsite USTs containing, or previously containing, hazardous waste or petroleum products. For tanks regulated by the state, the Phase I must document that the UST is in compliance with state regulations, including confirmation of tank integrity. For tanks not regulated by the state, HUD will require an integrity test and an O&M plan as discussed in Section 9.4.M. These requirements do not apply to propane USTs.
- n. Previous Remediation. When previous remediation has been performed, or remediation is currently taking place, the Phase I ESA must fully document such remediation, including any involvement from LSTF Authorities, No Further Action letters as discussed at Section 9.4.E.4.c, and narrative descriptions of any on-going remediation work and monitoring. The Phase I ESA must discuss whether the

previous or ongoing remediation is consistent with current applicable LSTF standards.

- o. Evaluation of the ESA. The Phase I ESA will be evaluated by HUD to determine if the property is acceptable for the hazards reviewed. HUD may require additional information, or a Phase II ESA based on findings that indicate an unacceptable risk under HUD's toxics policy at §50.3(i), or an unacceptable business risk. Any Phase I ESA that identifies a REC will require a Phase II ESA, unless it can be determined from the Phase I ESA that corrective action is not feasible. If no corrective action is feasible, HUD may reject the property.

B. Phase II ESA.

1. Purpose. The purpose of the Phase II ESA is to determine if the RECs or risks related to HUD's toxics policy identified in the Phase I ESA have resulted in the presence of hazardous substances or petroleum products that exceed unrestricted use criteria. The Phase II ESA must be prepared in accordance with the ASTM E1903-19, "Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process." The Phase II ESA need not necessarily be a complete site characterization (total nature and distribution) of contamination, but must proceed to a point where it indicates the location of greatest concentration and risk, taking into consideration all of the Recognized Environmental Conditions (RECs) identified in the Phase I ESA or other hazards that affect the health and safety or occupants or conflict with the intended utilization of the property. A Limited Phase II ESA or a Limited Site Assessment is acceptable if it meets the requirements outlined above.
2. Timing. The Phase II ESA shall be submitted with the pre-application or, if the pre-application stage is omitted, with the application for Firm Commitment. It is recommended that lenders consult with HUD before preparing a Phase II ESA.
3. When Required. A Phase II ESA is required if:
 - a. The Phase I ESA indicates that there is a REC; or
 - b. HUD requires a Phase II ESA for reasons that are described to the lender, including that the Phase I indicates an unacceptable risk under HUD's toxics policy at §50.3(i).
4. Exception to Submission Requirement. If it is obvious that remediation will be required, with HUD's approval the Phase II ESA may be incorporated within the "site characterization" segment of the remediation plan referenced in Section 9.4.C.1.
5. Standards to Use. The Phase II ESA shall be performed pursuant to the logic model of ASTM E1903-19, Section 7.4, including developing the conceptual model and validation.

6. Report Format. The Phase II ESA must be prepared in accordance with the requirements of ASTM E1903-19 using the table of contents and report format specified in Appendix X3.2 as amended by X3.3. Some of the steps that a Phase II assessor might perform may be intuitive in nature, but they nevertheless must be documented in the report to demonstrate its scientific validity.
7. HREC. If the Phase I ESA indicates that there is a HREC, as described in ASTM E1527-13, i.e., a hazard has been remedied and an LSTF Authority has issued a No Further Action (NFA) letter or similar approval and as consistent with current applicable LSTF standards, HUD may either deem the NFA as completion of the remediation or it may require a Phase II ESA and/or further remediation. Any ongoing commitments associated with operation, maintenance and monitoring must be incorporated as a condition of the Firm Commitment.
8. Vapor Encroachment/Vapor Intrusion. If it is determined that there is a potential for vapors to occur in the subsurface below existing and/or proposed on-site structures the Phase II ESA shall include either a Tier 2 vapor encroachment screen (per ASTM E2600-15, Section 9), a vapor intrusion assessment (VIA) pursuant to LSTF policy and/or procedure (as discussed in ASTM E2600-15, Appendix X7.1), or go directly to a Tier 4 “mitigation” (per ASTM E2600-15, Appendix X7).

If a Tier 2 screen was performed and it determined that a VEC exists, either a vapor intrusion assessment (VIA) pursuant to LSTF policy and/or procedure or a Tier 4 “mitigation” (per ASTM E2600-15, Appendix X7) is required.

If a VIA was performed, any mitigation (or remediation) deemed necessary must follow LSTF policy and/or procedure or go through a Tier 4 “mitigation” as per ASTM E2600-15, Appendix X7.

9. Phase II Conclusion. The Phase II ESA must conclude that:
 - a. There are hazardous substances as defined by CERCLA, and/or petroleum products and/or other hazards that HUD considers an environmental risk under §50.3(i) at levels that exceed LSTF unrestricted criteria and list any chemicals so found, or
 - b. No hazardous substances, petroleum or petroleum products or environmental risks under §50.3(i) have been identified above LSTF unrestricted criteria.
10. Off-site contamination conclusion. The Phase II ESA must indicate whether there is a risk of off-site contamination migrating on to the proposed site including if:
 - a. There is no known or perceived off-site contamination in the vicinity of the proposed site,

- b. It is unlikely that any known or perceived off-site contamination will migrate on to the site, or,
- c. It is likely that known or perceived off-site contamination will migrate on to the site.

If there is off-site contamination, the preparer must describe the remediation underway for the off-site contamination and whether the remediation has effectively brought migration under control.

- 11. The Phase II ESA written report must describe how it conforms to any applicable LSTF requirements and must include a detailed, common language summary.
- 12. Exception of requirement for Phase II preparation and submission for ongoing remediation. A Phase II ESA is not required when remediation is ongoing to the point of not yet being an HREC (see Section 9.4.A.1.e, above), if the Phase I ESA preparer states that such remediation should resolve any RECs and undecided Phase I ESA issues, (see Section 9.4.A.1.f, above), and if the remediation plan preparer indicates that all of the Phase II ESA requirements have been met. However, an NFA or similar from the LSTF authority must be submitted to HUD as per Sections 9.4.C and 9.4.D or 9.4.E.

C. Remediation Response Planning

If the Phase II ESA confirms contamination on a project site above residential/unrestricted criteria, and/or that offsite contamination will migrate to the site, the applicant must submit the reports to the appropriate LSTF to determine if a remedial response may be necessary. If the LSTF determines further action is required, it may require the applicant to enroll the project site in a federal, state or tribal voluntary clean up or Brownfield program.

The following requirements apply to all remediation plans:

- 1. Site characterization.
 - a. Anytime a site has been identified from a Phase I or Phase II ESA as having contamination (or contamination exposure pathways), be it vapor (gas), liquid, solid, dissolved, or non-aqueous phase liquid (NAPL) above LSTF residential/unrestricted criteria, a site characterization (sometimes known as a special site assessment report, a remedial investigation report, a detailed Phase II ESA, or a Phase III ESA) must be prepared as the initial step of any remediation plan.
 - b. It must determine the total nature and distribution of such contamination, exposure pathways, and potential receptors (a.k.a., a conceptual site model). However, if the remediation plan preparer determines that the Phase II ESA preparer has already determined the nature and distribution of such contamination, exposure pathways and potential receptors, then such determination shall be so indicated, and the Phase II ESA shall be made a part of the remediation plan.

- c. It must be based on LSTF requirements, or on the appropriate combination of ASTM Practices and Guides, as determined by the remediator's environmental investigator.
2. Any remediation studies and plans must be in the form of a report which includes a detailed, common language summary.
3. The remediation plan preparer's qualifications must be discussed in any remediation reports.
4. The remediation plan must cover all relevant contaminant phases: vapor (gas), liquid, solid, dissolved, and NAPL.
5. The remediation plan must require either the removal of contamination to LSTF unrestricted criteria pursuant to Section 9.4.D or incomplete removal of contamination to restricted residential levels in the form of a Risk-Based Corrective Action or other accepted cleanup program pursuant to Section 9.4.E.
6. Any remediation studies and plans must be submitted to HUD with the pre-application or, if the pre-application stage is omitted, with the application for Firm Commitment. Evidence of approval of the remediation plan by the LSTF authority must be submitted with the Application for Firm Commitment. For lenders using the pre-application process, HUD will review remediation plans before an invitation letter is issued.
7. HUD may require that the project implement the remediation plan, including completing clearance testing and obtaining No Further Action letters from the LSTF prior to HUD issuing the Firm Commitment. In these cases, the remediation work cannot take place until HUD completes the HEROS review and approves an early start as per Chapter 12 or pre-endorsement improvements as per Chapter 5.8.
8. If the extent and cost of removing the contamination can be definitively determined, and the cost of removing that contamination can be specified pursuant to a contract for remediation (see Section 9.5), HUD may allow a remediation plan that has been approved by the LSTF authority that:
 - a. Permits the remediation including site testing, any clearance and closure documents, and the approval by the LSTF, prior to Initial Endorsement (as long as HEROS is complete and HUD has approved an early start as per Chapter 12), or
 - b. If the lender can show why it would be impractical to complete remediation prior to Initial Endorsement, permit the remediation including site testing, any clearance and closure documents, and the approval by the LSTF, prior to Final Endorsement and initial occupancy.
9. All residents living regularly and construction workers working regularly on site while remediation is taking place shall be informed of the remediation activities and protected from any potential contamination. This requirement must be a part of the remediation plan.

10. Remediation contract insurance. Unless HUD determines otherwise, the remediation contract shall require cost cap and reopener insurance coverages, copies of which are to be included in the remediation plan.
11. Ongoing Remediation. If remediation is taking place or has been completed but has yet to receive approval by the LSTF at the time of submission of the Phase I ESA, the remediation plan and all remediation studies shall be submitted, along with a detailed common language summary, at the same time as the Phase I ESA.

D. Remediation Plans – Complete Removal of Contamination.

1. Except for situations where Section 9.4.E (Remediation Plans Allowing for Incomplete Removal of Site Contamination) applies, the lender must submit a remediation plan designed to bring the contamination identified by a complete site characterization per Section 9.4.C.1 to LSTF unrestricted criteria levels, with no ongoing active or passive remediation. There must not be any need for engineering controls, institutional controls, or monitoring wells.
2. All of the requirements for Section 9.4.C must be met.
3. A remediation plan that involves control of off-site contamination per Section 9.4.G and/or Tier 4 vapor encroachment mitigation per Section 9.4.B.10 is not permitted under this section but may be allowed under Section 9.4.E.

E. Remediation Plans – Incomplete Removal of Contamination.

1. If the LSTF authority determines that remediation to LSTF unrestricted criteria levels is infeasible, HUD may accept a Risk Based Corrective Action (RBCA) or other accepted remediation plan approved by the LSTF authority that allows for incomplete removal to LSTF restricted residential criteria levels.
2. Justification for incomplete removal of contamination must be submitted along with the remediation plan and must include documentation that shows that the cost of the incomplete removal of contamination, including any life cycle costs for Operation and Maintenance and any applicable enforcement requirements of LSTF authorities, are sufficiently below the costs of complete contamination removal, per Section 9.4.D above.
3. The RBCA or other accepted cleanup program report(s) must:
 - a. Meet all of the requirements of Section 9.4.C;
 - b. Discuss how the remediation plan complies with the regulatory procedures as discussed in Section 9.4.E.3, above;
 - c. Discuss how it meets or will meet all of the requirements of Section 9.4.E.5; and
 - d. Discuss how it meets or will meet all of the requirements of Section 9.4.F through J (plus K through M if applicable).

4. The RBCA or other accepted cleanup program must be supported by the applicable combination of:

a. Engineering and Institutional Controls (EC/IC). An Engineering Control is a physical measure that reduces or eliminates exposure to contamination. An Institutional Control is a non-engineered instrument, such as administrative and legal control. ICs typically limit land and/or resource use or provide information that helps modify or guide human behavior at a site. An appropriate mix of ECs such as capping and slurry walls, and ICs such as protective covenants, access restrictions and tenant and employee notification, are usually required for all RBCAs or other accepted cleanup program as approved by the LSTF authority.¹⁴ EC/IC may include:

i.—Hard/Soft Cap Engineering Control. A hard cap EC, such as concrete, generally is required if any contamination will remain on the site after Final Endorsement. Unless the lender can justify why a lesser depth to contamination would be protective of the health and safety of occupants, the depth of any remaining contamination should be greater than the deepest of the following:

- the depth of the foundations of any existing or proposed structures including sumps;
- the depth of any existing or proposed utilities on site; or
- five feet below the surface.

HUD may allow for a soft cap (e.g. dirt) if other engineering controls such as an impenetrable geotextile fabric are included. If EC is not required for a soft cap, IC is still required.

ii. Slurry Wall or Equivalent Engineering Control. A slurry wall or equivalent type EC may be required to prevent offsite contamination from migrating onsite or to prevent onsite contamination from migrating onsite or offsite. If the Phase I and/or Phase II ESA determines that the likely existence of off-site contamination presents a risk to the site, such a slurry wall or equivalent type EC will be required.

iii. Monitored Natural Attenuation and Enhanced Passive Remediation (MNA/EPR). MNA/EPR such as by bio-augmentation where no additional active input is required and passive engineering controls such as a slurry wall may be allowed as part of the RBCA. In such cases, the LSTF authority must issue a conditional No Further Action Letter or similar approval. Monitoring wells pursuant to the above RBCAs and meeting the requirements of Section 9.4.F will be required to monitor the progress of the remediation. When MNA/EPR is part of the RBCA or other

¹⁴ Additional information about IC and ECs found at EPA: <https://www.epa.gov/superfund/superfund-institutional-controls-guidance-and-policy> and https://www.epa.gov/sites/production/files/2015-09/documents/ec_information_guide.pdf

accepted cleanup program, the remediation may continue beyond Final Endorsement provided that the LSTF authority has determined in writing that such undertakings would present no threat to health, safety or the environment.

