Guidance for Documenting and Reporting Performance in Achieving Land Revitalization

The Office of Superfund Remediation and Technology Innovation (OSRTI) and Federal Facilities Restoration and Reuse Office (FFRRO)

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List of Acronyms

BRAC – Base Realignment and Closure
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS – Comprehensive Environmental Response, Compensation, and Liability Information System
CPRM – Cross-Program Revitalization Measures
EPA – U.S. Environmental Protection Agency
FFRRO – Federal Facilities Restoration and Reuse Office
FOSL – Finding of Suitability to Lease
FOST – Finding of Suitability to Transfer
FOSET – Finding of Suitability for Early Transfer
FUDS – Formerly Used Defense Sites
FUSRAP – Formerly Utilized Sites Remedial Action Program
GIS – Geographical Information System
GPRA – Government Performance and Results Act
GPS – Global Positioning System
IC – Institutional Control
IMC – Information Management Coordinator
LTHHP EI – Long-Term Human Health Protection Environmental Indicator
NCP – National Contingency Plan
NPL – National Priorities List
NTCRA – Non-time Critical Removal Action
OMB – Office of Management and Budget
OSRTI – Office of Superfund Remediation and Technology Innovation
OSWER – Office of Solid Waste and Emergency Response
OU – Operable Unit
PART – Program Assessment Rating Tool
PFP – Protective for People Under Current Conditions
POLREPS – Pollution Reports
PRE – Property Reuse Evaluation
RA – Remedial Action
RAU – Ready for Anticipated Use
RCRA – Resource Conservation and Recovery Act
RD – Remedial Design
RfR – Ready for Reuse
RI/FS – Remedial Investigation/Feasibility Study
ROD – Record of Decision
RPM – Remedial Project Manager
SA – Superfund Alternative
SPIM – Superfund Program Implementation Manual
UST – Underground Storage Tanks

1. Introduction

1.1 Purpose and Applicability

The purpose of this guidance[1] is to provide technical direction to U.S. Environmental Protection Agency (EPA) managers and staff in fulfilling the Agency's responsibilities for documenting and reporting accomplishments in achieving revitalization of land at Superfund and Federal facility sites.

Specifically, this guidance covers the following types of sites:

1. Proposed, final, and deleted National Priorities List (NPL) sites, including Federal facilities;
2. Superfund Alternative (SA) Sites;[2]
3. Non-time critical removal actions (NTCRA); and
4. Certain non-NPL Federal facilities and Formerly Used Defense Sites (FUDS).[3]

This guidance has been written to provide Agency personnel with a consistent framework to identify, evaluate, document, and report accomplishments at sites being addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Specifically, it sets guidelines for determining and documenting revitalized *acres* and *sites* when entire sites or specific Operable Units (OUs) of sites meet the requirements of two key performance measures, the "Protective for People Under Current Conditions" (PFP) measure and

[1] This guidance is not a regulation itself, nor does it change or substitute for any regulations. Thus, it does not impose legally binding requirements on the Environmental Protection Agency (EPA), States, Tribes, or the regulated community. This guidance does not confer legal rights or impose legal obligations upon any member of the public. Interested parties are free to raise questions and objections about the substance of this guidance and the appropriateness of the application of this guidance to particular situations. EPA and other decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from those described in this guidance. This guidance does not change any existing policies and practices for carrying out investigations and cleanups. Furthermore, achieving any of the performance measures in this guidance does not provide any legal rights or legally enforceable commitments regarding EPA's enforcement intentions or any party's potential liability at the site and does not preclude EPA from taking any necessary enforcement action at the site. Additionally, any determination made for the purposes of the measures described in this guidance is based on the information available at the time the determination is made, and should change if the site's conditions change or if new or additional information is discovered regarding the contamination or conditions at the site. As such, parties (e.g., land owners or developers) interested in finding out what uses would be protective for a particular property should rely on site-specific cleanup documents and site-specific institutional controls for property-specific information. More reuse-related information for interested parties is available at http://www.epa.gov/superfund/programs/recycle.

[2] SA Sites refer to those sites that are eligible to be placed on the NPL but are not listed. At these SA sites EPA generally acts in accordance with the practices normally followed at sites listed on the NPL and strives for equivalency in the absence of an NPL listing. EPA ensures that settlements covering SA response actions achieve cleanup levels equivalent to those required at NPL sites, that EPA provide the States, Tribes, Federal natural resource trustees, and communities the same opportunity for involvement as that provided at NPL sites, and that EPA's enforcement approach is equivalent to its enforcement approach at NPL sites. For more information, see http://www.epa.gov/compliance/resources/policies/cleanup/superfund/rev-sas-04-trans-mem.pdf.

[3] This includes those non-NPL Federal facilities (such as Base Realignment and Closure (BRAC) or Formerly Utilized Sites Remedial Action Program (FUSRAP) sites) and FUDS where EPA has signed/concurred on a response action (at a minimum, completed a Remedial Investigation/Feasibility Study (RI/FS), removal action, or other major cleanup decision document) or a property transfer.

the "Ready for Anticipated Use" (RAU) measure.[4] This guidance also explains how these two new performance measures relate to previously existing performance measures.

1.2 Overview

1.2.1 History of Cross-Program Revitalization Measures

In 2004, EPA's Office of Superfund Remediation and Technology Innovation (OSRTI) developed its first land revitalization performance measures. These performance measures are described in the 2004 document entitled *"Guidance for Documenting and Reporting the Superfund Revitalization Performance Measures"* (hereinafter referred to as the "2004 Guidance").[5] Two performance measures were developed: "Acres Ready for Reuse" and "Sites Ready for Reuse." These performance measures were designed to report program accomplishments in making sites or portions of sites ready for reuse, and applied to proposed, final, and deleted NPL sites, SA sites, and NTCRA sites. The 2004 Guidance was issued in November 2004.

In May 2006, a new, third performance measure entitled "Sitewide Ready-for-Reuse" (Sitewide RfR) was jointly developed by OSRTI and the Federal Facilities Restoration and Reuse Office (FFRRO).[6] This measure tracks final and deleted construction complete NPL sites that are ready for reuse. The Sitewide RfR Guidance is included in Appendix A.

EPA recognized that there was a need to establish a similar, consistent set of measures that could be applied across all of the Office of Solid Waste and Emergency Response (OSWER) cleanup programs.[7] Accordingly, in October 2006 EPA issued a document entitled *"Interim Guidance for OSWER Cross-Program Revitalization Measures"* (hereinafter referred to as the CPRM Guidance).[8] The CPRM guidance established three indicators and two performance measures:

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[4] It is recommended that OUs be used to document the progress of portions of a site. Acreage should not be reported until appropriate criteria have been met for the entire land area comprising an OU. For the purpose of this guidance, the term "parcels" as used for Federal facility sites is equivalent to the term "OU." At property transfer sites (e.g., BRAC facilities), EPA may evaluate property transfer parcels, instead of OUs, within a property transfer document, such as a Finding of Suitability to Lease (FOSL), Finding of Suitability to Transfer (FOST), and Finding of Suitability for Early Transfer (FOSET). If OUs are not yet defined, or if communicating information in terms of OUs is not applicable, then the number of acres that meet the CPRM criteria for indicators and measures should be documented.

[5] *Guidance for Documenting and Reporting the Superfund Revitalization Performance Measures*, OSWER 9202.1-26, November 5, 2004.

[6] *Guidance for Documenting and Reporting the Superfund Sitewide Ready-for-Reuse Performance Measure*, OSWER 9365.0-36, May 24, 2006. The guidance is located at http://www.epa.gov/superfund/programs/recycle/tools/pdfs/sitewide_a.pdf.

[7] OSWER cleanup programs include Brownfields, Superfund, Resource Conservation and Recovery Act (RCRA) Corrective Action, Underground Storage Tanks (UST), Federal Facilities, and Emergency Response Programs.

[8] The Interim Guidance for OSWER Cross-Program Revitalization Measures is located at http://www.epa.gov/oswer/landrevitalization/docs/cprmguidance-10-20-06covermemo.pdf.

Indicators:	Performance Measures:
• Universe • Status of Use (optional) • Type of Use (optional)	• Acres "Protective for People Under Current Conditions" (PFP) • Acres "Ready for Anticipated Use" (RAU)

The CPRM guidance established the overarching framework for these measures, but directed each of the individual OSWER programs to develop companion guidance outlining program-specific implementation. This guidance addresses the implementation of the three indicators and two performance measures under the Superfund Remedial and Federal Facilities Response Programs within OSWER. In order to be consistent with OSWER's cross-program effort, this guidance renames the previous two measures described in the 2004 Guidance to reflect the language used in the CPRM Guidance. In addition, the 2006 Sitewide Ready-for-Reuse performance measure is now to be called "Sitewide Ready for Anticipated Use" (Sitewide RAU).

1.2.2 Tracking and Reporting these Performance Measures

The cross-program measures described in this guidance do not replace or add to any of the program-specific measures currently in the Agency's Strategic Plan or being used in program-specific Office of Management and Budget (OMB) Program Assessment Rating Tool (PART) evaluations. Furthermore, the Agency is not establishing targets for these performance measures at this time. To avoid the redundancy and confusion of maintaining multiple measures, the Superfund Remedial and Federal Facilities Response Programs will no longer report on acres or sites "Ready for Reuse," but rather will track and report the measures described in this guidance, beginning late in fiscal year 2007. As noted previously, the Sitewide RfR measure will continue to be reported, but under the new name Sitewide RAU. The existing targets for the newly named Sitewide RAU measure remain in place, and this measure will continue to have targets for the foreseeable future.

In implementing the performance measures, EPA will request that Regions report information in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) no later than the 5th working day of October of each year, and that in addition Regions fill out a PFP and RAU Checklist for each site with eligible land area, as measured in acres. This PFP and RAU Checklist is currently under development. The PFP and RAU Checklist will also document information for the two optional indicators, "Status of Use" and "Type of Use," which are described in Section 7 of this guidance. Regions should document the results of these evaluations and report site and acreage information in CERCLIS. The reporting requirements will be described in the Superfund Program Implementation Manual (SPIM). After the initial October reporting in 2007, information for these measures and indicators should be updated quarterly.

1.2.3 New Superfund and Federal Facility Revitalization Performance Measures

This guidance supersedes the 2004 Guidance and establishes the following new indicators and performance measures:

- *Indicators:*
  - Universe Indicator: This indicator is designed to capture the full universe of potential sites and land area, as measured in acres, to be addressed by the CPRM measures. It includes:
    1. Proposed, final, and deleted NPL sites, (including Federal facilities);
    2. SA sites; [9]
    3. NTCRA sites; and
    4. Certain non-NPL Federal facilities and FUDS[10]
  - Status of Use Indicator (voluntary):[11] This indicator captures information about whether a site or any land area therein, as measured in acres, is being used. Sites and acres will be classified as either unused, in continued use, reused, or planned for reuse. Superfund site acreage will be determined by OU while Federal facility site acreage will be determined by OU or property transfer parcel.[12]
  - Type of Use Indicator (voluntary): This indicator describes the specific use at a site or any land area therein, as measured in acres, at the point in time when the Status of Use determination is made. Sites and acres will be classified under one of the following six primary categories: Commercial and Public Service, Green Space, Industrial, Military and Other Federal, Mixed, and Residential. Superfund site acreage will be determined by OU while Federal facility site acreage will be determined by OU or property transfer parcel.

- *Performance Measures:*
  - Protective for People Under Current Conditions (PFP): This new measure is based on the existing Human Exposures Under Control Environmental Indicator and reports sites and land area, as measured in acres, that are protective for people under current conditions. Superfund site acreage will be determined by OU, while Federal facility site acreage will be determined by OU or property transfer parcel.
  - Ready for Anticipated Use (RAU): This new measures replaces "Acres of Land Ready for Reuse" as well as "Sites Ready for Reuse" as defined in the 2004 Guidance. This RAU measure also includes the land area, as measured in acres, at sites that meet the 2006 Sitewide RfR (now renamed "Sitewide RAU") Guidance for continued and anticipated use, as well as any other acres that meet

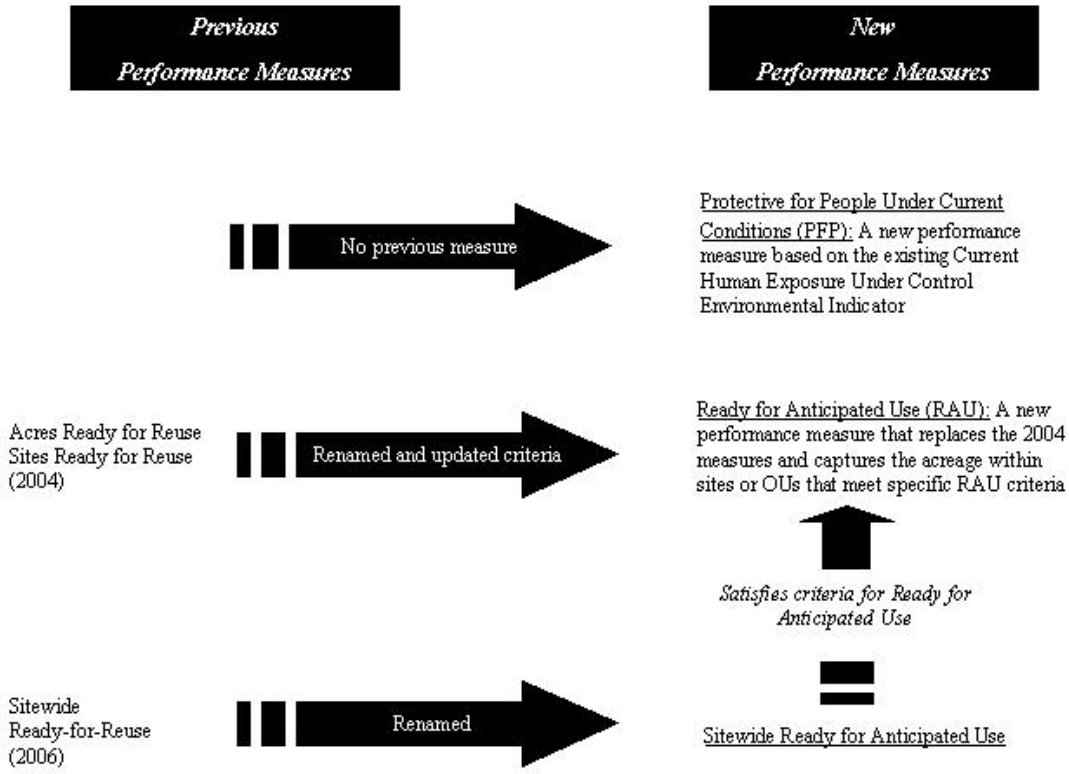
[9] See footnote 2.
[10] See footnote 3.
[11] Although reporting on the Status and Type of Use is currently optional, Remedial Project Managers (RPMs) and Information Management Coordinators (IMCs) are strongly encouraged to collect and enter such data in order to report these indicators.
[12] See footnote 4.

RAU criteria. Superfund site acreage will be determined by OU while Federal facility site acreage will be determined by OU or property transfer parcel.

1.2.4 General Relationship of New Measures to the Previous Measures

Figure 1 and Table 1 show the general relationship of the previous performance measures to the measures established by the CPRM guidance and implemented through this guidance.

Figure 1: Previous and New Land Revitalization Performance Measures



Some key points should be emphasized. First, although the 2004 Ready for Reuse measures and the new RAU measures are very closely related, there are some differences in how these terms are defined. Despite these differences, however, it is expected that most of the acres previously reported using the 2004 Ready for Reuse definition will satisfy the criteria for the RAU measures.[13] Second, the acres associated with the Sitewide RAU will in all cases satisfy the acres and sites RAU criteria. This is because the Sitewide RAU was developed specifically

[13] The 2004 Ready for Reuse measures tracked the number of acres of land at Superfund sites that are ready for reuse and the number of Superfund sites with acres ready for reuse. Acres previously reported using the 2004 Ready for Reuse definition would not satisfy the criteria for the RAU measures if: 1) all required institutional controls are not yet in place; 2) the acreage was reported because it was already in reuse, regardless of whether cleanup goals had been attained; and 3) if the acreage reported does not comprise an OU or property transfer parcel (i.e., a land area smaller than an OU or property transfer parcel).

for construction-complete NPL and deleted NPL sites; the RAU measure applies to a broader universe of sites but is otherwise consistent with the RAU criteria laid out in this CPRM Guidance. Further discussion of the relationship between the previous and new performance measures is provided in Appendix B.

Table 1: Previous and New Land Revitalization Performance Measures

	2004: Ready for Reuse	2006: Sitewide Ready-for-Reuse (now RAU)	2007: CPRM	
			PFP	RAU
Universe	Private and non-Federal sites proposed for or listed on the NPL; SA sites; and NTCRA sites where the removal was completed	Final or deleted construction complete NPL sites	Proposed, final, and deleted NPL sites, (including Federal facilities); SA sites; NTCRA sites; and certain non-NPL Federal facilities and FUDS	Proposed, final, and deleted NPL sites, (including Federal facilities); SA sites; NTCRA sites; and certain non-NPL Federal facilities and FUDS
Unit(s) of Measure	Sites and portions of sites, as measured by acres	Sites	Acres Superfund site acreage determined by OU or property transfer parcel	Acres Superfund site acreage determined by OU or property transfer parcel
Definition	Sites or acres considered ready for reuse if any of the following apply: - The site or a portion of a site already in use; - Superfund response actions were unnecessary for the site or portion of the site as a result of an investigation of the property, and the Agency was not aware of other EPA, State, Tribal, or local government environmental or land use restrictions; - Cleanup goals established for the site or portion of the site have been attained	The number of final and deleted construction complete NPL sites where, for the entire site: - All cleanup goals in the ROD or other remedy decision document(s) have been achieved for media that may affect current and reasonably anticipated future land uses of the site, so that there are no unacceptable risks; and - All institutional or other controls required in the ROD or other remedy decision document(s) have been put in place[14]	At a minimum, all identified human exposure pathways from contamination at the site or individual OUs are under control or possible exposures are below health-based levels for current land and/or ground water use conditions	The RAU performance measure captures the acreage within sites or OUs that are PFP *and* meet the following two additional criteria: - All cleanup goals have been achieved for media that may affect current and reasonably anticipated future land uses (or decision documents confirm uncontaminated acres) for the site or OU such that there is *no unacceptable risk*, and - All institutional or other controls identified as part of the response action to help ensure long-term protection have been put in place[15]

[14] Definition taken from the 2006 Sitewide Ready-for-Reuse Guidance.
[15] Definition taken from pages 8-9 of this guidance.