- iv. Vapor Encroachment/Vapor Intrusion Mitigation. If a VEC is present, as per an ASTM E2600-15 Tier 1 Vapor Encroachment Screen, then mitigation as discussed in ASTM E2600-15, Appendix X7 is required, unless a vapor intrusion assessment (VIA) has been, or will be, performed pursuant to LSTF policy and/or procedure. When remediation goes directly from a Tier 1 screen or a Tier 2 screen, such controls shall, where feasible, consist of a poured-on vapor barrier to be used in conjunction with active and passive venting systems.
 - v. IC regarding groundwater contamination, if applicable, must be put in place.
 - vi. HUD may require ICs beyond LSTF requirements in order to support the ECs and ensure protection of the residents throughout the term of the mortgage.
- b. Operations and Maintenance (O&M) Plans. Any time there is an EC there must be an O&M plan. The O&M plan must be approved by the LSTF authority and must discuss any associated enforcement required by LSTF authorities. An O&M plan must be in place for management of all contamination remaining on the site and any controls thereof. If HUD determines that the mortgagor does not have sufficient capacity to manage the O&M plan, the mortgagor must contract an appropriate servicer to do so. The O&M Plan must ensure maintenance of any engineering controls and assign responsibility for that maintenance. (See Section 9.5 for guidance on cost determination.)
- c. No Further Action Letter (NFA). The LSTF authority must issue an NFA, or similar approval, except that a conditional NFA may be allowed pursuant to MNA/EPR (see Section 9.4.E.4.a.iii).¹⁵ The LSTF authority must indicate in the NFA that the remediation that has taken place or will take place protects the health and safety of occupants and does not conflict with the intended utilization of the property. Usually, this will be satisfied by a statement that the remediation meets LSTF residential use standards. The NFA must be submitted to HUD pursuant to the timeline required by Sections 9.4.C.7 and 9.4.C.8.
- d. Groundwater Requirement. A site is or will be otherwise acceptable if contamination exists in the groundwater after completion of remediation, if:
- i. IC regarding the groundwater is/will be put in place, along with approval by the LSTF authority, and any applicable enforcement requirements of LSTF

¹⁵ For a list of state approvals that meet MAP requirements, visit <https://www.hudexchange.info/programs/environmental-review/housing/#faq>.

authorities. The ICs must prohibit any and all uses of the groundwater. Municipal restrictions on groundwater may substitute for LSTF approval if the restrictions are included as an IC on the property deed and requirements of Sections 9.4.E.5.d.ii and iii are met;

- ii. The highest anticipated levels of groundwater based on high groundwater and/or 100 year flooding events are below the levels of any construction or potentially anticipated utility work unless it can be shown how such high groundwater levels will not modify the horizontal and vertical extent of contamination to such a degree that it could affect the health and safety of residents and workers; and
 - iii. Any vapors from groundwater and/or soils are shown not to present a significant risk pursuant to Tier 1 vapor encroachment assessment, Tier 2 vapor encroachment assessment, vapor intrusion assessment, or mitigation.
- e. Safety of and Disclosure to Residents and Workers. Any time contamination above LSTF unrestricted criteria is allowed to remain on site after initial occupancy and final closing, all maintenance workers who might perform activities that could compromise the EC/IC, construction workers, and building residents, etc. are to be informed of the general type and extent of contamination and the protective measures that have been taken. It would be up to residents to inform any of their visitors/guests of these conditions.
- f. Hazardous Substance Quantification. If any RBCA or other accepted program remediation plan identifies hazardous substances (listed in 40 CFR 302.4) that will remain on the property after Final Endorsement, such plan shall determine the quantity of such hazardous substances and whether it equals or exceeds the levels indicated at 40 CFR 373.2(b). (This is information that HUD is required to report under CERCLA in the event that HUD will own the property or take over its management.)

F. Monitoring Wells, Flushing Wells, or Testing Wells.

1. General Requirements. The presence of a testing or monitoring well on the property does not bar the property from consideration for mortgage insurance. If a monitoring well is required to confirm that contaminants have been removed to intended levels or that an MNA/EPR is working properly, EC/IC will be required until such time as contaminants are reduced to LSTF criteria and a Final NFA letter is issued.
2. Monitoring Well Protocols. Monitoring protocols must be specified in the RBCA or other accepted program report and monitoring must proceed until contaminants have been removed to intended levels or that passive MNA/EPR is working properly.
3. Off-site Contamination – Acceptability. If a monitoring well is required to determine if existing or assumed off-site contamination has migrated or might migrate on-site,

the site is generally not acceptable unless associated EC/IC are put in place pursuant to a RBCA or other accepted program, or unless the LSTF authority provides a statement that such off-site contamination would not present a risk to the health of the project's occupants if it were to migrate on-site.

4. Flushing Wells – Unacceptable. In no case may Final Endorsement/initial occupancy take place when a flushing well is in operation or will be required.
5. Testing or Monitoring Wells Ordered by LSTF. A testing or monitoring well may also be placed on the property by order of the LSTF to test or monitor contamination on the site or from a neighboring site. If a monitoring well would be required or exists solely to monitor the general health of an aquifer used as a water supply or potential water supply, but not in relation to an existing or potentially hazardous condition, this is not a bar to environmental approval. However, the lender must notify HUD if there is any current or intended placement of a monitoring or testing well.
6. Non-operating Wells. Non-operating wells are not a bar to environmental approval but must be capped over and closed out pursuant to the appropriate LSTF authority.

G. Off-site Contamination.

If the Phase I and/or Phase II ESA determine that the existence of off-site contamination presents a risk to the site or the residents of the project and the sponsor has no control over the off-site locations of the contamination, the site is not acceptable unless such off-site contamination is subject to a RBCA or other accepted program meeting all of the requirements of Sections 9.4.C and E.

H. Escrow.

Any monitoring wells and engineering controls, such as caps or slurry walls, may warrant an escrow account to be established by the lender at Initial Endorsement to offset the cost of any ongoing maintenance. See Section 9.5.C. for further discussion.

I. Waivers.

If a Regional Office intends to waive any of the requirements in this Section 9.4 that are not regulatory in nature, the advice of the Departmental and/or Housing Environmental Officer, or the applicable REO/FEO in whose district the project is located, should be obtained before the waiver is granted to ensure that such waiver is in compliance with the environmental requirements of 24 CFR 50.3(i).

J. LSTF Approvals and Reviews.

1. The LSTF must have jurisdiction over the project. EPA has jurisdiction over most

Superfund sites (see Section 9.4.K), but not sites that are solely on federal facility property, such as the Department of Defense. The U.S. Army Corps of Engineers has jurisdiction over most Formerly Used Defense Sites. A project may need clearance from multiple LSTF authorities.

2. Any approvals by an LSTF authority must be given directly by that authority and may not be given by a third party approved by that authority to act in lieu of the authority itself. Approvals by local authorities are only acceptable when such authority is acting under delegation from the State.

K. Superfund Sites

A site located on an existing or proposed Superfund site requires consultation with EPA. Sites adjacent or proximate to a Superfund site may require consultation with EPA to confirm that the contamination will not impact the HUD site.

1. Superfund National Priority List (NPL) Sites

A. The first step is to determine the extent to which EPA has completed a site characterization at the NPL site.¹⁶

- i. **EPA has conducted a remedial investigation or other characterization work that allows for an assessment of the area that includes the property of HUD interest.** EPA's site characterization work may be so detailed and thorough that it can substitute for MAP requirements regarding an ASTM Phase II and/or a site characterization report. HUD would make the determination on the adequacy of available information to substitute for MAP requirements in conjunction with EPA and relevant state regulatory agencies.
- ii. **EPA has conducted a remedial investigation or other characterization work at the site that shows the NPL site related contamination does not extend to the property that HUD may want to support.** Examples include ground water at depth with no potential for vapor intrusion at levels of concern, or a very large site with uncontaminated areas within the boundary of the overall site.
- iii. **EPA has not yet completed a remedial investigation or other site characterization work for the area that includes the property of HUD interest.** Generally, this will include sites that are newly listed to the NPL or very large sites. These sites generally undergo at least some characterization to ensure that there are no unacceptable risks that require immediate action.

¹⁶ Information about proposed NPL sites, NPL sites, and deleted NPL Sites, including maps and EPA contact information can be found at <https://www.epa.gov/superfund/superfund-national-priorities-list-npl>

- B. Projects on existing or proposed NPL sites need written documentation from EPA (and sometimes also from the relevant LSTF authority) that the project is suitable for residential use. This written documentation can take four forms.
- a. EPA has deleted the site from the NPL and published a deletion notice in the Federal Register. Because a site could be deleted from the NPL for a planned nonresidential use, HUD must confirm that the site is suitable for residential use.
 - b. EPA has issued a Site Wide Ready for Anticipated Use (SWRAU) status for the site. This indicates that the entire site is safe for the intended use and institutional and engineering controls are in place.¹⁷ Because a site could achieve SWRAU status for a planned nonresidential use, HUD must confirm that the SWRAU is for residential use.
 - c. EPA has issued a Ready for Reuse (RfR) Determination for the site. The RfR determination can apply to all of the site or to a part of the site where clean up or EC/IC has been implemented. HUD must consult with EPA to determine if the RfR determination applies to the proposed project site and that cleanup is to residential standards.
 - d. If a site has not yet reached SWRAU or RfR status, HUD will need written documentation from EPA that an NPL site is suitable for residential use.

2. Superfund Sites not on the NPL

Superfund sites that are not on the NPL will only be acceptable if the site is cleaned up to residential levels and HUD receives written documentation from EPA that the site is suitable for residential use.

- 3 HUD must incorporate any EC/IC put in place by EPA into its environmental conditions and subsequent program commitments. HUD may impose additional ICs to ensure long term safety at the site. HUD must conduct its own due diligence at Superfund sites and may determine that the property is unacceptable for FHA mortgage insurance or other HUD assistance.

L. Unacceptable Sites.

A site over a former solid waste or hazardous waste landfill/dump site is not acceptable for development unless the hazardous substances, petroleum, and petroleum products are completely removed or remediated to restricted residential standards and the LSTF with management authority over the site gives written approval of the site for residential usage.

¹⁷ The list of sites that have achieved SWRAU status can be found at <https://www.epa.gov/superfund-redevelopment-initiative/sitewide-ready-anticipated-use-swrau-superfund-sites> .

M. Underground Storage Tanks Not Regulated by the LSTF

For Underground Storage Tanks (USTs) containing, or previously containing, hazardous waste or petroleum products not regulated by the LSTF, HUD will require an integrity test and an O&M plan.¹⁸ The UST and its service lines must pass an integrity test before HUD completes the environmental review. In addition, an O&M plan must include periodic testing of the tank and its service lines, as well as repair, maintenance and emergency response procedures. These requirements do not apply to propane USTs.

9.5 HUD Staff Responsibility for Projects Requiring Remediation of Contamination and Toxic Substances

A. General Responsibilities.

The Department assumes greater risk any time that a Firm Commitment is issued on a contaminated site, which risk is even greater when a loan is on a site where complete removal of contamination is not possible, requiring monitoring possibly with continuous remediation techniques such as MNA/EPR. Therefore, HUD staff must exercise great care in the review process to assure that all reasonable measures are taken to mitigate HUD's risk exposure and that an accurate determination is made of any remediation costs that are included in the HUD-insured mortgage. Any special site assessment reports, Phase II or Phase III ESAs should be reviewed so that the extent of the contamination is fully understood. Although the lender is responsible for assuring that environmental remediation contractors are qualified and experienced, field staff must still review references and qualifications and are strongly encouraged to consult with an REO/FEO at the start of any remediation discussion.

B. Complete Removal of Site Contamination.

1. **Technical Reviews.** Trained Underwriting or Technical staff (often an Appraiser) is responsible for the review of all environmental documentation and for completing the environmental review in HEROS, which may be supplemented as needed to document the review and HUD's conclusions as to the adequacy of the proposed remediation plan.

Any estimates of value or rents should be made as if the project is unaffected by contamination and conditioned on successful removal. The appraisal must address any effect of marketability that may be present due to the prior environmental history.

2. **A/E and Cost.** A construction analyst should review the cost estimate of the remediation plan to determine whether it is reasonable and if the remediation and removal contractor is appropriately bonded and qualified. Cost data for remediation is not as plentiful as with more routine construction tasks. The HUD construction analyst may consult with local environmental remediation professionals about costs for similar work.

¹⁸ Guidance available at <https://www.hudexchange.info/programs/environmental-review/housing/#faq>

3. Mortgage Credit. The HUD underwriter shall determine escrow, performance and bond payment requirements. The cost of the mitigation work based upon the estimated cost from the contractor may be included in the insured loan. The amount of the escrow or bond shall be at least 150% of the total of the estimated cost of the mitigation work. The cash requirements for the escrow or bond, and the lender and Mortgage Credits procedures for administering the escrow, shall be in accordance with existing closing instructions in the Chapter 19 of the MAP Guide. Higher escrow or bonding requirements will be necessary if Multifamily Regional staff and/or the REO/FEO determine that there is a greater than average risk that unforeseen problems may arise, resulting in increased cost based on previous experience with similar work and/or research through local environmental remediation contractors about their experience in containing the cost within their stated estimate.

C. Incomplete Removal of Site Contamination.

1. HUD staff should follow the guidance in Section 9.5.B regarding initial removal or mitigation costs.
2. HUD staff must assure that the cost of any requirement for continuous monitoring and/or mitigation is accommodated. An escrow account established by the lender at Endorsement may be the most appropriate choice. This may also be accomplished by including the cost in Section E of the HUD-92264 under “Other Maintenance” and would include fees charged by service providers who are engaged to perform monitoring. If an expense is for actual or anticipated replacement of a component such as a pump, it should be included in the Reserves for Replacement. The basis for the expense or additional replacement reserve will be obtained from a qualified engineer and/or contractor. The engineer/contractor’s estimate should be sufficiently detailed and supported to allow review by the construction analyst as well as the appraiser.

Any effect on project marketability, value or rents due to the need for continuous monitoring/mitigation must be quantified and discussed in the appraisal.

D. Management, Coordination and Communication.

The Department assumes greater risk in cases involving environmental mitigation that will occur after Initial Endorsement especially when mortgage proceeds are used to fund the cost of remediation. Extra attention must be given to the need for frequent communication, preferably with written documentation, between disciplines that are coordinated by branch chiefs and regional production division directors relating to levels of contamination, cost estimates and the certainty of the effectiveness of mitigation.

A. Insurance/Guarantee Requirements.

Borrowers are required to obtain separate insurance for environmental hazards from an insurer acceptable to HUD if remediation work will be done on the site during the insured loan period, if

the coverage is available. Environmental hazard insurance typically covers liability (including occurrence coverage for harm that manifests itself during or after the remediation work) and cost of completion.

The environmental remediation contractor will almost always be different from the project's general contractor. Aside from the contractor qualifications, licensure and bonding that are addressed above, the remediation contractor must provide HUD a separate guarantee of completion for their work on a form prescribed by HUD.

9.6. Environmental Laws and Authorities and Multifamily Specific Requirements

A. Lead-Based Paint (24 CFR Part 35.115(a)).

1. Lead-based paint requirements are applicable to multifamily housing constructed before 1978, in accordance with 24 CFR Part 35.

Exceptions:

- a. The project is proposed for demolition provided the property will remain unoccupied until demolition;
- b. The housing is designated exclusively for the elderly or persons with disabilities unless a child of less than 6 years of age resides or is expected to reside there.
- c. Zero-bedroom dwelling units unless a child of less than 6 years of age resides or is expected to reside there.
- d. Property that has been found to be free of lead-based paint by a certified lead-based paint inspector.
- e. Property where all lead-based paint has been identified, removed, and clearance has been achieved.

Exemption: 223(a)(7) transactions do not require an appraisal and are therefore exempt from Lead-based paint requirements.

2. HUD regulations regarding lead-based paint are found at 24 CFR Part 35, copies of which, along with guidance materials, may be downloaded from https://www.hud.gov/program_offices/healthy_homes/enforcement/lshr, or obtained by telephoning 1-800-424-LEAD (TTY: 800-877-8339). The helpful Lead Rule Compliance Advisor is available at <http://portalapps.hud.gov/CorvidRpt/HUDBLP/welcome.html>.
3. For pre-1960 residential properties that do not involve conversions or major rehabilitation, the lead-based paint report shall consist of a risk assessment to identify lead-based paint hazards, performed in accordance with 24 CFR 35.1320(b), by a certified lead risk assessor.

Any identified lead-based paint hazards must be treated with “interim controls” in accordance with 24 CFR 35.1330 or “abatement” in accordance with 24 CFR 35.1325 (as authorized by 24 CFR 35.155) and shall be considered to be completed when clearance is achieved in accordance with 24 CFR 35.1340. Interim controls or abatement shall be completed prior to issuance of the Firm Commitment, unless HUD approves their completion prior to Final Closing under conditions in the Firm Commitment that require an escrow of sufficient repair or rehabilitation funds. Before the issuance of the Firm Commitment the sponsor shall agree to incorporate ongoing lead-based paint maintenance into regular building operations and maintenance activities in accordance with 24 CFR 35.1355(a) unless abatement through removal of all of the lead-based paint has been performed. See 24 CFR 35.620.

- a. Interim controls must be conducted by a firm certified as a Lead-Safe Certified Renovation, Repair and Painting Rule firm by the EPA or by the state, if authorized by EPA to issue such certification, and performed by a supervisor and workers who are certified renovators based on their having passed a lead renovator course in accordance with 40 CFR 745.90 or 745.326, respectively. Interim controls are a set of measures designed to reduce temporarily human exposure or likely exposure to lead-based paint hazards, such as repairs, painting, temporary containment, specialized cleaning, clearance, ongoing lead-based paint maintenance activities, and the establishment and operation of management and resident education programs (24 CFR 35.110).
- b. Abatement must be conducted by a firm certified as a Lead Abatement firm by the EPA or by the state, if authorized by EPA to issue such certification, and performed by workers who are certified lead abatement workers and a supervisor who is a certified lead abatement supervisor who has passed an accredited lead abatement supervisor course in accordance with 40 CFR 745.226 or 745.325, respectively. Abatement means any set of measures designed to permanently eliminate lead-based paint or lead-based paint hazards (see definition of “permanent”). Abatement includes the removal of lead-based paint and dust-lead hazards, the permanent enclosure or encapsulation of lead-based paint, the replacement of components or fixtures painted with lead-based paint, and the removal or permanent covering of soil-lead hazards; and all preparation, cleanup, disposal, and post abatement clearance testing activities associated with such measures. (24 CFR 35.110).
- c. Information and guidance are in the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, especially chapters 11 through 15. (See the HUD Office of Lead Hazard Control and Healthy Homes’ (OLHCHH’s) website, specifically, the Guidelines’ page, https://www.hud.gov/program_offices/healthy_homes/lbp/hudguidelines)

More details about the revisions to the LSHR are on the OLHCHH’s LSHR webpage: https://www.hud.gov/program_offices/healthy_homes/enforcement/lshr .

4. For multifamily properties constructed after 1959 and before 1978 that do not involve conversions or major rehabilitation, before the issuance of the Firm Commitment the sponsor shall agree to incorporate ongoing lead-based paint maintenance practices into regular building operations in accordance with 24 CFR 35.1355(a). See 24 CFR 35.625.
5. For conversions and major rehabilitations (defined in this context as “rehabilitation that is estimated to cost more than 50% of the estimated replacement cost after rehabilitation”), of multifamily properties constructed before 1978, a “lead-based paint inspection” to identify the presence of lead-based paint shall be performed in accordance with 24 CFR 35.1320(a), by a certified lead-based paint inspector. The Firm Commitment shall require that any lead-based paint identified on the property shall undergo “abatement” in accordance with 24 CFR 35.1325 with the abatement to be completed prior to both initial occupancy and Final Closing. HUD will generally require that such abatement be achieved through paint removal or component replacement.
 - a. If the sponsor can demonstrate that paint removal or component replacement is not practicable because the substrate material is architecturally significant and would be damaged by so doing, HUD may approve permanent encapsulation or enclosure and, if it does, shall approve incorporation of ongoing lead-based paint maintenance into regular building operations maintenance activities.
 - b. Upon request by the State Historic Preservation Office, the sponsor may conduct interim controls of the lead-based paint in accordance with 24 CFR 35.1330 instead of lead-based paint abatement. If interim controls are conducted, ongoing lead-based paint maintenance and reevaluation shall be conducted in accordance with 24 CFR 35.1355.
 - c. See Section 9.6.U for more information about maintenance plans. Abatement or interim control is considered complete when clearance is achieved in accordance with 24 CFR 35.1340. See 24 CFR 35.630.
6. If an evaluation (such as a lead-based paint inspection or risk assessment) or hazard reduction is undertaken, the sponsor shall provide a notice to occupants in accordance with 24 CFR 35.125. The sponsor shall also provide the lead hazard information pamphlet in accordance with 24 CFR 35.130 if it has not already been provided.
7. Where required, the LBP report must be submitted with the application as part of the HEROS Environmental Report.
8. The cost of lead-based paint abatement or hazard control work may be included in the proposed mortgage loan with HUD approval.
9. Sale and rental transactions or properties covered by Section 9.6.A are also subject to the HUD-EPA lead-based paint disclosure rule at 24 CFR Part 35, Subpart A.

B. Asbestos (24 CFR 50.3(i)).

1. While specific uses of asbestos are technically allowed today, several uses of asbestos have been banned starting in the early 1970s, and many commercial enterprises stopped installing asbestos products as of the late 1970s. In 1989, the U.S. Environmental Protection Agency instituted a partial ban on the manufacture, import, processing and distribution of some asbestos containing products. Some of the more common examples of asbestos containing materials include insulation, fireproofing, sprayed on finishes such as acoustical ceiling texture, joint compound, ceiling tiles, vinyl floor tile, glazing compound and mastic or caulk used to fix the tile in place, siding, and roofing, although they can be found in many construction material types and are still in use today. These asbestos-containing materials (ACM) can be found in both friable¹⁹ and non-friable states.

Asbestos studies and information must be included in the Environmental Report, in accordance with HUD's environmental policy articulated at 24 CFR 50.3(i) which states that all properties 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.

Knowledge of the location, quantity, type and condition of ACM in the facilities, building, and, if applicable, the surrounding area of the property, are critical for proper management of the hazard. These factors will determine if ACM will need to be selectively removed for maintenance, removed prior to renovation, removed prior to demolition, left in place and encapsulated or enclosed with procedures outlined in the Operation & Maintenance (O&M) Program, or a combination of these strategies.

2. An asbestos survey is not required for applications that are categorically excluded not subject to the laws and authorities at 50.4 (CENST) under 24 CFR 50.19(b)(21) (see Sections 9.1.C.1 and 2).

However, applicants are encouraged to complete a survey even at the CENST level of review to provide the basis for an asbestos O&M program for protection of workers and residents.

3. Any structures or ancillary facilities on the site built before 1989 must be assessed as per the ASTM E 2356-18, "Standard Practice for Comprehensive Building Asbestos Surveys" or the city, county, or state requirements if they exceed the ASTM E2356-18 standards. For structures built in 1989 or later, HUD requires projects to report any knowledge of asbestos use at the property and to verify the composition of roofing materials, either through direct documentation (e.g. receipts or labels) or through sampling.

¹⁹ Friable material is a material that is easily crumbled or powdered by moderate (hand) pressure.

- a. At minimum, structures built before 1989 must undergo a Baseline Survey, or stricter standard if applicable in the jurisdiction, to determine if ACMs are present or suspected to be present at the site.

The ASTM E 2356-18 Baseline Survey is a building-wide or facility-wide inspection that provides a general sense of the overall location, type, quantity, and condition of asbestos-containing materials present. It is thorough in that most accessible functional spaces are inspected, and that bulk samples are taken of suspect materials observed. The baseline survey provides information for long-term management of ACM and prioritization of response actions. The presence of asbestos in suspect materials may be assumed or presumed in some cases without bulk samples being taken or analyzed. In a baseline survey, destructive testing is minimized, e.g. concealed spaces are not normally breached.

- b. Any structures or ancillary facilities built before 1989 that are planned to be demolished or planned to undergo rehabilitation above the level of repair as defined in MAP Section 5.1.C.1 must complete a building asbestos survey by a qualified asbestos inspector performed pursuant to the “Pre-Construction Survey” requirements of ASTM E 2356-18 or stricter standards if applicable in the jurisdiction. At minimum, the survey must include all spaces within the limits of construction, as well as adjacent areas where ACM may be disturbed by construction activities.

The Pre-Construction Survey is performed in anticipation of a demolition or rehabilitation project. The Pre-Construction Survey requires destructive testing if concealed spaces are to be breached during construction. The Pre-Construction Survey satisfies the EPA NESHAP requirements for renovation or demolition to “thoroughly inspect the affected facility.”

4. An accredited asbestos professional will determine whether projects that complete a Pre-Construction Survey must also complete a Baseline Survey. The asbestos professional will also determine if the project requires additional surveys beyond the minimum HUD requirements.
5. The practices outlined in the ASTM E 2356-18 apply to all activities (unless following a stricter local, state or tribal standard) and all surveys or sample analysis must be completed by a licensed/accredited professional and laboratory.
 - a. Asbestos professionals must be accredited by EPA or an EPA approved state program under the Model Accreditation Plan. The professional must also be licensed by the state, city or local jurisdiction in which the work is being conducted if the jurisdiction has this requirement.
 - b. Transmission electron microscopy (TEM) bulk sample analyses may be necessary for samples originating from jurisdictions that require this analysis. Additionally,

TEM analyses is commonly used to verify a reported no asbestos detected result for non-friable organically bound material (NOB) and other non-friable materials by polarized light microscopy (PLM).

6. If prior surveys for ACM have been completed within the building, facilities, and project site by a licensed professional and accredited asbestos laboratory, HUD may accept the earlier documentation. If there is question about its validity, HUD will request a determination by an accredited asbestos professional. The determination of the applicability and usability of prior ACM surveys will be based upon the determination of the current licensed/credentialed asbestos professional or by HUD.
7. If ACM or suspected ACM is identified at a facility, HUD requires a response action to address the risk. Response actions may include complete removal, limited removal/repair, encapsulation, enclosure or management of the ACM under an O&M Program, or a combination of these, as recommended by an accredited asbestos professional. If ACM or suspected ACM remains after the initial identification and, if applicable, response actions, an asbestos O&M program shall be implemented. The following are examples for when certain response actions may be appropriate, but they do not encompass all response actions.
 - a. Removal.
 - i. Damaged friable materials.
 - ii. Friable materials in good condition with high potential for disturbance (e.g., accessible pipe or tank insulation, ceiling tiles where air exchanges occur in plenum above, ceiling tiles that are required to be moved to access mechanical equipment or piping on a routine basis, etc.)
 - b. Limited removal/repair, encapsulation or enclosure.
 - i. Damaged non-friable materials (limited removal/repair).
 - ii. Limited damage to ceiling texture (limited removal/repair).
 - iii. More extensive wall and/or ceiling texture damage or highly friable texture.
 - iv. Pipe insulation with limited damage but with limited potential for disturbance/impact (enclosure or removal).
 - c. O&M Plan.
 - i. Non-friable materials in good condition.
 - ii. Joint compound or wall and ceiling textures in good condition.
 - iii. Adhesive ceiling tiles with no real potential for disturbance.
 - iv. Friable pipe insulation materials in mechanical areas in good condition with limited potential for disturbance/impact by maintenance activities.