2. Universe Indicator for Superfund and Federal Facility Sites

2.1 Universe Indicator Definition

The Universe Indicator tracks the number of sites and surface areas actually or potentially contaminated, or previously contaminated. It includes land, wetlands, surface water, and/or sediments where the Superfund or Federal Facilities Programs have had or currently have a documented oversight role for any necessary assessment, response action, and/or property transfer. EPA's involvement may be at the entire facility, such as at property transfers (e.g., BRAC facilities), or only for a portion of the site, such as at active military bases.

The Universe Indicator attempts to capture the overall scope and scale of the Programs' oversight responsibilities for contaminated and potentially contaminated sites. It also serves as a baseline for measuring the Programs' progress in achieving the PFP and RAU performance measures. For the purposes of Superfund and Federal Facilities reporting, the Universe Indicator does not include land areas which are addressed by other EPA programs[16] or where EPA does not have an oversight role.

The reported acreage at a given site for the Universe Indicator may be the same as the entire acreage within the property boundary, such as at Superfund sites and BRAC facilities where EPA will or has concurred on the property transfer of the entire site, or may be different, such as certain large Federal facilities or active military ranges where EPA has not assessed all the acreage within the facility boundary. *Because the Universe Indicator and property boundary acreage both provide useful information about EPA's involvement at sites, both metrics will be reported in CERCLIS.*

The number of sites and acres tracked nationally or regionally by the Universe Indicator will likely change over time due to the listing of additional sites on the NPL, the discovery of new acres or sites subject to CERCLA oversight, changes in data collection protocols or implementation, and increased accuracy as the methodology evolves. The Universe Indicator is based on the areas investigated, rather than the areas remediated.

Useful Definitions for Reporting Acreage

- *Property boundary acreage:* all acreage within the property lines of the site or facility.
- *Site acreage:* the acreage of contaminant investigation or remediation, as delineated in a RI/FS or another action document. Note that the site acreage may include acreage that is outside of the property boundary. Site acreage should equal the acreage reported for the Universe Indicator.
- *Operable unit acreage:* the acreage within the portion of a site delineated in the Record of Decision (ROD) as an operable unit.
- *Property transfer parcel acreage:* the acreage within a portion of a Federal facility delineated in a property transfer document. Property transfer parcels are the unit for reporting Universe, PFP, and RAU acres at Federal facilities where property transfers outside the Federal government (e.g., BRAC facilities).

[16] Other OSWER programs would instead report on those land areas that they are addressing.

However, acres would not be subtracted from the Universe Indicator in situations where they were found through proper investigation to be clean or because they were remediated.

2.2 Determining Whether Acres are Eligible for the Universe Indicator

The Universe Indicator seeks to count the total number of acres and sites that have been investigated at all sites since program inception. In order to be included in the Universe Indicator, the site should be eligible for investigation under CERCLA, or as the result of EPA's involvement at BRAC facilities.

For sites that are proposed for, listed on, or deleted from the NPL, or for SA sites, acres included in the Universe Indicator should be investigated in a manner consistent with the *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA.*[17] Similarly, NTCRA sites should be investigated in a manner consistent with *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA.*[18] Both remedial and NTCRA sites and acres where initial investigations indicate that no unacceptable risks exist, and therefore no further action is required, should be included in the Universe Indicator.

The Universe Indicator and performance measures apply to the following contaminated or potentially contaminated media – land, wetlands, surface water, and/or sediments – provided that media is subject to Superfund and Federal facilities remedial investigation, oversight, and/or response action. However, the acres captured under the Universe Indicator do not include land areas overlying a ground water plume where those land areas are not intended to be assessed consistent with applicable EPA guidance. For example, if a plume extends under a land area and EPA has no intention of investigating these acres of land for contamination unrelated to the plume, then those land acres would not be included in the acreage reported by the Universe measure. By extension, a site with only ground water contamination would not be captured by the Universe Indicator. Note that there may also be exceptions in which sites with areas of surface water, sediments, and/or tidal basins will not automatically be included due to site-specific circumstances. These types of sites will be dealt with on a case-by-case basis.

The Superfund Remedial and Federal Facilities Response Programs are still considering different strategies for tracking revitalization progress at ground water-only sites and OUs through a separate measure. In the future, the Programs may expand the Universe Indicator and performance measures to include surface acres associated with ground water plumes. At this time, however, EPA will continue to use the Migration of Contaminated Ground Water Under Control Environmental Indicator[19] to document whether ground water contamination falls within safe levels, or if not, whether migration of contaminated ground water is stabilized.

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[17] *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (OSWER Directive 9355.3-01). The guidance states that the purpose of the Remedial Investigation is to "collect data to characterize site conditions; determine the nature of the waste; assess risk to human health and the environment; and conduct treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies being considered to support the design of selected remedies." The guidance is located at http://www.epa.gov/superfund/resources/remedy/pdf/540g-89004-s.pdf.

[18] *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA* (OSWER Directive 9360.0-32).

[19] For more information about the Superfund Migration of Contaminated Ground Water Under Control Environmental Indicator, refer to http://www.epa.gov/superfund/accomp/ei/gw.htm.

Non-NPL BRAC sites and other non-NPL Federal facilities or FUDS where EPA has, at a minimum, been involved with the completion of a RI/FS document (or equivalent action), an action further along in the cleanup process, or a property transfer would also be eligible for inclusion in the Universe Indicator. Sites that have received a Preliminary Assessment/Site Inspection would not be included in the Universe, as often EPA may not concur or may defer investigations and remedial actions to other entities. Sites further along in the cleanup process may also be included in the Universe Indicator, such as sites where EPA was not involved in the RI/FS but did sign off on the removal or property transfer action. Uncontaminated parcel determinations may be included in the Universe Indicator once EPA has signed/concurred on a Finding of Suitability to Transfer (FOST), Finding of Suitability to Lease (FOSL), or Finding of Suitability for Early Transfer (FOSET) document. If EPA was, at one time, involved in a site, concurred on a major cleanup document, but then ceased involvement (i.e., the Department of Defense stopped funding EPA's involvement or the site was deferred to another program), then it would still be included in the Universe Indicator, with the understanding that the site or OU and associated acreage may never meet either PFP or RAU, depending on when EPA involvement ended, and that because EPA's involvement ceased, neither the Superfund nor Federal Facilities Programs are responsible for ensuring that the requirements of PFP and RAU are achieved at the site or OU.

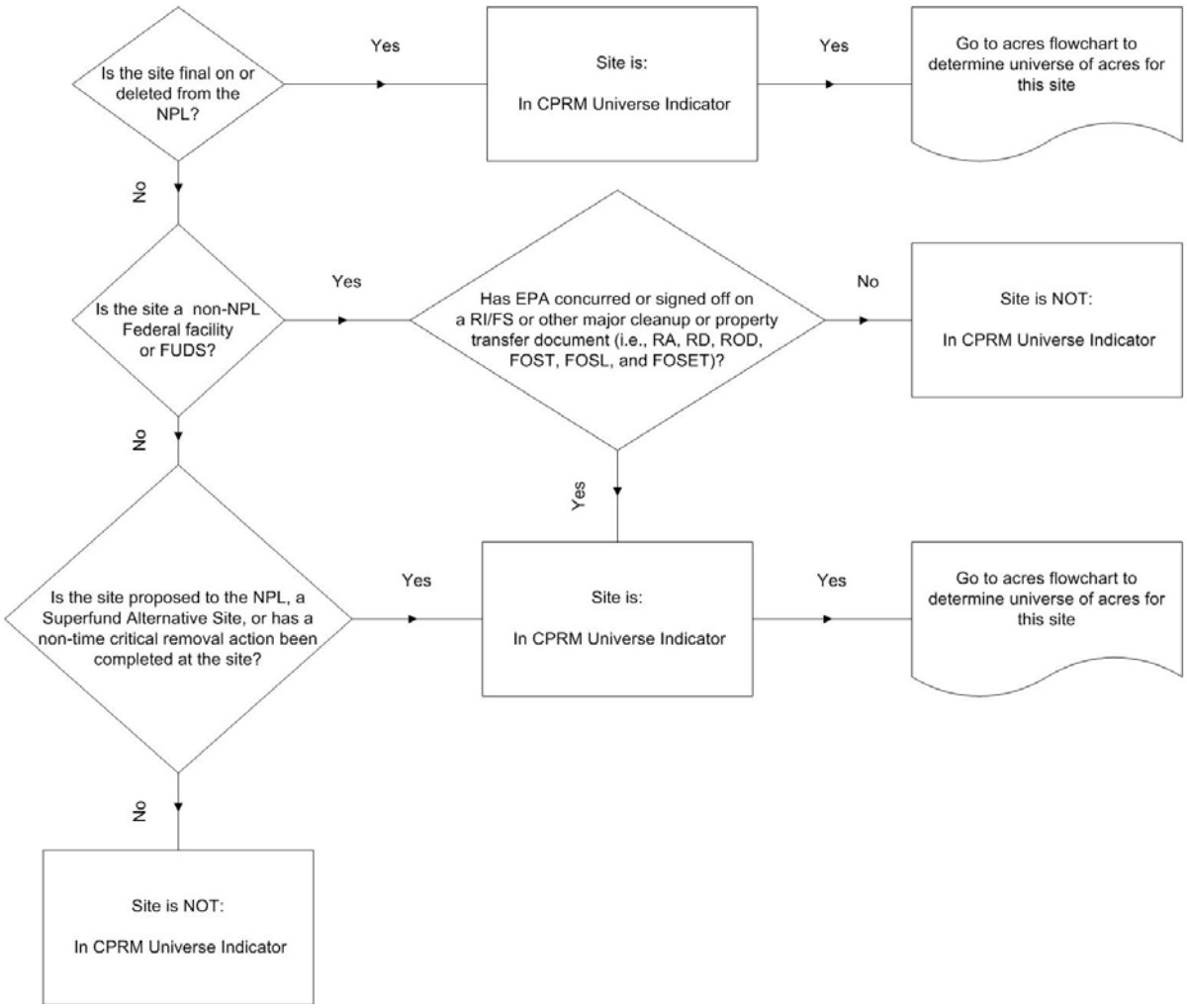
Acreage for the Universe Indicator, as well as the PFP and RAU measures, should be as accurate as possible. (See Section 6 for further information on estimating acreage.) In circumstances in which it is not feasible or practical to obtain acreage data (e.g., at some FUDS), contact Headquarters for assistance on how to proceed.