8. The asbestos survey(s) must be submitted with the application as part of the HEROS Environmental Report. If the survey identifies asbestos or asbestos is assumed, HUD must receive a remediation plan from an accredited asbestos professional with an appropriate mix of asbestos abatement and an asbestos O&M plan in accordance with EPA's How to Develop and Maintain a Building Asbestos Operations and Maintenance (O&M) Program website (<https://www.epa.gov/asbestos/how-develop-and-maintain-building-asbestos-operations-and-maintenance-om-program>) or any applicable LSTF requirements if more protective of health and the environment). See Section 9.6.U for more information about Operation and Maintenance Plans. The asbestos survey report(s), O&M plans, and updated records if materials are removed or identified subsequently should be maintained by the operator and owners of the property and made available to appropriate staff.
9. Other than for asbestos abatement on a structure that will be completely demolished, the cost of any asbestos abatement activities may be included in the proposed mortgage loan.
10. All asbestos abatement shall be done in accordance with EPA requirements for air pollution prevention pursuant to 40 CFR Part 61, subpart M especially 40 CFR 61.145, and OSHA requirements for Worker Protection, pursuant to 29 CFR 1926.1101, asbestos safety and health regulations for construction, and any LSTF asbestos abatement and worker protection rules. All asbestos abatement must be performed by a qualified asbestos abatement contractor with a supervisor ('competent person') trained in accordance with OSHA and, if applicable, EPA standards, and workers trained in accordance with the OSHA standard.

C. Radon (supersedes ML 2013-07)

1. Background. One common constituent of soil and rock is the unstable element uranium. One of the decay products of uranium is radon, a colorless, odorless gas. Under certain natural conditions, the radon gas can enter surface soils and become part of the "soil gas" environment, which then can enter the air, including air inside of buildings. When soil gas that contains radon enters a building, radon and its decay products are either directly inhaled, or attached to dust on walls, floors and in the air, which then can be inhaled. These decay products then undergo further decay, resulting in the release of subatomic alpha particles. This alpha particle radiation can cause mutations in lung tissue which can lead to lung cancer. The risk of contracting lung cancer from radon increases with an increase in the concentration of radon in the air that is breathed by building occupants. EPA

recommends mitigation for residences with radon concentrations at or above 4 picocuries per liter of air (pCi/L).

2. General Requirements.

a. Radon Report.

- i. A radon report is required unless an exception listed in Section 9.6.C.2.c. applies.
- ii. The radon report shall be included in the pre-application, or application, as applicable. For new construction, or substantial rehabilitations or conversions where early testing is not feasible, the radon report must be submitted to HUD at the final completion inspection. Applications must include the radon mitigation system in the architectural plans, as HUD relies on the project architect to design and incorporate any required radon mitigation system consistent with the relevant standard. HUD encourages the architect to seek technical advice from a radon professional should the architect believe it to be necessary in their professional judgment or if it is required by the relevant mitigation standard.
- iii. Contents. The radon report shall include the results of any testing performed, the sampling strategy as applicable, the details of any mitigation deemed necessary, and the timing of any such mitigation. The radon report must be signed and certified as to its compliance with the requirements of this section by a Radon Professional and include copies of appropriate certifications and/or licenses.

b. Radon Professional.

- i. All testing of existing properties, post-construction testing and any mitigation required as a result of this testing must be performed by, or under the direct supervision of a Radon Professional, in accordance with the protocols referenced in this section.
- ii. Radon Certification/License of the Radon Professional is required as follows:
 - a. Certification from either the American Association of Radon Scientists and Technologists (AARST) National Radon Proficiency Program (NRPP) or the National Radon Safety Board (NRSB); and
 - b. Certification/License from the state in which the testing or mitigation work is being conducted if the state has this requirement.

c. Exceptions to Radon Report.

- i. A Radon Professional may conclude that testing or mitigation is not necessary based on exemptions laid out in the relevant state or ANSI-AARST radon standard. Any such justifications as to why testing or mitigation is not necessary must be provided in the Environmental Report in the form of a signed letter from the radon professional that references the appropriate standard. Housing staff will determine whether to grant the exception.
- ii. A radon report is not required for applications that are categorically excluded not subject to the laws and authorities at 50.4 (CENST) as per 24 CFR 50.19(b) (21) (see Sections 9.1.C.1 and 2).

However, applicants are encouraged to test for radon even at the CENST level of review. Any such testing must follow the testing protocols and resident notification protocols below and must then be incorporated within a radon report as described within this section. If the results of such testing indicate levels of radon at or above the threshold for unacceptability, mitigation as described in this section is required, following Section 9.6.C.2.f.

d. Testing Protocols.

- i. Radon testing must follow the protocols set by the American Association of Radon Scientists and Technologists, Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings (ANSI-AARST MAMF-2017) (available at www.standards.aarst.org). This includes testing 100% of ground floor units and 10% of upper floor units in all buildings included in the project.

Exception: As an alternative to a full testing assessment, all ground level units/rooms in all buildings included in the project must be mitigated following the appropriate mitigation standard listed at Section 9.6.2.f.

- ii. Threshold for unacceptability: 4.0 picocuries per liter (4.0 pCi/L) based on initial and any confirmatory testing, if performed.

e. Occupant Notification.

- i. Testing. Occupants of all new applications for Multifamily MAP mortgage insurance programs shall be informed of forthcoming testing in the manner described in AARST MAMF-2017, Section II.B and Section III. 2.2.1.
- ii. Mitigation. Occupants shall be informed both prior to and after mitigation activities. In the case of new construction, incoming occupants shall be informed of radon mitigation activities.

- f. Mitigation Standards. Radon resistant construction is required for all new construction, and radon mitigation is required for existing construction where testing has revealed that radon levels exceed the threshold for unacceptability. The radon resistant construction or radon mitigation, when required, must conform to the following standards, which include post-mitigation testing requirements. All standards listed below available at www.standards.aarst.org.
- i. Existing buildings:
 - a. Multifamily structures: ANSI-AARST RMS-MF 2018, Radon Mitigation Standards for Multifamily Buildings
 - b. Single Family structures: ANSI/AARST Standard SGM-SF-2017, Soil Gas Mitigation Standards For Existing Homes
 - ii. New construction:
 - a. Multifamily structures: ANSI-AARST CC-1000-2018, Soil Gas Control Systems in New Construction of Buildings or ANSI-ASHRAE 189.1-2017, Standard for the Design of High-Performance Green Buildings except Low Rise Residential Buildings, Sections 801.3.4, 1001.3.1.9, and 1001.3.2.1.4.5.d
 - b. Single Family structures: ANSI-AARST CCAH-2020, Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses.
- g. Mitigation Timing. For new construction and substantial rehabilitation properties, all mitigation reports, including follow-up testing, must be submitted to HUD staff at the final completion inspection. Radon mitigation included as part of a Section 223(f) project's repairs must be completed as quickly as practicable, and in any event, no later than 12 months after Closing. The scope of work and related costs identified in the Firm application must include all repairs related to radon.
- h. Certificate of completion. A certificate of completion from the Radon Professional must be submitted and appended to the radon report once radon testing and/or mitigation is completed. HUD staff must upload this to HEROS.
- i. Operation and Maintenance Plans. An operation and maintenance plan (called an operation, maintenance and monitoring (OM+M) plan under the ANSI-AARST standards) must be administered in accordance with the applicable mitigation standard for any mitigation project. A condition shall be attached to the Firm Commitment requiring that the borrower operate and maintain the property consistent with the referenced OM+M plan for the duration of the insured mortgage. The project must

submit the final OM+M plan to HUD after the radon mitigation system is installed. Given the ongoing risk associated with radon, the OM+M requirement for maintaining mitigation systems must be implemented when a mitigation system is present on the property.

- j. Existing Mitigation Systems. All existing mitigation systems installed at the property must be evaluated to ensure that they function properly, and if applicable, corrective action must be taken by a qualified radon professional.
 - k. Cost estimate. It is the responsibility of the lender to provide the cost estimate for radon remediation to be included into the overall construction cost. The cost estimate must be accurate to the proposed construction and include ongoing O+M costs. Estimates must be based on the locality of the project as well as the proposed time of construction.
3. Section 223(f).
- a. All Section 223(f) projects must be tested for radon.
 - i. Testing must be performed no earlier than 1 year prior to application submission.
 - ii. Exception: The applicant may elect to proceed directly to mitigation without prior testing.
 - b. Mitigation. See requirements at Section 9.6.C.2.f, which include post mitigation testing. If estimated costs exceed the allowable cost for the Section 223(f) program, the application cannot be approved but may be considered under the substantial rehabilitation program.
4. Substantial Rehabilitation and Conversions.
- a. All substantial rehabilitation and conversion projects must be tested for radon.
 - b. Testing prior to substantial rehabilitation or conversion.
 - i. Early testing not feasible. For some proposals, such as a conversion of an existing building from non-residential to residential, the building envelope may change to such an extent that early testing would not be appropriate and in some cases not possible. If this is the case, proceed directly to mitigation as discussed at Section 9.6.C.4.c.
 - ii. Early testing when feasible.

- a. Must be performed no earlier than 1 year prior to application submission in accordance with Section 9.6.C.2.d.
 - b. If test results are below the threshold, no mitigation is required.
 - c. If test results are at or above the threshold, mitigation must be built into the project design per Section 9.6.C.4.c.
- c. Mitigation.
- i. If mitigation is built into project design, it must be conducted in accordance with the requirements at Section 9.6.C.2.f, which require post mitigation testing.
 - ii. If mitigation is not built into project design, a radon report must be submitted to HUD at the final completion inspection. If testing results are at or above the threshold, retrofit mitigation pursuant to the requirements at Section 9.6.C.2.f is required.

5. New Construction.

- a. All new construction projects must follow radon resistant construction requirements.
 - i. Multifamily structures: ANSI-AARST CC-1000-2018, Soil Gas Control Systems in New Construction of Buildings
 - ii. Single Family structures: ANSI-AARST CCAH-2020, Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses
- b. Post-construction testing is required prior to final completion inspection. If post-construction testing results are above the threshold, the project must be brought into compliance by activating the mitigation system or through retrofit mitigation.
- c. All testing and mitigation required as a result of this testing must be performed by, or under the direct supervision of a Radon Professional, in accordance with the protocols referenced in this section.

D. Historic Preservation (24 CFR 50.4(a)).

- 1. HUD must comply with the National Historic Preservation Act (54 U.S.C. 300101 et seq.) and its implementing regulations found at 36 CFR Part 800 which require Federal agencies to take into account the effects of their undertakings on historic properties, consult with the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer as appropriate, and afford the Advisory Council on Historic

Preservation a reasonable opportunity to comment. The process is known as Section 106 review.

2. Applications for Firm Commitment, whether for new construction, rehabilitation, refinancing or conversion from non-residential to residential property are considered “federal undertakings” which require HUD to make a determination of no historic properties affected, no adverse effect, or adverse effect upon historic properties. An historic property means any prehistoric or historic district, site, building, structure, object, or traditional property or landscape included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. Also, HUD must consider the area of potential effect (APE), which is often the site boundary, but occasionally the block on which the site is located or the immediate site environs.
3. Pursuant to the “anticipatory demolition” requirements of Section 110(k) of the National Historic Preservation Act (54 U.S.C. 306113), even before the concept meeting or application submission takes place, any action by a potential lender or borrower, or any action by another party that the lender or borrower has the legal power to prevent, that is taken with the intent to circumvent Section 106 review and that significantly adversely affects a historic property, could result in rejection of an application.
4. Exceptions (if applicable, a statement identifying the exception and supporting documentation must be included in the application):
 - a. Categorical exclusions not subject to related laws and authorities (CENST) under 24 CFR 50.19(b)(21) (see Sections 9.1.C.1 and 2);
 - b. HUD has determined that some undertakings have No Potential to Cause Effects under 36 CFR 800.3(a)(1), because there is no physical impact beyond maintenance. These determinations are made by HUD’s Office of Environment and Energy and include certain Rental Assistance Demonstration (RAD) transactions and certain 223(f) refinance transactions with no site work beyond maintenance, as defined in HUD Notice CPD-16-02²⁰. In order to use this exception, a project must meet the conditions in an applicable No Potential to Cause Effects Memo that is found on HUD’s website²¹. For such transactions, there is no requirement to contact the State Historic Preservation Officer (SHPO), and historic preservation responsibilities are limited to documenting this determination in HEROS by marking No Potential to Cause Effects on the Historic Preservation Screen and uploading a copy of the relevant Memo. Only projects that meet the conditions of one of the posted Memos

²⁰ Guidance for Categorizing an Activity as Maintenance can be found in HUD Notice CPD 16-02:

<https://www.hudexchange.info/resource/3197/guidance-categorizing-activity-as-maintenance-environmental-regulations-24-cfr-parts-50-and-58/>.

²¹ No Potential to Caus Effect memos found at: <https://www.hudexchange.info/resource/3865/no-potential-to-cause-effects-to-historic-properties-memos/>

can use this finding.

- e. Some states may have a Programmatic Agreement (PA) with HUD and the proposal may be part of a class of actions that do not require Section 106 consultation under the PA.²² HUD staff historic preservation responsibilities are limited to documenting this determination in HEROS by marking Programmatic Agreement on the Historic Preservation screen, uploading the Programmatic Agreement into HEROS, and copying the applicable part of the PA agreement into HEROS.
5. If an exception does not apply, HUD must conduct a Section 106 review and make a finding of effect. Multifamily production staff typically conduct the Section 106 review with information provided to HUD by lenders and their authorized representatives. Also, HUD has determined that MAP-approved lenders and their authorized representatives may act on behalf of HUD to consult with SHPOs and other consulting parties to initiate the Section 106 review process, identify and evaluate historic properties, and assess effects. This delegation does not extend to consultation with tribes. HUD must initiate and conduct consultation with Indian Tribes (see Section 9.6.D.9).
- a. The material provided to the SHPO should include a narrative explaining the proposal, a map identifying the site location and proposed Area of Potential Effect (APE), a list of potential interested consulting parties that have been or will be invited to consult, a description of identified historic properties (listed and eligible), digital photos of buildings and setting, a description of the proposed project activities, a description of direct or indirect effects on the historic properties, and a determination of No Historic Properties Affected, No Adverse Effect, or Adverse Effect. The information must be submitted to the SHPO following the procedures outlined by the individual SHPO office.
 - b. Lenders and their authorized representatives using the delegated process must include a copy of HUD's delegation Memorandum²³ with each submission to the SHPO. The submission must include the information discussed in Section 9.6.D.5.a plus the HUD program followed by the section of the National Housing Act and an appropriate contact person at both the lender's organization and the authorized representative hired to coordinate the review. In addition, for lenders and their authorized representatives using the delegation, if a project involves demolition of a building over 45 years old, new construction in or adjacent to a historic district, substantial ground disturbance²⁴, or exterior rehabilitation of a building more than 45 years old,

²² Link to HUD's Programmatic Agreement Database: <https://www.hudexchange.info/resource/3675/section-106-agreement-database/>. Specific information about states with Part 50 Programmatic Agreements at Housing's environmental FAQ website: <https://www.hudexchange.info/programs/environmental-review/housing/#faq>.

²³ Delegation Memorandum posted here: <https://www.hudexchange.info/programs/environmental-review/historic-preservation/>

- lenders must retain a Qualified Historic Preservation Professional²⁵ in the discipline relevant to the project activities to prepare submissions to SHPO and manage consultation with interested parties and the public, as well as coordinate with HUD on HUD's consultation with Indian Tribes.
- c. Lenders that do not use the delegated process must still provide HUD the information required in Section 9.6.D.5.a.
 - d. All submission materials, a copy of the letter to the SHPO and a copy of the response must be included in the HEROS Environmental Report along with any comments received from consulting parties and the public. HUD remains legally responsible for all findings and determinations, regardless of who initiates the Section 106 review. HUD will independently review and confirm the APE, the determination of effect finding and the SHPO's response and may request additional information if needed. Only HUD staff can complete the Section 106 HEROS screen by documenting whether compliance steps or mitigation are required.
 - e. The SHPO has 30 calendar days to respond from receipt of an adequately documented submission. If the submission is inadequate, the SHPO may request additional information and the 30-day clock resets to the date that SHPO receives it.
6. Because of the technical nature of historic property identification, evaluation and treatment, it may be appropriate to retain a qualified historic preservation professional to prepare the initial consultation and supporting documentation even for projects where HUD is conducting the consultation directly or for delegated projects that do not otherwise require it under Section 9.6.D.5.b. Such consultant should meet the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61) and have experience in Section 106 reviews. Examples of when retention of a qualified historic preservation professional may be appropriate include when National Register eligibility of a property is unclear, when adverse effects are expected, when the property contains archeological sites, and/or when the project is controversial.
 7. For a No Historic Properties Affected or No Adverse Effect determination, after a SHPO concurrence has been received and/or 30 calendar days after the SHPO's receipt of an adequately documented finding have elapsed without objection from the SHPO or consulting parties, obligations under Section 106 are fulfilled. No Historic Properties

²⁴ Does not include minor ground disturbance for installing posts for a fence, deck, ramp, handrail, etc.; routine landscaping; or repaving a parking lot or sidewalk.

²⁵ A Qualified Historic Preservation Professional is one who meets the Secretary of the Interior's Professional Qualifications Standards for Archeology, History, Architectural History, Architecture, or Historic Architecture and has substantial experience in conducting Section 106 reviews of historic properties. Detailed information found at https://www.nps.gov/history/local-law/arch_stnds_9.htm

Affected is appropriate when there are no historic properties or there are no direct or indirect effects on historic properties. No Adverse Effect is used when there is an historic property that is affected by the project, but the effects are not adverse.

8. HUD will participate in and complete the Section 106 process when: an undertaking may adversely affect a historic property or historic district; there is a disagreement between the applicant or their authorized representative and the SHPO regarding identification and evaluation or historic properties and/or assessment of effects; there is potential for a foreclosure situation per 36 CFR 800.9(b) or anticipatory demolition as specified in Section 110(k) of the National Historic Preservation Act; there is an objection from tribes, consulting parties or the public regarding their involvement in the review process, recommended Section 106 findings and determinations, or the implementation of agreed upon provisions; or HUD deems the consultation record inadequate. This process may result in a design change, research and preservation, salvage, or in rare cases, rejection of the application for Firm Commitment. Consultation to resolve adverse effects may take considerable time and must be completed generally through execution of a Memorandum of Agreement (MOA) before a commitment can be issued.

9. Tribal Consultation:

a. In addition to consultation with the SHPO, or THPO if the project is on tribal lands, consultation with federally recognized Indian tribes and Native Hawaiian Organizations may be required. HUD must follow the guidance on tribal consultation in HUD Notice CPD-12-006 and supplemental Memorandum²⁶. Not all projects that require Section 106 review require consultation with Indian tribes. Consultation with federally recognized tribes is only required when a project includes activities that have the potential to affect historic properties of religious and cultural significance to tribes. These types of activities include:

- i. ground disturbance (digging),
- ii. new construction in undeveloped natural areas,
- iii. introduction of incongruent visual, audible, or atmospheric changes,
- iv. work on a building or structure with significant tribal association, or
- v. transfer, lease or sale of historic properties of religious and cultural significance.

b. When tribal consultation is required, the lender will utilize the HUD Tribal Directory

²⁶ HUD Notice CPD-12-006 found here: <https://files.hudexchange.info/resources/documents/Notice-CPD-12-006-Tribal-Consultation-Under-24-Cfr-Part-58.pdf>

Supplemental Memorandum found here: <https://files.hudexchange.info/resources/documents/HUD-Memo-Section-106-Tribal-Consultation-in-Projects-Reviewed-Under-24-CFR-Part-50.pdf>

Assessment Tool (<https://egis.hud.gov/tadat/>) to determine if the site is located in an area where a tribe has indicated interest or significance and present this information to HUD.

- i. The lender must submit the same information discussed in Section 9.6.D.5.a to HUD in the form of draft letters to each tribe. HUD will review the information, prepare the letters on HUD letterhead, and mail or email the letters, as appropriate for each tribe.
 - ii. Only HUD can consult with the tribes.
 - iii. The tribal consultation requirement applies to properties *off* tribal lands as well as on tribal lands. Properties with religious and cultural significance to native people may include ancestral archaeological sites and natural areas where traditional practices or ceremonies have been carried out as well as more familiar historic properties. Some traditionally used places have very strong religious associations, and it may be difficult or even inappropriate for native people to talk about their significance. If this situation arises, hiring a qualified professional with experience in tribal consultation may be required. The cost of such a professional shall be paid by the borrower.
10. The Section 106 review must be completed before HUD approves and/or commits assistance to a project. Additional guidance on the Section 106 review process is available at: <https://www.hudexchange.info/programs/environmental-review/historic-preservation> and <https://www.achp.gov/protecting-historic-properties>.
11. For projects receiving federal and/or state historic tax credits (HTC) the HTC process does not replace HUD's obligations under Section 106. Projects with HTC must still consult with the SHPO, tribes, other consulting tribes and the public as appropriate. The materials used in the HTC application (Parts 1 and 2) should be useful in the Section 106 consultation. More information about HTC available at: <https://www.hudexchange.info/programs/environmental-review/historic-preservation/tax-credit/>
12. The cost of historic preservation mitigation may be included in the proposed mortgage loan.

E. Floodplain Management (24 CFR 50.4(b)(2))

1. Applications for Firm Commitment are subject to regulations regarding floodplain management found at 24 CFR Part 55 which implements Executive Order 11988 (Floodplain Management). Lenders must provide the effective FEMA Flood Insurance

Rate Map (FIRM) with the subject site(s) clearly marked to determine whether the project is in or near a floodplain. In most areas, FIRMs are available online through the FEMA Map Service Center at <https://msc.fema.gov>.

In addition, lenders must provide any FEMA-supplied preliminary or pending floodplain maps or studies or Advisory Base Flood Elevations (ABFE) for the site, as HUD must use the latest of these sources unless the ABFE or preliminary FIRM indicates a lower Base Flood Elevation (BFE) than the current FIRM and Flood Insurance Study (FIS). Preliminary FIRMs can be found through the FEMA Map Service Center by clicking "Show ALL Products", or at a central Flood Map Changes Viewer (<https://fema.maps.arcgis.com/apps/webappviewer/index.html?id=e7a7dc3ebd7f4ad39bb8e485bb64ce44>). FEMA issues Advisory Base Flood Elevations after major flood disasters and disseminates them by region.

FEMA maps indicate floodplains as follows:

- a) 100-year floodplains (aka the Special Flood Hazard Area (SFHA) and the 1% annual chance floodplain) are designated as Zone A1–30, AE, A, AH, AO, AR, or A99.
 - b) 500-year floodplains (aka the moderate flood hazard area and the 0.2% annual chance floodplain) are designated as Zone B or a shaded Zone X.
 - c) Floodways are the portion of the floodplain which is effective in carrying the flow of flood waters and will generally be the most dangerous part of the floodplain during riverine flooding. Floodways are designated as Zone AE hatched.
 - d) Coastal high hazard areas are areas subject to high velocity waters and wave action, and they are designated as Zone V1–30, VE, or V.
 - e) Limit of Moderate Wave Action (LiMWA) are coastal areas in updated FEMA maps that are outside of the coastal high hazard area, but which are expected to receive between 1.5 and 3 foot breaking waves during a 1% annual chance flood. LiMWAs are designated with an informational line.
 - f) Areas where FEMA has not completed a detailed study sufficient to identify the flood risk are designated as Zone D. As these areas have the potential for unidentified flood hazards, HUD will rely on best available information to assess risk.
2. If any part of the site or integral offsite development (i.e., ingress, egress and/or parking) is located within the 100-year floodplain or within a 500-year floodplain for critical

actions²⁷, according to the best available data, the project must comply with HUD's floodplain management regulations at 24 CFR Part 55.

3. An application for mortgage insurance shall not be approved for a property located in: (a) a floodway; (b) a coastal high hazard area; or (c) a FEMA identified special flood hazard area in which the community has been suspended from or does not participate in the National Flood Insurance Program. If a stream coursing through a proposed site is designated as being in the 100-year floodplain according to FEMA's best available data, but there is no designated floodway area, development will be prohibited in the channel of the stream.
4. 24 CFR 55.12(c) lists categories of proposed actions for which the floodplain management requirements in 24 CFR 55 are not applicable. Exceptions include:
 - a. Incidental Exception. If only an incidental portion of the project is in the 100-year floodplain, floodway, or coastal high hazard area (or for critical actions, the 500-year floodplain), and certain conditions are met (see 24 CFR 55.12(c)(7)).
 - i. HUD does not consider improvements²⁸ to be incidental, meaning that this exception does not apply if there are any buildings or improvements in any portion of the floodplain.
 - ii. —The incidental exception does not apply to sites that plan to bring in fill for a Letter of Map Revision because the fill modifies the floodplain.
 - iii. For a visual representation of the incidental floodplain exception, see <https://www.hudexchange.info/resources/documents/Incidental-Floodplain-Exception-Illustration.pdf> .
 - iv. When invoking the incidental portion exception at 24 CFR 55.12(c)(7), a protective covenant or comparable restriction must be placed on the property's continued use to preserve the floodplain. This covenant must protect the entire portion of the site in the floodplain. The covenant or comparable restriction must run with the land to provide for permanent preservation of the floodplain. A restriction that is contained in a document that would expire at the conclusion of the HUD-insured mortgage does not meet the requirement for permanent preservation of the floodplain.

²⁷ Critical Actions are defined at 24 CFR 55.2(b)(3). Critical actions include roadways providing sole egress from flood-prone areas, and projects likely to contain occupants who may not be sufficiently mobile to avoid loss of life or injury during flood or storm events, e.g., persons who reside in hospitals, nursing homes, convalescent homes, intermediate care facilities, board and care facilities, and retirement service centers. Housing for independent living for the elderly is not considered a critical action.

²⁸ HUD defines improvements as buildings, roads, sidewalks, parking lots, permanent recreational areas with impervious surfaces, or other man-made structures or impervious surfaces other than landscaping.