All acreage counted toward the Universe Indicator should be documented and reported in CERCLIS. Acreage from a portion of a site should be based on designated OUs at the site (except for Federal facilities property transfers, such as BRAC facilities, which should be based on parcel designations, as applicable).

The flow chart in Figure 2 provides a guide for determining whether acres at sites qualify for inclusion in the Universe Indicator.

Figure 2: Site Universe Flow Chart

The following questions will assist in determining if a site is covered under the CPRM measure framework.



2.3 Reporting Property Boundary Acreage

For all sites that are included in the Universe Indicator, Regions are requested to report the total acres within the boundary of the property (or the fenceline of a facility) in addition to reporting the specific acreage that is included in the Universe Indicator. This is because at some point in the future, the Superfund Remedial and Federal Facilities Response Programs may be asked to quantify acreage for those portions of sites where the Superfund Remedial and Federal Facilities Response Programs are not involved. For example, the Superfund or Federal Facilities Programs may not assess the entire site at larger facilities or active military bases where the Programs are only involved in a portion of the site. In addition, the Superfund Remedial and Federal Facilities Response Programs may be involved at part of a site, but may defer another section of that same site to another cleanup program or entity (i.e., a state). For purposes of reporting consistency, those "deferred" acres should not be captured by the Universe Indicator, but should be counted as part of the reported property boundary acreage. For many non-Federal facility Superfund sites and BRAC sites, however, Superfund Remedial and Federal Facilities

Response Programs are typically involved throughout the entire property and the Universe Indicator and property boundary acreage will be the same.

3. Protective for People Under Current Conditions Performance Measure

3.1 PFP Definition

The PFP performance measure reports the number of sites and acres at which there is no complete pathway for human exposures to unacceptable levels of contamination, based on current site conditions. Reporting on a particular site for this measure should be based on an understanding of current conditions, presence and toxicity of contamination, routes of contaminant migration (e.g., ground water, vapor), and routes of exposures to humans (e.g., dermal, inhalation, ingestion).

Achieving the PFP measure means, at a minimum, that all identified human exposure pathways from contamination at the site are under control or possible exposures are below health-based levels for current land and/or ground water use conditions. "Under control" means that adequately protective controls are in place to prevent any unacceptable human exposure under current land and/or ground water use conditions. Achieving the PFP measure does not involve consideration of future use conditions or ecological receptors.

The PFP measure can be achieved through temporary solutions based on current conditions and associated exposures at a given point in time, and does not necessarily require that all cleanup goals be met at a site or OU.

For the purposes of this measure, the entire site or individual OUs at a site can be counted so long as the criteria discussed below are met for those areas. At property transfer sites (e.g., BRAC facilities), EPA may evaluate property transfer parcels, instead of OUs, within a property transfer document, such as a FOSL and FOSET. Such sites should meet PFP, as often the FOSL and FOSET address immediate, not necessarily long-term, property use.

3.2 Determining Whether a Site/OU is PFP

For the purposes of this measure, a site or OU will achieve the PFP performance measure when it can be determined that the entire site or OU meets any one of the three possible designations for the current Human Exposures Under Control Environmental Indicator,[20] which currently apply to NPL sites only.[21] The current Environmental Indicators Guidance is included in Appendix C. The three designations in the existing Human Exposures Under Control Environmental Indicator that ensure acres meet PFP include:

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[20] *Draft Superfund Environmental Indicators Guidance Manual: Long-Term Human Health Revisions*, January 2006. Available at http://www.epa.gov/superfund/accomp/ei/eiguidance.pdf. This guidance document is scheduled to be renamed the Long-Term Human Health Protection Environmental Indicator (LTHHP EI) in 2007. EPA intends to update this guidance when the new LTHHP EI Guidance is available.

[21] The current Human Exposures Under Control Environmental Indicator designations currently apply only to NPL sites; however, for the purposes of determining whether a site or OU achieves the PFP performance measure, the criteria of this Environmental Indicator may be applied on an OU basis to all sites to which this guidance applies.

- Current Human Exposures Under Control;
- Current Human Exposures Controlled and Protective Remedy in Place; or
- Long-Term Human Health Protection Achieved.

Note that an OU or entire site may meet PFP if the ground water is contaminated yet no human exposure pathways exist, and the soil above the plume has been assessed to ensure it meets PFP, or is safe for human exposure. It should also be noted that a site may have several OUs with different designations, some of which have met PFP criteria, some of which have also met RAU criteria, and some of which do not meet either performance measure (i.e., are not protective).

The following guidelines should be observed when making the PFP determination:

- An LTHHP EI evaluation should be made looking at all actions that have been completed and all media across the entire site or OU.
- This evaluation should be made with "reasonable certainty" and should be supported by a major cleanup document (i.e., based on the most current data available for the site). Documents such as risk assessments, Records of Decision (RODs), Action Memoranda, Pollution Reports (POLREPS), Remedial Action Reports, Close-out Reports, and Five-Year Reviews are good sources of data and often provide the information necessary for making an evaluation with reasonable certainty. Evaluations can be revised as new information becomes available.
- This evaluation is intended to be a realistic, risk-based assessment centered on actual land and ground water uses. The exposure scenarios considered in this evaluation should be consistent with risk-based decisions for the site.

<u>At a Glance – Human Exposures Under Control Environmental Indicator:</u>

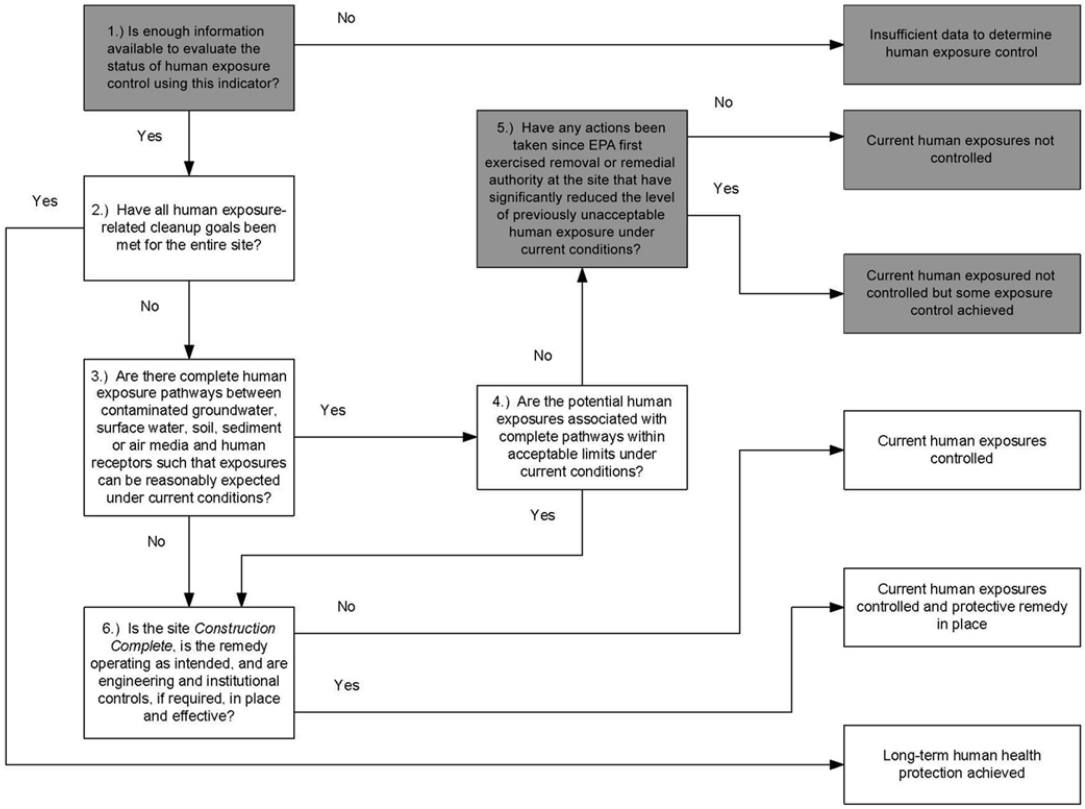
The Human Exposures Under Control Environmental Indicator will become the LTHHP EI, which will remain a site-wide indicator for NPL sites.

The PFP performance measure however, will apply the LTHHP EI criteria on an OU basis, where applicable, at all sites included in the Universe Indicator. Application of the LTHHP EI criteria to OUs and non-NPL sites and will not affect the GPRA reporting for the official site-wide LTHHP EI.

The Environmental Indicators Guidance provides a step-by-step process and worksheet to assist in making an evaluation of the appropriate LTHHP EI category, and therefore PFP determination. The flowchart in Figure 3 (included below) can also assist in decision-making about a site or OU's LTHHP EI status.[22] Only those questions and outcomes depicted by the white boxes on the following flow chart are eligible for inclusion in the PFP measure.

[22] The previous section and following flowchart have been excerpted from page 15-16 of the Environmental Indicators Guidance.