- b. Refinances of currently HUD-insured mortgages are exempt from the 24 CFR Part 55 requirements when the refinance will not result in any physical impacts or changes except for maintenance under 24 CFR 50.19(b)(21) (CENST). However, the flood insurance requirements specified at 24 CFR 50.4(b)(1) and Section 9.6.F are still applicable.
 - c. The requirement for a 5 or 8-step analysis does not apply if the project is not on a wetland and has a Conditional Letter of Map Amendment (CLOMA) or of Map Revision (CLOMR) removing the entire site from the applicable floodplain prior to submission of the pre-application or, in the absence of a pre-application, prior to submission of the application for Firm Commitment. If the borrower has a CLOMA or CLOMR, HUD approval for a Firm Commitment will be conditioned on the borrower: (1) meeting the requirements of the CLOMA or CLOMR; (2) obtaining a Final Letter of Map Amendment (LOMA) or Map Revision (LOMR) removing the entire property from the applicable floodplain prior to Final Endorsement; and, (3) maintaining flood insurance on any building during the construction period until the LOMA or LOMR is issued. If any portion of the HUD-insured property remains in the floodplain or floodway after the CLOMA/CLOMR, the project will not qualify for this exception and must proceed with a 5 or 8-step decision making process (see 24 CFR 55.12(c)(8).)
5. Projects that are converting from a non-residential to a residential use are considered the same as “new construction” for floodplain management.
 6. In considering the safety of the residents, offsite floodways and other flood hazards will be evaluated in terms of separation distance, elevation differences, and the nature of the hazard in question. Unacceptable proximity to hazards may result in rejection of the application.
 7. Due to the potential for significant wave damage in Limit of Moderate Wave Action (LiMWA) areas, HUD will not approve applications for any new construction or substantial rehabilitation project in the LiMWA. HUD strongly discourages approving currently uninsured 223(f)s or currently insured 223(f)s with repairs at Level Two or above in the LiMWA and will only do so if the work meets the current standards for coastal high hazard areas in FEMA regulations (44 CFR 60.3(e)). HUD will consider on a case by case basis approving currently insured refinance transactions that do not exceed Level One repairs (as defined in Chapter 5 of this MAP guide) or currently assisted projects with minor rehabilitation.
 8. New construction and substantial improvement, as defined at 24 CFR 55.2(b)(10), in 100-year floodplains are strongly discouraged. This flood buffer zone is extended to the

500-year floodplain for proposed rehabilitation, refinancing, or new construction for facilities housing or serving mobility-impaired individuals, a critical action. Such sites in the applicable floodplain according to the best available data will not be considered for mortgage insurance unless the following steps are taken:

- a. HUD must determine if there may be extraordinary circumstances which lead to the conclusion that there are no practicable alternatives to the project site being in the floodplain. In order to make this determination, HUD must conduct an 8-step decision making process which includes publishing two public notices and taking comments, as summarized in 24 CFR 55.20²⁹. Prior to issuing the first public notice, HUD will require detailed information about how the property will be altered and improvements designed. This information includes the elevation of the property, the base flood elevation, and the location of life support systems.
 - i. The 8-step process may require as a condition of any project approval that a CLOMA or CLOMR for the buildings be issued prior to initial endorsement, a LOMA or LOMR be issued prior to Final Endorsement, and flood insurance be maintained on any building during the construction period until the issuance of the LOMA or LOMR.
 - ii. The 8-step process shall require that the lowest floor of new construction be elevated at or above the Base Flood Elevation of the applicable floodplain based on the best available FEMA data, plus two feet of freeboard.
 - iii. The 8-step process requires that all “critical actions” as defined in 24 CFR 55.2(b) (3) must comply with the requirements of 24 CFR 55.20(e).
 - iv. Instead of elevating non-residential or mixed-use structures that are not critical actions, the project may be designed and constructed such that below the flood level, the structure is non-residential and floodproofed to the level of the best available flood data plus two feet. Floodproofing requires structures to be watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic loads, hydrodynamic loads, the effects of buoyancy, or higher standards required by the FEMA National Flood Insurance Program as well as state and locally adopted codes.
 - v. The 8-step process shall be completed by HUD before issuance of the Firm Commitment. HUD will develop the 8-step, including the two notices, but the costs of publication will be borne by the borrower.
 - vi. The 8-step process shall consider three alternatives: the action as proposed, modifications within the aggregated project site, or no action, i.e., rejection of the application.

²⁹ Additional guidance, including an example 8-step process and sample notices, found here: <https://www.hudexchange.info/programs/environmental-review/floodplain-management/>

9. For purchase or refinancing actions described in 24 CFR 55.12(a)(2) or non-substantial repair, rehabilitation, modernization or improvement actions described in 24 CFR 55.12(a)(3), an abbreviated 5-step process pursuant to 24 CFR 55.12(a) may be used by HUD to determine their acceptability. The abbreviated process eliminates the two public notices and the alternatives analysis. Detailed information about the proposed actions, and about any plans for mitigation, must be submitted with the application or preapplication. HUD will evaluate risks and mitigation measures in making its decision. HUD discourages these actions if the lowest floor and/or the life support facilities, or egress and ingress of the existing building, are below the 100-year base flood elevation. The abbreviated review process shall be completed by HUD before issuance of the Firm Commitment.
10. Where a site does not appear to be located in the floodplain on official FEMA maps, but shows evidence of flooding or has a history of flooding, HUD shall qualitatively evaluate the acceptability of the site. Lenders will be required to provide extensive data to aid HUD in evaluating previously flooded or floodplain sites.
11. The cost of floodplain mitigation may be included in the proposed mortgage loan.

F. Flood Insurance (24 CFR 50.4(b)(1))

1. Flood insurance is property insurance that covers damages caused by flooding, ranging from the need for full replacement to repairs such as replacing flooring and walls. This type of insurance is typically not included in a standard property insurance policy. Flooding can cause a great deal of damage. Even if it does not destroy the property, it can fill the property with mud, silt, and other debris, and the moisture from the flooding may lead to rot, mold, mildew, and other problems. Many items may need to be rebuilt or replaced, forcing residents to stay in temporary facilities while their unit is made livable. Flood insurance mitigates these costs.

A project located in the 100-year flood zone, also known as the Special Flood Hazard Area (SFHA), has a 26% chance of flooding over the life of a 30-year mortgage. A project located in the moderate flood hazard zone (500-year floodplain) has a 6% chance of flooding over the life of a 30-year mortgage.

2. Any insurable structure that is located within a FEMA mapped SFHA is required to carry flood insurance under the National Flood Insurance Program for the term of the loan³⁰.

³⁰ FEMA defines structure as a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. Structure, for insurance purposes, means: (1) A building with two or more outside rigid walls and a fully secured roof, that is affixed to a permanent site; (2) A manufactured home ("a manufactured home," also known as a mobile home, is a structure: built on a permanent chassis, transported

General flood insurance requirements as well as required insurance coverage amounts are set forth in MAP Chapter 3.

At the time of Application for Firm Commitment, the lender must submit a completed Standard Flood Hazard Determination Form (found online at <https://www.fema.gov/media-library/assets/documents/225>) with proof that the new mortgagor has a commitment for flood insurance effective as of loan closing.

3. HUD will also require flood insurance on any building where the Advisory Base Flood Elevations (ABFE) or preliminary FEMA Flood Insurance Rate Map (FIRM) indicates it will be in a Special Flood Hazard Area. Additionally, Housing Approving Officials have the discretion to require flood insurance for buildings located³¹:
 - a. in the moderate flood hazard area (FEMA zones B or shaded X),
 - b. on a parcel that includes a SFHA (including those considered incidental for floodplain management),
 - c. in coastal areas not in a SFHA but subject to tidal flooding, tsunami, wave action or storm surge, including LiMWAs, and
 - d. where topography or past flooding create a high risk for flood events.
4. All new and renewal leases for projects where HUD has required flood insurance must contain acknowledgements signed by residents indicating that they have been advised that the property is in a floodplain and flood insurance is available for their personal property.
5. Owners can significantly lower flood insurance premiums by elevating or flood proofing structures. HUD encourages these measures and may require them in some cases.

G. Wetlands Protection (24 CFR 50.4(b)(3))

1. Applications for Firm Commitment are subject to regulations regarding wetlands at 24 CFR Part 55, which implement Executive Order (EO) 11990 "Protection of Wetlands." EO 11990 prohibits the development or disturbance of wetlands and proposals impacting wetlands unless there is no practicable alternative and the proposed action includes all practicable measures to minimize harm to the wetland. Proposals impacting wetlands must be reviewed by HUD under the 8-step process in 24 CFR 55.20 to determine consistency with HUD's-wetland protection policy.

to its site in one or more sections, and affixed to a permanent foundation); or (3) A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws. For the latter purpose, "structure" does not mean a recreational vehicle or a park trailer or other similar vehicle, except as described in paragraph (3) of this definition, or a gas or liquid storage tank (44 CFR 59.1).

³¹ According to FEMA, 20 to 25% of claims nationally are for properties located outside of the 100-year flood zone.

2. The term "wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. This definition includes both wetlands subject to and those not subject to section 404 of the Clean Water Act (i.e. jurisdictional and non-jurisdictional wetlands). Manmade retention/detention ponds are not considered wetlands unless they have the characteristics of a wetland as noted above. Lenders shall use the Fish and Wildlife Service's National Wetlands Inventory (NWI) as a primary screening tool but must also submit observed or known wetlands not indicated on NWI maps. HUD must consider onsite and off-site impacts that result in draining, impounding, or destroying wetlands.

If an NWI map indicates the presence of wetlands, FWS staff, if available, must find that no wetland is present in order for the action to proceed without further processing. Where FWS staff is unavailable to resolve any NWI map ambiguity or controversy, an appropriate wetlands professional must find that no wetland is present in order for the action to proceed without Section 55.20 processing.

3. New construction or rehabilitation projects that develop or disturb onsite or offsite wetlands will be considered only after HUD conducts an 8-step decision-making process as described in 24 CFR 55.20 and includes consultation, issuing two public notices and taking public comment. Developing or disturbing onsite or offsite wetlands includes draining, dredging, channelizing, filling, diking, impounding and related activities.
4. The first five steps of the 8-step process are not required if the project involves new construction outside the 100-year floodplain³² and the applicant has submitted with its application to HUD an individual Section 404 permit (including approval conditions) issued by the U.S. Army Corps of Engineers, or by a State or Tribal government under Section 404(h) of the Clean Water Act, and all wetlands adversely affected by the project are covered by the permit³³. This streamlining approach is not available to sites with a general Section 404 permit. Wetlands under local or state jurisdiction are subject to state or local review as appropriate. However, compliance with state or local requirements is not a substitute for the eight-step process.
5. If a project impacts wetland, the lender should consult early with the Multifamily field office and must provide extensive data to aid HUD in evaluating wetland impacts.

³² 500 year floodplain for critical actions.

³³ See 24 CFR 55.28.

- a. HUD may require that the lender submit a wetlands delineation performed by a qualified professional to evaluate the direct and/or indirect wetland impacts of the project.
 - b. Appropriate and practicable compensatory mitigation is recommended for unavoidable adverse impacts to more than one acre of wetlands. Compensatory mitigation is defined at 24 CFR 55.2(b)(2) and includes but is not limited to: permittee-responsible mitigation, mitigation banking, in-lieu fee mitigation, the use of preservation easements or protective covenants, and any form of mitigation promoted by state or Federal agencies.
 - c. The 8-step process shall consider three alternatives: the action as proposed, modifications within the site controlled by the applicant, or no action, i.e., rejection of the application.
6. When on-site wetlands exist but will not be developed or disturbed, HUD will require assurance from the Borrower that no activities that may impact a wetland will be undertaken without prior approval from HUD. Where appropriate, this will take the form of a restrictive covenant.

H. Noise Abatement and Control (24 CFR Part 51, Subpart B)

1. HUD standards regarding the acceptability of noise impacts on residential property are found at 24 CFR Part 51 Subpart B. The noise regulation applies to all projects as noted below except those categorically excluded (CENST) under 24 CFR 50.19 (see Sections 9.1.C.1 and 2.)
2. For new construction and conversions from non-residential to residential located above the noise threshold criteria, projects shall incorporate noise attenuation features as required by HUD environmental criteria and standards at 24 CFR 51.104. The interior standard is 45 dB (decibels).

The "Normally Unacceptable" noise zone includes community noise levels from above 65 dB to 75 dB. Approvals in this noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dB but does not exceed 70 dB, or a minimum of 10 decibels of additional sound attenuation if the day-night average sound level is greater than 70 dB but does not exceed 75 dB. Where the sound attenuation is determined using the online Sound Transmission Classification Assessment Tool (STrraCAT), the required attenuation value provided by the tool may be used (<https://www.hudexchange.info/stracat/>).

Locations with day-night average noise levels above 75 dB have "Unacceptable" noise exposure.

Noise assessments must be projected out 10 years.

3. For rehabilitation projects that require an Environmental Assessment level of review HUD will actively seek noise mitigation for projects in the “Normally Unacceptable” or “Unacceptable” noise zones. For projects in the “Unacceptable” zone where HUD policy strongly encourages conversion of noise exposed sites to land uses compatible with the high noise levels, HUD will also critically evaluate the application to determine the project’s compatibility with HUD’s interior noise goal of a day-night average of 45 decibels, and to determine the noise level’s effect on marketability.
4. For 223(f) and other refinance or rehabilitation projects at the CEST level of review, HUD will encourage appropriate noise attenuation measures for inclusion in the project. Noise exposure by itself will not result in the rejection of existing residential properties for mortgage insurance but is a marketability factor that HUD will consider in determining if the amount of any insurance or other assistance that may be given. Projects at the CEST level of review are not required to complete a noise calculation but must complete preliminary noise screening of distance from noise sources. The preliminary screening must include distance from the project to each noise source.
5. Lenders should contact regional multifamily staff prior to attempting to design mitigation measures.
6. New construction or conversions of existing structures to residential housing in the Unacceptable Noise Zone, where outdoor noise levels are above 75 dB, are generally prohibited. If the Regional Office wants to consider such a proposal, it must:
 - a. Require an Environmental Impact Statement (EIS). If the Regional Office believes that the proposal is acceptable based on the EIS, it must then obtain project approval, including approval of noise mitigation measures, from the appropriate Assistant Secretary as required in HUD’s noise regulations.
 - b. If the Regional Office determines that noise is the only environmental issue and no outdoor noise sensitive activity that is not mitigated to below HUD’s 65 dB standard will take place on the site, it may request a waiver of the EIS Requirement by the appropriate Assistant Secretary as required in HUD’s noise regulations and must also obtain project approval, including approval of noise mitigation measures, from that Assistant Secretary.³⁴

7. Balconies³⁵.

³⁴ Information about HUD’s EIS waiver process for sites in the Unacceptable Noise Zone found at <https://www.hudexchange.info/programs/environmental-review/housing/#faq>.

³⁵ Notice CPD-16-19: Balcony Policy Under 24 CFR 51, Subpart B as it Applies to Parts 50 and 58 Regarding Building Facades Exposed to Noise.

- a. There are generally no restrictions on balconies for existing residential projects, although HUD encourages noise attenuation. For new construction projects or existing projects that convert from non-residential to residential in Unacceptable and Normally Unacceptable noise areas, bedrooms and studio apartments may have direct access to balconies if:
 - i. The interior noise levels have been mitigated to not exceed a day-night average noise level of 45 dB as documented by the Sound Transmission Classification of the dwelling unit's exterior walls factoring in fenestration.
 - ii. Appropriate ventilation is provided by a mechanical ventilation system and not by opening doors or windows, and
 - iii. An Operations and Maintenance plan is in place that requires periodically inspecting seals and repairing or replacing building components when their performance diminishes.
 - b. Bedrooms and studio apartments may not have direct access to balconies if there is no mechanical ventilation and there is no Operations and Maintenance plan requiring periodic inspection and repair or replacement of all window and door seals as needed.
 - c. HUD Approving Officials may require additional mitigation measures or deny approval of balconies based on noise or other concerns. In addition, Environmental Assessment or Environmental Impact Statement levels of environmental review must consider potential health effects stemming from issues related to noise sources, such as air quality (24 CFR 50.4(h)) and toxic hazard exposure near transportation (24 CFR 50.3(i)).
8. The HUD noise regulation allows flexibility for non-acoustic benefits in limited situations. The project must meet all of the conditions at 24 CFR 51.105 and receive the approval of a Regional or Field Environmental Officer.

9. Railroad Vibration, Noise, and Location:

- a. Buildings closer than 100 feet to a railroad track are often subject to excessive vibration transmitted through the ground. For existing properties, the structure should be examined for damage caused by vibrations. A railroad vibration study and vibration mitigating measures may be required. These studies should be performed by a registered professional engineer with experience in structural vibration analysis.
- c. Whenever rail lines are less than 100 feet from a facility, HUD approval should be obtained prior to the application submission. In addition to concerns about

vibration, HUD will want documentation that the project complies with applicable LSTF safety standards.

- d. Railyards (areas of multiple track sections used for assembling and disassembling trains) have been determined to create loud, impulsive sounds. For projects within 3,000 ft of actively operating rail yards, HUD may require up to 8 dB additional noise attenuation to be incorporated in the project. In determining whether this is necessary, HUD will consider the impact of existing or proposed barriers, topography, and nature of the rail yard operations.

I. Explosive and Flammable Hazards (24 CFR Part 51 Subpart C)

HUD will not insure a property where structures and residents will be exposed to unacceptable risks posed by proximity to explosive or flammable hazards.

1. For new construction projects, rehabilitation projects where residential density is increased, projects where there is a conversion from non-residential to residential use, or projects where a vacant building is made habitable:
 - a. Aboveground storage facilities with explosive or flammable material contents must comply with the Acceptable Separation Distance (ASD) standards at 24 CFR Part 51 Subpart C as amended by the final rule permitting the application of NFPA Code 58 (2017) in lieu of HUD ASD standards for residential propane tanks (85 FR_4225_(January 24, 2020)). Analysis of sites within one mile of these types of facilities must be submitted by the lender and reviewed by HUD as part of the HEROS review as per the guidance on the HUD Exchange: <https://www.hudexchange.info/environmental-review/explosive-and-flammable-facilities/>.
 - b. For propane tanks that meet the new exemption, submit documentation that the specific tanks meet the NFPA Code 58 (2017) requirements, including separation distance.
 - c. If a plan is agreed upon with HUD before the issuance of a Firm Commitment, these hazards may be mitigated during the construction period, if the work can be done on the subject property. In cases where off-site mitigation is required, the remediation must be completed prior to initial closing.
2. A useful tool for calculating ASDs can be found on the HUD Exchange at <https://www.hudexchange.info/programs/environmental-review/asd-calculator/>
3. If a barrier will be constructed as hazard mitigation, HUD's Barrier Design Guidance (Guidebook 6600.G) for flammable/explosive hazards mitigation is available on the

HUD Exchange at <https://www.hudexchange.info/resources/documents/Barrier-Design-Guidance-HUD-Projects-Near-Hazardous-Facilities.pdf>.

Only a licensed professional engineer (civil or structural) should design and oversee the construction of mitigation barriers.

4. For existing residential projects to be refinanced or purchased that do not involve an increase in residential density, HUD will substantively evaluate the risks associated with proximity to hazardous facilities. HUD reviews of such projects will consider the potential danger presented by existing and proposed liquid fuel and gas storage tanks, and may require mitigation.
 - a. Whenever stationary aboveground storage tanks (ASTs) containing liquid fuel (other than LPG/propane tanks that do not exceed 1,000 gallons in water capacity and which submit documentation that they are in compliance with NFPA Code 58 (2017), or common liquid industrial fuels with a capacity of 100 gallons or less), or tanks of any size containing pressurized gas exist on site or on an adjacent site that could impact the HUD project, a conformance letter from the governing Fire Department/District must be requested. The letter must specifically address the safety of the AST(s). Correspondence with the fire department must be included in the application submission.
 - b. In cases where safety letters cannot be obtained for existing ASTs or where new ASTs are being added, an acceptable separation distance (ASD) calculation must be included in the application, and HUD may require mitigation.

J. Air Quality (24 CFR 50.4(h))

1. The Clean Air Act was implemented to remedy the damaging effects that poor air quality can have on human health and the environment. The Clean Air Act is administered by the U.S. Environmental Protection Agency (EPA), which sets National Ambient Air Quality Standards (NAAQS). These are limits on certain “criteria” air pollutants, including limits on how much of these pollutants can be in the air anywhere in the United States. Geographic areas that are in compliance with standards are called “attainment areas,” while areas that do not meet standards are called “nonattainment” areas. The location of areas designated by U.S. EPA as polluted under the Clean Air Act is documented in the U.S. EPA’s Nonattainment Areas for Criteria Pollutants (Green Book) (<https://www.epa.gov/green-book>).
2. In addition to the EPA, the Clean Air Act is administered by state, tribal, and local agencies, which are responsible for developing local solutions to air quality problems.

States must develop State Implementation Plans (SIPs) to regulate their state air quality. In order to show compliance with the NAAQS, projects funded by HUD must demonstrate that they conform to the appropriate SIP.

3. For new construction projects located in a nonattainment or maintenance area, HUD must determine if the estimated emission levels exceed de minimis emissions levels for the nonattainment or maintenance level pollutants. If the estimated emissions levels exceed de minimis levels, HUD must determine whether the project can be brought into compliance with the State Implementation Plan through modification or mitigation.
4. The HEROS website includes an FAQ on completing the Clean Air Act Screen in HEROS. <https://www.hudexchange.info/faqs/2794/im-not-sure-what-im-supposed-to-enter-in-the-air-quality-screen>.
5. Additional information about complying with the Clean Air Act found here: <https://www.hudexchange.info/programs/environmental-review/air-quality/>

K. Airport Hazards (24 CFR Part 51 Subpart D)

1. HUD standards regarding the acceptability of property located in Runway Clear Zones (also known as Runway Protection Zones), Clear Zones, and Accident Potential Zones are found at 24 CFR Part 51 Subpart D. An Accident Potential Zone (Zones I and II) is an area at military airfields that is beyond the Clear Zone.
2. Construction or major rehabilitation of any property located within a Clear Zone is prohibited. Acquisition and refinance of projects within Clear Zones are allowed with notification requirements as per Section 9.6.K.3. HUD must determine that projects located in Accident Potential Zones are generally consistent with Department of Defense land use compatibility guidelines for Accident Potential Zones.
3. HUD, as part of its environmental review for an existing property, shall advise the lender who will advise the mortgagor purchasing the property that the property is in a Runway Clear Zone, and what the implications of such a location are. The mortgagor purchasing the property must sign a statement acknowledging receipt of this information. HUD may reject applications for existing properties within a Runway Clear Zone or Clear Zone because of the possibility that the property may be acquired at a later date by the airport operator.

L. Coastal Barrier Resources (24 CFR 50.4(c)(1))

Under the Coastal Barriers Resources Act, HUD is prohibited from insuring a project located within designated coastal barriers of the Atlantic Ocean, Gulf of Mexico, or the Great Lakes, known as Coastal Barrier Resource System (CBRS) units and shown on associated Fish and Wildlife Service maps (see the Official CBRS Maps webpage, <https://www.fws.gov/cbra/maps/index.html> , for instructions on obtaining an official CBRS map and unit number). A project located within a CBRS unit or that includes a facility (such as a water main or a utility conduit) leading to a CBRS unit will not be eligible for application processing. Additional information is found here: <https://www.hudexchange.info/programs/environmental-review/coastal-barrier-resources>.

M. Coastal Zone Management (24 CFR 50.4(c)(2))

Projects located within a state’s coastal management zone must be determined to be consistent with the approved state Coastal Zone Management program. In many states, HUD will require a letter from the State Coastal Zone Management Agency confirming consistency with the approved program. Mortgagees should be aware of the extent of coastal management zones in coastal states and contact the field office early when examining a proposal in a coastal zone. Additional information found here: <https://www.hudexchange.info/programs/environmental-review/coastal-zone-management>, including state specific information: <https://coast.noaa.gov/czm/consistency/states/>.

N. Endangered Species (24 CFR 50.4(e))

1. Under Section 7 of the Endangered Species Act (ESA), HUD must consult with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service (the Services) whenever a proposal may affect an endangered or threatened species or its habitat. The ESA is jointly administered by the Secretaries of the Interior and Commerce. The U.S. Fish and Wildlife Service (FWS) is responsible for terrestrial and freshwater species and the National Marine Fisheries Service (NMFS) is responsible for marine species and anadromous fish, such as salmon. Some projects, especially those in the Pacific Northwest, may need to consult with both agencies.
2. A required consultation should be assumed for any site within the critical habitat (as defined in 50 CFR Part 17 and Part 226) of a listed species; consultation may also be required even if no critical habitat is present. As of 2015, critical habitat has been designated for a little less than 50% of threatened and endangered species. The lack of critical habitat is not an indicator of the presence or lack of presence of a listed species.
3. In areas where impacts on endangered or threatened species are a concern, all appropriate information regarding possible impacts of the project should be provided to HUD as early as possible. The Services may have a regional letter, memorandum or other document

that allows HUD to make a No Effect determination for projects that meet specific criteria.

4. The HEROS Environmental Report should include review of published information, including but not limited to information on the Services websites (for example, Information for Planning and Consultation (iPaC; <https://ecos.fws.gov/ipac/>)) regarding the possible presence and associated critical habitat of any listed species in the vicinity of the proposal and provide HUD with the results of the research. Furthermore, if a proposal is in an area of potential impacts on a listed species or its critical habitat, any possible associated impacts caused by the proposal should be discussed in the HEROS Environmental Report. Lenders and third party consultants can request species lists, prepare Biological Assessments for HUD's review, and provide the information needed for consultation, but HUD must initiate formal and informal consultation with the Services.
5. If the project activity could affect an endangered/threatened species or its habitat, HUD must make a determination of effect. HUD must document a "no effect" determination with scientific information or a regional letter or memorandum but does not need to consult with the Services on projects it determines will have no effect. HUD must seek concurrence of the Services on any "may affect, not likely to adversely affect" determination and associated mitigation measures. HUD must initiate formal consultation under Section 7 of the Endangered Species Act for a "may affect, likely to adversely affect" determination. For all effect determinations, the lender may be required to obtain special studies such as habitat assessments, surveys or biological assessments at the borrower's cost.
6. Consultation under Section 7 of the Endangered Species Act may result in more stringent conservation measures than would otherwise be imposed.

O. Farmlands Protection (24 CFR 50.4(j))

1. The purpose of the Farmland Protection Policy Act is to minimize the effect of Federal programs on the unnecessary and irreversible conversion of important farmland to nonagricultural uses. Important Farmland includes prime farmland, unique farmland, and/or land of statewide or local importance. Farmland subject to Farmland Protection Policy Act requirements does not have to be currently used for cropland.
2. For new construction, HUD must consider whether the project will have an impact on important farmland.
3. There are a few exemptions to the Farmland Protection Policy Act, including one for land already in or committed to urban development. Farmland subject to Farmland Protection

Policy Act requirements does not have to be currently used for cropland. USDA/NRCS regulations contained at 7 CFR 658.2 define “committed to urban development” as land with a density of 30 structures per 40-acre area; lands identified as “urbanized area” (UA) on the Census Bureau Map or as urban area mapped with a “tint overprint” on USGS topographical maps; or as “urban-built-up” on the USDA Important Farmland Maps. Note that land “zoned” for development, i.e. non-agricultural use, does not exempt a project from compliance with the FPPA.

4. Additional information about farmland, including consulting with the USDA Natural Resources Conservation Service, found here:

<https://www.hudexchange.info/programs/environmental-review/farmlands-protection/>.

P. Sole Source Aquifers (24 CFR 50.4(d))

1. Aquifers are drinking water systems that may be impacted by development. The Safe Drinking Water Act of 1974 requires protection of drinking water systems that are the sole or principal drinking water source for an area and which, if contaminated, would create a significant hazard to public health.
2. New construction and Environmental Assessment level rehabilitation projects located within the boundaries of a sole source aquifer or the recharge area of a designated sole source aquifer must be reviewed by EPA for the potential to contaminate the sole source aquifer.
3. Additional information about sole source aquifers, including a national map of sole source aquifer locations, found here: <https://www.hudexchange.info/programs/environmental-review/sole-source-aquifers>.
4. Some HUD regions have established MOUs or other agreements for HUD projects which can be found here: <https://www.hudexchange.info/resource/5778/regional-sole-source-aquifer-mous-between-hud-and-epa/>.