Figure 3: Environmental Indicators Flowchart – How to Make PFP Determinations Using the Long-Term Human Health Protection Environmental Indicator[23]



The determination that an OU achieves the PFP measure can occur at any particular point in time and the OU's reported status should be revised if the site's conditions change or if new or additional information is discovered regarding the contamination or conditions at the site (e.g., contaminant occurrence, migration, toxicity levels for specific contaminants, and exposures). If at the time of the determination or at any other time, EPA becomes aware of other environmental problems that pose unacceptable risk relevant to the site or reuse (including risks addressed under other cleanup or public health authorities) the site should not be reported under the PFP measure. Documentation that OUs achieve the PFP measure should be changed accordingly if, or when, information becomes available that would bring into question whether the OU continues to meet the PFP definition. Those specific acres associated with the site in question should only be re-recorded as meeting the PFP measure if and when the land area once again meets the PFP definition.

The total number of sites with one or more OUs meeting the PFP measure will be determined from information recorded in CERCLIS and routinely reported for management and communication purposes.

[23] If the decision process results in a gray box, then the site or OU is not PFP.

4. Ready for Anticipated Use Performance Measure

4.1 RAU Definition

The RAU performance measure captures the acreage within sites or OUs that are PFP *and* meet the following two additional criteria:

- All cleanup goals have been achieved for media that may affect current and reasonably anticipated future land uses (or decision documents confirm uncontaminated acres) for the site or OU such that there is *no unacceptable risk*, and
- All institutional or other controls identified as part of the response action to help ensure long-term protection have been put in place.

The definition of this measure as it applies to an entire site is consistent with the Sitewide RAU measure. Therefore, all sites and acres counted toward the Sitewide RAU measure will also count toward the RAU measure. In addition, the RAU measure described here may also include individual OUs and a broader universe of sites (i.e., SA, NTCRA, certain non-NPL Federal facilities, FUDS, etc) than was used for the Sitewide RAU measure.

4.2 Determining Whether a Site/OU is RAU

Following are some key considerations in determining whether a site or OU qualifies for inclusion in the RAU measure.

Do all cleanup goals need to be met?

It is not necessary to achieve all cleanup goals, only those that ensure that there are no unacceptable risks affecting current and reasonably anticipated future land uses. Uncontaminated acres that have documentation of an assessment to ensure that no unacceptable risks exist would be counted under RAU.[24] EPA recognizes that sites or OUs can be protective for these identified uses even in situations where long-term remedial goals have not been achieved (e.g., ground water cleanup goals have not been met but ICs or engineering controls are in place to prevent these exposures.)

It should be noted that if cleanup goals for ecological exposure were established in a ROD or other remedy decision document(s),[25] they should also be met for sites and/or OUs to qualify for RAU. The determination that the cleanup goals have been achieved so that there are no unacceptable risks affecting current and reasonably anticipated future land uses should be derived from a major cleanup document (e.g., no further action memorandum, remedial action complete, preliminary close-out report, final close-out report, Five-Year Review, etc.) or property transfer document (e.g., FOST, uncontaminated parcel determinations) and documented in CERCLIS.

[24] To avoid potential double-counting of acres, uncontaminated parcel determinations made at BRAC installations should only be counted as RAU once EPA has signed/concurred on the FOST document.
[25] For non-time-critical removal action sites, this refers to the Engineering Evaluation/Cost Analysis Report.

Which media should be considered?

Any media that may affect current and reasonably anticipated future land uses should be considered when applying the definition of sites/OUs ready for anticipated use. The National Contingency Plan (40 CFR 300.5) defines "on-site" to mean "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for the implementation of a response action." All of these areas should be evaluated before a RAU determination is made. If media such as wetlands, surface water bodies, sediments, and ground water pose an unacceptable risk to current and reasonably anticipated future land use, cleanup goals for these media should be set and met before declaring that the site meets the definition of RAU.

What is meant by having ICs or other controls in place?

In order for a site or OU to qualify under the RAU measure, all controls (engineered as well as institutional) that are part of the justification that the site or OU is ready for anticipated use should be *in place.* Depending on the type of ICs used, the term "in place" could include the enactment of ordinances (e.g., land use or ground water use restrictions) by local government; recording of legal instruments in the chain of title for a property; issuance by a regulatory authority of enforcement tools or permits; agreements between the regulatory authority and the property owners or facility operators; listing of property on a state registry of contaminated sites; recording of deed notices or hazard advisories in local land records; and for active military bases, publication of a base master plan, instructions, orders, and establishment of a dig permit system.

If 1) ICs are in place, but determined not to be protective for the anticipated land use; or 2) sites have IC requirements that have not been implemented but that are listed in documents other than decision documents, then these sites or OUs are NOT ready for anticipated use.

Do we include land areas overlying a ground water plume?

As we discussed in Section 2.2 relating to the Universe Indicator, EPA is not including these land areas unless they have been adequately investigated and found to meet the PFP or RAU definition.

How do we address ground water only sites?

Sites or OUs that have only ground water contamination, where EPA has not assessed any land surface, should NOT be counted in the universe or as PFP or RAU at this time.

What about Federal facilities (both NPL and non-NPL sites) with property transfers?

Where sites will transfer outside the Federal government (e.g., BRAC facilities), EPA will evaluate property transfer parcels instead of OUs. Any acres contained within a document such as a FOST, or a similar property transfer document, should meet the RAU measure, regardless of whether the acreage falls entirely within OU boundaries. Note that EPA should have formally concurred on this action by signing the property transfer document.

Any ICs included in the property transfer document must be in place for acreage to meet RAU. Acreage covered by a FOSL and FOSET will not be considered RAU.

Do sites that have all future use prohibited meet RAU?

Sites or OUs that will not support *any* form of future use should NOT be designated as RAU. This includes sites or OUs with ICs that prohibit all future use. However, sites where human use is prohibited but a ROD designates ecological use as the anticipated use could meet the RAU measure if all applicable criteria are met.

How do we count sites that have been deferred to other programs?

Sites or OUs that have been deferred to other programs, or where it is expected that other programs will perform aspects of cleanup, should NOT be counted as RAU. This includes No Action RODs at sites where the State has taken on the oversight role. However, if EPA investigated the site or OU, determined that no remedial action was necessary, and has documented in a decision document that there are no unacceptable risks affecting current and reasonably anticipated future land uses, then the site or OU may be considered RAU.

Sites or OUs can achieve RAU even in situations where long-term remedial goals have not yet been achieved. For example, a site or OU could qualify for the RAU measure even if a long-term ground water remedy has yet to achieve its cleanup goals, provided that engineered and institutional controls identified as part of the response action are in place to ensure long-term protection.

The flow chart in Figure 4 can help determine whether sites or OUs qualify for the RAU measure.

Figure 4: Ready for Anticipated Use Flow Chart

The determination that an OU achieves the RAU measure can occur at any particular point in time and the OU's reported status should be revised if the site's conditions change or if new or additional information is discovered regarding the contamination or conditions at the site (e.g., contaminant occurrence, migration, toxicity levels for specific contaminants, and exposures). If at the time of the determination, or at any other time, EPA becomes aware of other environmental problems that pose unacceptable risk relevant to the site or reuse, including risks addressed under other cleanup or public health authorities, the site should not be reported under the RAU measure. Documentation that OUs achieve the RAU measure should be changed accordingly if, or when, information becomes available that would bring into question whether the OUs continue to meet the RAU definition. Those specific acres associated with the OU in

question should only be re-recorded as meeting the RAU measure if and when acres once again meet the RAU definition.

The total number of sites with one or more OUs meeting the RAU measure will be determined from information recorded in CERCLIS and routinely reported for management and communication purposes.

5. Documentation and Reporting

5.1 Process for Documentation and Reporting

In order to assist with documentation and reporting of the performance measures, a new PFP and RAU Checklist for documenting all performance measures is being created. While the information will be collected in CERCLIS, Regions should continue documenting the information using the new checklist once available so that copies of the checklist can be included in administrative records.

In October 2006, FFRRO and OSRTI began discussing the need for a redesigned acreage module in CERCLIS. In light of incorporating this new guidance and the new Sitewide RAU (former Sitewide RfR) measure, FFRRO and OSRTI both recognized the need to redesign the acreage module in CERCLIS to more effectively and efficiently capture reuse data.

The goal of this new module is to have one recognizable module where all Superfund and Federal facilities can be entered. Current development is underway and the module is anticipated to go into the production version of CERCLIS in June 2007. Regions are expected to have all reuse data entered into CERCLIS by the end of fiscal year 2007. Additionally, OSRTI will conduct training for the Regions.

Once the requirements for this new module are complete in Spring 2007, FFRRO and OSRTI will finalize the checklist and will create CERCLIS quick reference guides and frequently asked questions to assist the Regions with data entry.

5.2 Avoiding Double-Counting of Acres

Facilities are sometimes regulated by more than one EPA program. Each OSWER program will report the number of acres for the sites and facilities in their universes. Based upon data availability and other program specific factors, each program defines which acres should be collected somewhat differently. OSRTI and FFRRO have been coordinating with other OSWER cleanup programs to determine where there may be overlap. When EPA reports national totals, EPA will adjust the national total to eliminate or minimize, to the extent possible, double counting of acres.

6. Calculations – Estimating Land Area at Sites[26]

There are a number of ways to estimate site land area. Different methods may be used at different sites, depending on the nature of the site and the availability of data. Regions should use the most reliable data available at a site when estimating the land area for measures presented in this guidance. Personnel reporting land area for any of the measures should document and record the value in acres and the source(s) of information.[27]

As the programs gain more experience in implementing the measures, more sophisticated systems to track the data may be developed. Those information systems should also provide a field for source(s) of information. The following is a list describing sources and approaches to developing acreage estimates for the measures described in this guidance.

- *Use Existing Documents:* In many cases, the acreage of a site or OU may be available in existing site documents, such as the ROD, Remedial Design (RD), or property transfer (i.e., FOST, FOSL, or FOSET) documents.

- *Consult the Assessment or Cleanup Contractor:* The contractor conducting the assessment or remediation of the site may have detailed maps of the site and, therefore, may have reliable information on the site's acreage readily available.

- *Work With the Property Owner or Lead Federal Agency (at Federal facilities):* Property owners, or the lead Federal agency, will generally have reliable information on the size of their property. The property owner(s) of a site will often have a copy of a land survey or plat that has been prepared for their property, typically at the time of purchase. The survey or plat will provide the exact coordinates of the property, and will include the total area of the property expressed in either acreage or square feet. This approach will be most effective for sites where the area being investigated encompasses the entire property. In the cases where the documents address only a portion of the property, other methods for obtaining acreage information will likely be warranted.

- *Consult Tax Assessor or Other Local Government Records:* Local governments will likely have records that indicate the acreage of the property(ies) in question. In most cases, these will be located in either the tax assessor or planning office of the local government. The local government may ask for "parcel numbers" in order to provide this information. Parcel numbers are used by local governments to identify the specific properties for taxation and zoning purposes. Generally, a street address will suffice in place of a parcel number. If there is no street address for one or more properties, they may be identified on a tax assessor or zoning map by becoming familiar with major

[26] Modified from *Guidance for Documenting and Reporting the Superfund Revitalization Performance Measures*, September 2004.

[27] The CPRM Guidance notes "EPA currently does not have a data standard that would dictate the needed quality for measuring acres. However, the following three basic elements of the Agency's Measure Data Standard are applicable to acre-based measurements in this guidance: 1) measure numerical value; 2) unit of measurement (such as acres); and 3) measurement qualifiers used to identify issues that could affect the results (e.g., source of acre information)."

landmarks at or near the site. These maps are sometimes available online, although it may be necessary to visit the local government office.

- *Use a Geographical Information System (GIS):* If polygonal data that accurately delineates the boundary of the site is available, the land area may be easily calculated by the use of a GIS. If these data are not available, there are a number of methods that may be used for gathering them (i.e., consult a Regional GIS expert). Also, access to hand-held Global Positioning System (GPS) receivers may enable the acquisition of location coordinates at key points on the perimeter of the property or site. The area may be calculated by entering these coordinates into a GIS.

- *Calculate Using Measurements from Maps:* In those instances where the land area is not readily available, land area can be calculated using scaled maps.

- *Building Footprint:* When recording the land area of a building that has been remediated (as documented through a major cleanup action) or made ready for use outside of the Federal government (as documented in a property transfer, i.e., FOST or FOSL), only the actual plot (or footprint) of the building, in acres, should be recorded.

7. Optional Status and Type of Use Indicators

The following two optional indicators have been introduced to help describe revitalization-related accomplishments in terms of whether and how sites and OUs are being used. Information collected for these indicators can help give context to the performance measure data, describe national trends, focus program resources, and communicate program impacts and benefits. The CERCLIS database will be revised to include data entry for both optional indicators. Regions are requested to provide sources of information, if possible, for the data gathered on the optional indicators.

7.1 Status of Use Indicator[28]

The Status of Use Indicator refers to how the acres[29] of the sites and OUs included in the Universe Indicator are being used at the point in time when the determination is made for the PFP and RAU performance measures. The Status of Use Indicator has the following sub-indicators:

- *Continued Use:* Acres in continued use refer to areas that are being used in the same general manner as they were when the site became subject to the Superfund or Federal Facilities Programs.

[28] The Status of Use Indicator is one of the optional indicators in the CPRM Guidance. The definition, criteria, and implementation were taken directly from the CPRM guidance dated October 20, 2006 and modified to pertain only to the sites covered by this guidance.

[29] While acres are used as the unit of measurement for the Status of Use Indicator, the programs could also count the number of sites in the defined Status of Use categories.

- *Reused:* Acres at a site identified as in reuse refer to a site or OU where a new use, or uses, are occurring such that there has been a change in the type of use (e.g., industrial to commercial), or the property was unused and now supports a specific use. This means that the developed site or OU is actually used for its intended purpose by customers, visitors, employees, residents, or fauna, in the case of ecological reuse.

- *Planned Reuse:* Acres in planned reuse include sites or OUs where a plan for a reuse is in place, but reuse has not yet begun. This could include conceptual plans, a contract with a developer, secured financing, approval by the local government, or the initiation of site redevelopment.[30]

- *Unused:* Acres identified as unused include sites or OUs not being used in any identifiable manner. This could be, for example, because site investigation and cleanup are ongoing, operations have ceased, the owner is in bankruptcy, or cleanup is complete, but the site remains vacant.

The Status of Use Indicator is independent of the status of response action because it recognizes that sites or OUs could be in various stages of use at various stages of cleanup and because use and reuse can change.

7.2 Type of Use Indicator[31]

The Type of Use Indicator describes how acres[32] at sites or OUs included in the Universe Indicator are used at the point in time when the PFP or RAU determination is made. Information on the type of use at a site or OU should be classified under one of the following six primary categories:[33]

Commercial and Public Service

- *Commercial Use:* Commercial use refers to use for retail shops, grocery stores, offices, restaurants, and other businesses.
- *Public Service Use:* Public service use refers use by a local or State government agency or a non-profit group to serve citizens' needs. This can include transportation services

[30] In the CPRM guidance, OSWER acknowledges that the "Planned Reuse" category may be difficult to capture with certainty; nonetheless, OSWER believes it is important to distinguish sites with "in place" plans for reuse as compared to sites categorized as unused.

[31] The Type of Use Indicator is one of the optional indicators in the CPRM Guidance. The definition, criteria, and implementation were taken directly from the CPRM guidance dated October 20, 2006, and modified to pertain only to the sites covered by this guidance.

[32] While acres are used as the unit of measurement for the Type of Use Indicator, the programs could also count the number of sites in the defined Type of Use categories.

[33] With the exception of Military and Other Federal Uses, the bolded primary categories are based on the types of uses currently identified in the Office of Management and Budget (OMB)-approved Brownfield Property Profile Form available at http://www.epa.gov/brownfields/pubs/ppf_without.pdf. The Military and Other Federal Uses category has been included in this guidance since it would address acres that typically would not be addressed by the types of uses associated with Brownfield Grant recipients.

such as rail lines and bus depots, libraries and schools, government offices, public infrastructure such as roads, bridges, utilities, or other services for the general public.

Green Space

- *Agricultural Use:* Agricultural use refers to use for agricultural purposes, such as farmland for growing crops and pasture for livestock. Agricultural use also can encompass other activities, such as orchards, agricultural research and development, and irrigating existing farmland.
- *Recreational Use:* Recreational use refers to use for recreational activities, such as sports facilities, golf courses, ballfields, open space for hiking and picnicking, and other opportunities for indoor or outdoor leisure activities.
- *Ecological Use:* Ecological use refers to areas where proactive measures, including a conservation easement, have been implemented to create, restore, protect, or enhance a habitat for terrestrial and/or aquatic plants and animals, such as wildlife sanctuaries, nature preserves, meadows, and wetlands.

Industrial

- *Industrial Use:* Industrial use refers to traditional light and heavy industrial uses, such as processing and manufacturing products from raw materials, as well as fabrication, assembly, treatment, and packaging of finished products. Examples of industrial uses include factories, power plants, warehouses, waste disposal sites, landfill operations, and salvage yards.

Military or Other Federal

- *Military Use:* Military use refers to use for training, operations, research and development, weapons testing, range activities, logistical support, and/or provision of services to support military or national security purposes.
- *Other Federal Use:* Other Federal use refers to use to support the Federal government in Federal agency operations, training, research, and/or provision of services for purposes other than national security or military.

Mixed

- *Mixed Use:* Mixed use refers to areas at which uses cannot be differentiated on the basis of acres. For example, a condominium with retail shops on the ground floor and residential use on the upper floors would fall into this category. When selecting Mixed Use, the individual types of uses should be identified, if as possible.

Residential

- *Residential Use:* Residential use refers to use for residential purposes, including single-family homes, town homes, apartment complexes and condominiums, and child/elder care facilities.

7.3 Benefits of Optional Indicators

Recording the type and status information for these optional indicators will be valuable both for Regional and Headquarters staff in gaining a more thorough understanding of the extent and type of reuse currently happening at NPL, SA, Federal facilities, and NTCRA sites. Status of use information can help measure the actual reuse of properties and focus program resources on those sites that are unused. Information from these indicators could be particularly beneficial in terms of planning, when combined with information from the other performance measures. The Type of Use Indicator can help identify and promote future revitalization-related partnerships with stakeholder groups that have been key to reuse at other sites. Type of use information can also help the program gain a more thorough understanding of its reuse related accomplishments by adding a layer of detail on the reuse activities currently taking place at the site or OU. Understanding the type and status of use can also help evaluate the effectiveness of ICs that have been put in place to ensure that the site or OU remains protective during reuse.