Q. Wild and Scenic Rivers (24 CFR 50.4(f))

1. The Wild and Scenic Rivers Act provides federal protection for certain free-flowing, wild, scenic, and recreational rivers designated as components or potential components of the National Wild and Scenic Rivers System (NWSRS)³⁶.
2. For new construction and rehabilitation, HUD must consider whether projects in proximity to a wild and scenic river could impact the designated river or be inconsistent

³⁶ The Act requires projects to consider Wild and Scenic Rivers, Study Rivers and the Nationwide Rivers Inventory. Follow link in 9.6.Q.3 for details.

with the management and land use plan for the designated river area.

3. Additional information about the Wild and Scenic Rivers Act and compliance requirements found here: <https://www.hudexchange.info/programs/environmental-review/wild-and-scenic-rivers/> .

R. Environmental Justice (24 CFR 50.4(l))

1. EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that federal actions not result in disproportionately high and adverse health of environmental effects on minority or low-income populations.
2. When a project impacts a minority or low-income population and there are unmitigated adverse environmental impacts such as a location in a floodplain or a noise impacted site, HUD will perform the necessary analysis before determining the acceptability of the project. A project that will receive a Low-Income Housing Tax Credit or a Section 8 HAP contract and has unmitigated adverse environmental impacts is an example of when environmental justice concerns should be evaluated.
3. HUD will request information to complete this analysis as necessary and will advise the lender of any Environmental Justice concerns including recommendations on their resolution. In most cases the preferred resolution would be to modify the project to eliminate or at least reduce the adverse effects, when feasible.
4. Additional information on complying with Environmental Justice found here, including notification and involvement of the impacted community when there are unmitigated adverse environmental impacts: <https://www.hudexchange.info/programs/environmental-review/environmental-justice/>

S. Commonly found or Observed Additional Nuisances and Hazards

These requirements are applicable to all transaction types except those categorically excluded from all environmental review (CENST), as discussed at Sections 9.1.C.1 and 2, or as noted below.

1. Pressurized pipelines transferring flammable or combustible liquids and gases are a recognized potential hazard to properties and their occupants.³⁷ Because of the potential hazard, HUD has determined that:
 - a. No structures, ancillary facilities or structures, common areas, parking areas or like related property improvements or features may be constructed or located within 10 feet of or on the easement of a pressurized pipeline transferring flammable or combustible liquids and gases that exceed 200 psi operating pressure (pressurized pipelines). This does not apply to distribution lines supplying only the facility itself.
 - b. All new construction, rehabilitation projects where residential density is increased, projects where there is a conversion from non-residential to residential use, or projects where a vacant building is made habitable must consider the potential hazard of pressurized pipelines. The analysis must identify all buried and aboveground pressurized pipelines within a one (1) mile radius of the property that exceed 200 psi operating pressure. Suggested resources include the National Pipeline Mapping System (NPMS), State and Local Agencies, pipeline markings identified on site, the 811 system, and property surveys. Once the pipelines are identified and relevant pipeline diameter and operating pressure has been obtained, refer to the table found in the Appendix A to determine the Baseline Pipeline Impact Radius.

Once the steps above are completed, one of the two outcomes below will need to be completed:

- i. If any of the properties' buildings, ancillary facilities or structures, common areas, parking areas or like related property improvements or features are located within the Baseline Pipeline Impact Radius, the lender must obtain an engineering report to assess the Thermal Radiation and Blast Overpressure hazard³⁸ to the HUD assisted property or occupants, and determine any mitigation measures as required.
 - ii. If none of the properties' buildings, ancillary facilities or structures, common areas, parking areas or like related property improvements or features are located within the Baseline Pipeline Impact Radius, these facts should be noted in the environmental analysis and no further assessment will be needed.
- c. If the pipeline poses a safety hazard, HUD requires mitigation to address the issues

³⁷ Pressurized pipelines transferring flammable and combustible liquids and gases does not include vertical or horizontal drilling used in Conventional or Hydraulic Fracturing for mineral exploration or recovery. It does include above-ground pressurized distribution pipelines related to the fracturing.

³⁸ Thermal heat flux exposure threshold of 450 BTU/hr/ft² for people in open spaces where people congregate, such as parks and playgrounds; thermal heat flux exposure threshold of 10,000 BTU/hr/ft² for buildings; and blast overpressure threshold of 0.5 psi as the maximum allowable pressure that can be measured at a distance from an explosive hazard applicable to buildings, building occupants and outdoor unprotected facilities.

and may reject the project if no mitigation is possible. Mitigation can include modifying the building design using heat retardant and high tensile strength materials; rearranging the site plan and exterior building shapes; or constructing a barrier designed by a licensed professional structural or civil engineer.

2. HUD recognizes that certain free-standing structures may pose a hazard to properties and their occupants through structural failure or other causes. Structures considered under this part include high voltage utility post and towers; free-standing radio/TV/cell towers; free-standing water towers; wind turbines; and other like free-standing structures. Exclusions from this definition include items affixed to the structure (such as a radio/TV antenna, satellite dishes, cellphone towers, and similar features), unless specifically identified as a hazard during the review. Additional exclusions include local service electric lines and poles.

Because of the potential hazards of such structures, HUD has determined that:

- a. No buildings, ancillary facilities, structures or common areas may be constructed or located within the easement of these fall hazards.
- b. All buildings, ancillary facilities, structures or common areas, must consider the potential fall hazards from such free-standing structures. The first step is to determine the maximum fall distance of the free-standing structure.
 - i. If the maximum fall distance does not include any buildings, ancillary facilities, structures, or common areas document this in the environmental analysis in HEROS.
 - ii. For towers with a lattice structure, the maximum fall distance is 50% of the height of the tower.
 - iii. If any of the property's buildings, ancillary facilities, structures or common areas are located within the maximum fall distance around the free-standing structure, the lender must submit an engineering report to evaluate the engineered fall distance of the structure, which may be less than the maximum fall distance. The engineered fall distance must be calculated by a registered professional engineer.
 1. For new construction projects, projects that convert a building to residential use, or projects that increase residential density, all structures must be outside of the engineered fall distance. For monopoles with no seams, welds, connections or weak points where a sustained load could cause failure to the pole length, HUD will accept certifications by a licensed structural engineer that the monopole and base are in good condition and comply with all structural requirements in lieu of a specified fall distance.

2. For existing residential facilities that do not increase residential density that are within the engineered fall distance, the lender may submit a report from a registered professional engineer that includes the condition of the tower, the tower specifications, the date of the last tower maintenance, pictures of the tower including the foundation, an assessment of the hazard to the HUD project, and a discussion of any mitigation measures that could minimize this risk. Housing staff will determine whether to grant an exception to the prohibition on being within the engineered fall distance.
3. HUD requirements for oil or gas wells, sour gas wells and slush pits:
 - a. Operating or planned drilling site: No residential structures may be within 300 feet of the boundary of the drilling site.
 - b. Operating well: No residential structures may be within 75 feet of an operating well, unless the following mitigating measures are taken:
 - i. Controls on nuisances;
 - ii. Controls on noise caused by pumping; and
 - iii. Spill controls to reduce risk of contamination.
 - c. Abandoned wells.
 - i. Confirmation by the State government that the well is safely and permanently abandoned. No residential structures may be located within 10 feet.
 - ii. If there is no confirmation letter, no residential structures may be located within 300 feet of an abandoned well.
 - d. Sour gas (hydrogen sulfide bi-product) wells: Separation distance must be determined by a Petroleum Engineer, with concurrence by State government.
 - e. Slush pits (used for drilling mud mixes for well lubrication):
 - i. If on-site, hazards analysis is required to be performed pursuant to Section 9.4. Mitigation must include, but not necessarily be limited to, removal of all drilling mud from the site and backfilling with clean compacted material.
 - ii. If offsite, hazards analysis must be performed pursuant to Section 9.4.
 - f. Hydraulic fracturing (fracking) activities within or adjacent to the project site.
 - i. Fracturing well pads. No residential structure may be within 300 feet of the boundary of an existing or planned fracturing well pad.
 - ii. If fracturing well pads are greater than 300 feet but within 1000 feet of a proposed MF project, HUD requires a hazard analysis from a qualified party such as a geologist or a geotechnical engineer evidencing that lateral fracturing would not negatively affect soil stability, cause petroleum releases, or create other risks to the HUD property and/or residents. etc. The analysis should include information

about extraction wells and other above ground fracturing operations within 1000 feet of the project site and an assessment of risks from these operations. The report should include information regarding the status of each horizontal well and future plans for new drilling at or adjacent to the site.

- iii. MAP requirements related to above ground storage tanks (Section 9.6.I) and pressurized pipelines (Section 9.6.S.1) apply to the above ground fracturing operations.
 - iv. If issues are identified, HUD requires mitigation to address the issues and may reject the project if no mitigation is possible.
4. If any part of a site is to be developed on filled ground, HUD may require that all grading be properly controlled to prevent differential earth movement, sliding, erosion, and/or other occurrences which might damage dwellings, streets or other improvements. Excessive slopes, soil compatibility, and potential for erosion, are important site planning factors that impact the cost of development and the ultimate success of the project.
 5. HUD may require mitigation of a variety of additional nuisances and hazards on the property which would affect the health and safety of residents and the security of the collateral.
 6. Regional Centers or Satellite Offices may adopt additional requirements to address unique local concerns, but, if any local requirement is mandated, the Regional Office must inform the Deputy Assistant Secretary for Multifamily Housing and the HUD Headquarters Housing Environmental Clearance Officer of the requirement and its rationale.

T. Environmental Assessments (24 CFR 50 Subpart E)

An environmental assessment (EA) level review requires compliance with NEPA in addition to the laws and authorities listed at Section 9.3 and the additional Housing Specific requirements at Section 9.6.S. When an EA level of review is required (See Section 9.1.C.5), HUD will require and analyze information to determine if the project results in any significant impact and if an environmental impact statement is needed.

The following are EA requirements that must be included in the HEROS submission³⁹:

³⁹ Additional details and examples of the EA requirements provided at <https://www.hudexchange.info/programs/environmental-review/housing/#faq> . The HEROS Partner EA form also gives a good overview of EA requirements <https://files.hudexchange.info/resources/documents/Environmental-Assessment-Factors-and-Analysis-Partner-Worksheet.docx>

1. Purpose and Need. HUD's EA review requires a project justification that outlines the objectives of the environmental review. The purpose and need statement provides a framework for environmental decision-making.
2. Existing Conditions and Trends. HUD's EA review must determine existing physical conditions of the project area and also describe the character, features and resources of the project area and its surrounding. This section should identify the trends that are likely to continue in the absence of the project.
3. Effects Analysis. HUD's EA review must consider any changes to the human environment that are reasonably foreseeable and have a reasonably close causal relationship to the HUD project. Consistent with 40 CFR 1508.1(g), HUD's EAs must discuss both effects that occur at the same time and place as the proposed project and any effects that are farther removed in time or distance from the project area (e.g. potential changes to the land use and development patterns of the surrounding community.) This analysis must include the full aggregated project site.
4. Alternatives. Projects must always consider the No Action alternative. When there are adverse environmental impacts, HUD's EA review should also identify other reasonable courses of action that were considered and not selected. It is important to include the benefits and adverse impacts to the environment of each alternative, and the reasons (e.g. economic, engineering or others) for rejecting it. HUD staff are considering an application for FHA at a particular site and therefore are limited to considering three alternatives: the action as proposed, modifications within the site controlled by the applicant, or no action, i.e., rejection of the application.
5. Environmental Assessment Factors. The EA must analyze the project's impacts on land development, socioeconomic factors, community facilities and services, and natural features.⁴⁰ The analysis will vary from project to project. For example, a project designed to house families will focus on access to schools, parks and recreation while a project designed to house seniors would instead focus on healthcare and social services. Some EA factors listed below. For a full list with suggested resources see footnote 34.
 - a. Conformance with comprehensive plans, zoning compatibility, site safety, energy consumption, and urban impact.
 - b. Availability of services like educational facilities, commercial facilities, health care and social services.
 - c. Availability of supporting infrastructure such as solid waste, wastewater, storm water, and access to municipal water supply, public safety (Police, Fire, and

⁴⁰ Guidance on considering EA factors found at <https://files.hudexchange.info/resources/documents/Environmental-Assessment-Factors-Guidance.pdf>].

Emergency Medical Services), open space and recreation, cultural facilities, and transportation.

U. Operation and Maintenance Plans.

For projects that contain lead based paint (LBP) or asbestos, or have ongoing risks such as radon or contamination that may require permanent installation of ventilation, detection or alarm devices, the borrower or project architect is responsible for engaging the services of qualified abatement contractor(s) as required by the relevant standard to prepare a scope of work for the abatement or mitigation. Where the scope of abatement work consists of permanent enclosure or encapsulation or ongoing monitoring, but not removal, a qualified consultant or abatement contractor(s) must also prepare, separate from the scope of abatement work, an Operations and Maintenance (O&M) Plan. The O&M Plan must describe ongoing maintenance procedures to be followed for as long as the hazard remains in place. All abatement work and ongoing maintenance activities for radon, LBP, asbestos, and/or any other hazards shall conform to the requirements described in this chapter. A condition shall be attached to the Firm Commitment requiring that the borrower operate and maintain the property consistent with the referenced O&M plan(s) for the duration of the insured mortgage.