8. Appendices

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Appendix A: Sitewide Ready-for-Reuse Guidance

OSWER 9365.0 – 36

Attachment A
Guidance for Documenting and Reporting the Superfund Sitewide Ready-for-Reuse Performance Measure

Note: Upon issuance of the Guidance for Documenting and Reporting Performance in Achieving Land Revitalization, the Sitewide Ready-for-Reuse measure is renamed "Sitewide Ready for Anticipated Use" (Sitewide RAU).

I. Purpose

The purpose of this guidance is to assist EPA managers and staff in fulfilling the Agency's GPRA responsibilities for documenting and reporting Superfund accomplishments in making National Priorities List (NPL) sites ready for reuse. It provides information for identifying, documenting and reporting construction complete Superfund NPL sites where the entire land portion of the site is being used, or has been made ready for use in the future, in a protective fashion.

II. Overview

The Office of Superfund Remediation and Technology Innovation (OSRTI), in coordination with the Federal Facilities Restoration and Reuse Office (FFRRO), has developed a new performance measure to report the Superfund program's accomplishments in making land ready for reuse at construction complete sites. This measure is included along with other Superfund measures as part of the Environmental Protection Agency's FY 2006 - 2011 Strategic Plan. All such performance measures have both annual and long-term cumulative targets.

The new Sitewide Ready-for-Reuse Superfund performance measure is:

The number of final and deleted construction complete National Priorities List (NPL) sites where, for the entire site,
(1) All cleanup goals in the Record(s) of Decision or other remedy decision document(s) have been achieved for media that may affect current and reasonably anticipated future land uses of the site, so that there are no unacceptable risks; and
(2) All institutional or other controls required in the Record(s) of Decision or other remedy decision document(s) have been put in place.

The Sitewide Ready-for-Reuse measure was developed to comply with the Agency's responsibility to report long-term outcome-based accomplishments under the Government Performance and Results Act (GPRA). The introduction of this measure also reflects the high priority EPA places on land revitalization as an integral part of the Agency's cleanup mission for

the Superfund program, as well as the priority EPA is now placing on post-construction activities at NPL sites.

Regions will begin documenting this information and reporting on the Sitewide Ready-for-Reuse measure in CERCLIS in FY 2007, as sites are identified in accordance with this guidance.

III. Background

EPA places a high priority on land revitalization as an integral part of its Superfund response program mission. The Agency's policies have increasingly addressed the issue of making Superfund NPL sites protective for current and future users. For example, one of EPA's key responsibilities under CERCLA is to ensure that contaminated property owned by the Federal government is environmentally suitable for transfer or lease. EPA has been involved in making environmental determinations pertaining to site use since the first BRAC legislative action in 1988, and continues to ensure protective use at both operating and closed Federal facilities undergoing CERCLA environmental response actions.[34]

Building on its experience supporting reuse at Superfund sites, in 1999 EPA created the Superfund Redevelopment Initiative[35] to help communities and other stakeholders in their efforts to return Superfund NPL sites to productive use. In April 2003, EPA announced its Land Revitalization Action Agenda,[36] a plan for addressing the nation's contaminated lands to enable their reuse by communities. Building on this framework, in November 2004, the Agency developed the programmatic performance measures described in the Superfund Revitalization Performance Measures guidance,[37] which serve to report the progress of EPA's activities in making Superfund NPL sites ready for their anticipated future use.

In addition, this new Sitewide Ready-for-Reuse measure directly supports the *National Strategy to Manage Post Construction Completion Activities at Superfund Sites*[38] (PCC Strategy) by providing the Program with a way to assess its effectiveness in conducting post-construction completion activities.

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[34] Nothing in this guidance alters or affects the legal requirements related to property transferred by Federal agencies pursuant to CERCLA 120(h), nor does it alter or affect EPA guidance documents related to Federal real property transfer or lease.

35 See EPA's Superfund Redevelopment Initiative (SRI) web site at http://epa.gov/superfund/programs/recycle/index.htm

36 The Land Revitalization Action Agenda at http://www.epa.gov/oswer/LANDREVITALIZATION/agenda_full.htm.

37 See Guidance for Documenting and Reporting the Superfund Revitalization Performance Measures, OSWER 9202.1-26, November 5, 2004

[38] See EPA's PCC Strategy at http://www.epa.gov/superfund/action/postconstruction/pcc_strategy_final.pdf.

IV. Sitewide Ready-for-Reuse Selection Elements

The Sitewide Ready-for-Reuse measure reports sites documented as ready for reuse where for the entire construction complete NPL site:

- *All cleanup goals in the Record(s) of Decision or other remedy decision document(s) have been achieved for media that may affect current and reasonably anticipated future land uses of the site, so that there are no unacceptable risks; and*
- *All institutional or other controls required in the Record(s) of Decision or other remedy decision document(s) have been put in place.*

Controls in Place: In order for a site to be qualified under this measure, all controls (engineered as well as institutional) used as part of the justification for considering that a site is Sitewide Ready-for-Reuse must be in place. Depending on the type of institutional controls used at a site, the term "in place" could include, for example: the enactment of ordinances (*e.g.*, ground water use restrictions), codes, or other regulations by local government; recording of legal instruments in the chain of title for a property; issuance by a regulatory authority of enforcement tools or permits; agreements between the regulatory authority and the property owners or facility operators; listing of property on a state registry of contaminated sites; recording of deed notices or hazard advisories in local land records; and for active military bases, use of base master plan, instructions, orders, and dig permit systems.

Human Exposure Under Control: The Superfund program also reports on another NPL sitewide measure, Human Exposure Under Control. The Human Exposure determination for sites that qualify for the Sitewide Ready-for-Reuse measure should either be:

- "Current Human Exposure Controlled and Protective Remedy in Place"; or
- "Long-Term Human Health Protection Achieved"

Human exposure site determinations that are not one of the two categories above are inconsistent with the requirements that must be met for the Sitewide Ready-for-Reuse measure.

Ecological exposures: If cleanup goals were established in the Record(s) of Decision or other remedy decision document(s) for ecological exposures, they must also be met for the site to be designated Sitewide Ready-for-Reuse.

Determining Which Media Affect Current and Reasonably Anticipated Future Land Uses: Any media that may affect current and reasonably anticipated future land uses should be considered when making the Sitewide Ready-for-Reuse designation. The NCP (40 CFR 300.5) defines 'on-site' to mean "the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for the implementation of a response action." If media such as wetlands, surface water bodies, sediments, and groundwater may pose an unacceptable risk to areas of current and reasonably anticipated future land use, cleanup goals for these media must be set and met before declaring the site to be Sitewide Ready-for-Reuse.

V. Implementation

Beginning in Fiscal Year 2007, Regions will report on the Sitewide Ready-for-Reuse measure. To establish a national baseline, Regions must review site data to determine which sites currently meet the selection elements outlined in this guidance. These sites will form the baseline against which future performance will be measured. Upon establishment of the baseline, annual and long-term targets will be set to evaluate the Agency's performance. EPA will be expected to report on the progress of this measure in achieving those targets externally to the Office of Management and Budget, and to Congress.

Attached to this guidance is a Sitewide Ready-for-Reuse Checklist for documenting and reporting this new measure. The Sitewide Ready-for-Reuse measure is for construction complete Superfund final and deleted NPL sites only. Regions will submit completed Checklists for the Sitewide Ready-for-Reuse measure to Headquarters for approval before the reported site may be counted to meet the GPRA target for this measure.

The new Sitewide Ready-for-Reuse measure will supplement, not replace, the previous reporting measures: "Acres Ready for Reuse" and "Sites with Land Ready for Reuse." The Superfund program will continue to report "Acres Ready for Reuse" and "Sites with Land Ready for Reuse" for the Agency's own internal management purposes. These measures reflect cleanup progress at portions of sites and provide Agency managers with valuable programmatic information. These measures have never had targets, and are not expected to have targets at this time.

The Superfund Revitalization Performance Measure guidance (November 5, 2004) governing "Acres Ready for Reuse" and "Sites with Land Ready for Reuse" will be updated to include Federal facilities and to address the new Sitewide Ready-for-Reuse measure. Today's new Sitewide Ready-for-Reuse guidance supersedes the November 5, 2004 guidance with respect to institutional controls. Therefore, without exception, no "Acres Ready for Reuse," "Sites with Land Ready for Reuse" or "Sitewide Ready-for-Reuse" accomplishments shall be reported where necessary institutional or other controls have not been put in place for that portion of land that is being reported as ready for reuse. This guidance otherwise supplements, but does not change, existing Agency policies and practices for carrying out the investigation and cleanup of sites under CERCLA.

The determination that a site is Sitewide Ready-for-Reuse is based on the information available at the time the determination is made. That determination may revert if site conditions change, or if new or additional information is discovered regarding the contamination at the site. If after a site has been designated as Sitewide Ready-for-Reuse, EPA becomes aware that any of the Ready-for-Reuse requirements are no longer met, then the site will cease to be designated as Sitewide Ready-for-Reuse. The site can be re-designated as Sitewide Ready-for-Reuse only when the requirements outlined in this guidance are met.

If at the time of determination or at any other time, EPA becomes aware of other environmental problems that pose unacceptable risk relevant to site use or reuse, including risks addressed under other cleanup or public health authorities, the site should not be reported under this measure.

It should be noted that there is likely to be a small set of NPL sites that may never be ready for reuse. For example, extremely hazardous site conditions, the pervasiveness of contamination, and even the size of larger sites may preclude a site from achieving the Sitewide Ready-for-Reuse designation. Additionally, there are also those NPL sites in which institutional controls specifically state that no future uses are advisable.

VI. Disclaimer

This guidance is not a regulation itself, nor does it change or substitute for any regulations. Thus, it does not impose legally binding requirements on EPA, States, or the regulated community. This guidance does not confer legal rights or impose legal obligations upon any member of the public. The determination that a site is Sitewide Ready-for-Reuse does not provide any legal rights or legally enforceable commitments regarding EPA's enforcement intentions or any party's potential liability at the site and does not preclude EPA from taking any necessary enforcement action at the site. Although this guidance does not confer legal rights or impose legal obligations upon any member of the public, interested parties are free to raise questions and objections about the substance of this guidance and the appropriateness of the application of this guidance to particular situations.

Superfund Property Reuse Evaluation Checklist for Reporting the Sitewide Ready-for-Reuse GPRA Measure

United States

ENVIRONMENTAL PROTECTION AGENCY

Washington, DC 20460

SUPERFUND PROPERTY REUSE EVALUATION CHECKLIST FOR REPORTING THE SITEWIDE READY-FOR-REUSE GPRA MEASURE

Office of Superfund Remediation & Technology Innovation and Federal Facilities Restoration & Reuse Office

PART A – GENERAL SITE INFORMATION

1. Site Name	2. EPA ID	
3. Site ID	4. RPM	
5. Street Address		
6. City	7. State	8. Zip Code

9. Site Wide Ready-for-Reuse Determination Requirements (all must be met for the entire construction complete site)

9 All cleanup goals in the Record(s) of Decision or other remedy decision document(s) have been achieved for any media that may affect current and reasonably anticipated future land uses, so that there are no unacceptable risks.

9 All institutional or other controls required in the Record(s) of Decision or other remedy decision document(s) have been put in place.

PART B – SIGNATURE (Branch Chief or above should sign)

NOTE: The outcome of this Property Reuse Evaluation does not have any legally binding effect and does not expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits of any party. EPA assumes no responsibility for reuse activities and/or any potential harm that might result from reuse activities. EPA retains any and all rights and authorities it has, including but not limited to legal, equitable, or administrative rights. EPA specifically retains any and all rights and authorities it has to conduct, direct, oversee, and/or require environmental response actions in connection with the site, including but not limited to instances when new or additional information has been discovered regarding the contamination or conditions at the site that indicates that the response and/or the conditions at the site are no longer protective of human health or the environment.

10. Name	11. Title/Organization
12. Signature	13. Date

EPA Form 9100-4 (9-2004)

Appendix B: Relationship of Previous to New Performance Measures

Previous Measures: Acres and Sites Ready-for-Reuse

The 2004 Guidance applied to private and non-Federal sites proposed for or listed on the NPL as well as SA, and non-NPL sites where a non-time-critical removal action had been completed. This guidance offered two measures for reporting on the revitalization of these sites:

- Number of acres of land at Superfund sites that are ready for reuse; and
- Number of Superfund sites with acres ready for reuse.

For each site that is considered to be ready for reuse, EPA estimated the total land area, reported in acres, that either was already in use or that was considered to be ready for reuse. In the 2004 Guidance, a Superfund site was considered ready for reuse if any of the following applied:

- The site or a portion of a site was already being used;
- Superfund response actions were unnecessary for the site or portion of the site as a result of an investigation of the property, and the Agency was not aware of other EPA, State, Tribal, or local government environmental or land use restrictions;
- Cleanup goals established for the site or portion of the site have been attained (i.e., engineering controls and ICs for the land component have been implemented and are operating as intended).

<u>At a Glance –</u>
<u>2004 Acres and Sites RfR:</u>

- Two performance measures: sites and acres ready for reuse
- Tracked acres ready for residential versus non-residential use
- Broad universe
- ICs *should* be implemented
- For land only
- No targets established
- Superceded by this guidance

Included in these performance measures were the acres of land in which the remedial investigation led to the conclusion that a portion of the land was not contaminated or where no further response actions were planned.

These measures were documented with a Property Reuse Evaluation (PRE), usually conducted in conjunction with the creation of another site document (e.g. ROD), Preliminary Close Out Report, or Notice of Intent to Delete). In this PRE, site personnel had to determine whether any sites that had land ready for reuse were ready for residential or non-residential reuse and also the acres of land that were ready for reuse in each category.

Previous Measure: Sitewide Ready-for-Reuse (now Sitewide RAU)

The Sitewide RfR measure was presented in the 2006 Sitewide RfR Guidance. This measure counts the number of final and deleted construction complete NPL sites where, for the entire site:

- All cleanup goals in the ROD or other remedy decision document(s) have been achieved for media that may affect current and reasonably anticipated future land uses of the site, so that there are no unacceptable risks; and

- All institutional or other controls required in the ROD or other remedy decision document(s) have been put in place.

These risks include human receptors and may include ecological receptors, if any ecological cleanup goals have been specified in remedy decision documents.

To be eligible for the Sitewide RfR measure, the site must meet one of the two most stringent classifications for the current Human Exposure Under Control Environmental Indicator: "Current Human Exposure Controlled and Protective Remedy in Place" or "Long-Term Human Health Protection (LTHHP) Achieved."

At a Glance - Sitewide RfR:

- Now renamed Sitewide RAU
- One performance measure for sites only
- NPL sites only
- ICs must be implemented
- Must meet specific cleanup goals and stringent EI status
- For all media affecting current and future use
- Annual targets set

This measure differed from the 2004 RfR measures in a variety of ways. The Sitewide RfR measure applied only to final and deleted construction complete NPL sites (including Federal facilities), counted sites instead of acres, required ICs to be in place, did not require the distinction between residential and non-residential reuse, required that the site meet specific environmental indicator classifications, and applied to all types of media rather than only land/soils. This is also the only measure among all the measures discussed in this guidance for which the Agency has set targets. Supporting documentation for this measure was recorded in a Sitewide RfR PRE checklist, which will be replaced by the new PRP and RAU Checklist.

EPA will continue to track the Sitewide RfR measure, but will rename it the Sitewide RAU measure to ensure its consistency with the new cross-program measures. EPA will also use the PFP and RAU Checklist to document all Superfund revitalization performance measures, including the Sitewide RAU. Other than renaming this measure and making associated changes to the checklist, nothing will change in the 2006 *Guidance for Documenting and Reporting the Sitewide Ready-for-Reuse Performance Measure*. The Sitewide RAU measure will be a subset of the new RAU measure. All sites counted toward the Sitewide RAU measure will also count toward the RAU measure. RAU will, however, be more comprehensive as it will also include acres from OUs in addition to entire sites and will also apply to a broader universe of sites (i.e., SA, NTCRA, non-NPL Federal facilities, FUDS, etc).

Table 1 below, copied from page 10 of this guidance, shows the general relationship of the previous performance measures to the measures established by the CPRM guidance and implemented through this guidance.

Table 1: Previous and New Land Revitalization Performance Measures

	2004: Ready for Reuse	2006: Sitewide Ready-for-Reuse (now RAU)	2007: CPRM	
			PFP	**RAU**
Universe	Private and non-Federal sites proposed for or listed on the NPL; SA sites; and NTCRA sites where the removal was completed	Final or deleted construction complete NPL sites	Proposed, final, and deleted NPL sites, (including Federal facilities); SA sites; NTCRA sites; and certain non-NPL Federal facilities and FUDS	Proposed, final, and deleted NPL sites, (including Federal facilities); SA sites; NTCRA sites; and certain non-NPL Federal facilities and FUDS
Unit(s) of Measure	Sites and portions of sites, as measured by acres	Sites	Acres Superfund site acreage determined by OU or property transfer parcel	Acres Superfund site acreage determined by OU or property transfer parcel
Definition	Sites or acres considered ready for reuse if any of the following apply: - The site or a portion of a site already in use; - Superfund response actions were unnecessary for the site or portion of the site as a result of an investigation of the property, and the Agency was not aware of other EPA, State, Tribal, or local government environmental or land use restrictions; - Cleanup goals established for the site or portion of the site have been attained	The number of final and deleted construction complete NPL sites where, for the entire site: - All cleanup goals in the ROD or other remedy decision document(s) have been achieved for media that may affect current and reasonably anticipated future land uses of the site, so that there are no unacceptable risks; and - All institutional or other controls required in the ROD or other remedy decision document(s) have been put in place[39]	At a minimum, all identified human exposure pathways from contamination at the site or individual OUs are under control or possible exposures are below health-based levels for current land and/or ground water use conditions	The RAU performance measure captures the acreage within sites or OUs that are PFP *and* meet the following two additional criteria: - All cleanup goals have been achieved for media that may affect current and reasonably anticipated future land uses (or decision documents confirm uncontaminated acres) for the site or OU such that there is *no unacceptable risk*, and - All institutional or other controls identified as part of the response action to help ensure long-term protection have been put in place[40]

[39] Definition taken from the 2006 Sitewide Ready-for-Reuse Guidance.
[40] Definition taken from pages 8-9 of this guidance.

Appendix C: Environmental Indicators Guidance

5.0 LONG-TERM HUMAN HEALTH PROTECTION EI

The LTHHP EI is designed to document the progress achieved towards providing long-term human health protection by measuring the incremental progress achieved in controlling unacceptable human exposures at a site.

"Unacceptable human exposures" for purposes of this policy are associated with complete human exposure pathways that present an "unacceptable risk"–pathways by which an individual could reasonably be expected to be exposed to a hazardous substance, pollutant, or contaminant at levels that could result in injury, disease, or death. Unacceptable human exposures can be controlled by:

• Reducing the level of contamination associated with complete exposure pathways to the point where the exposure is no longer "unacceptable;" and
• Controlling or eliminating contaminant migration to human receptors, preventing human receptors from contacting contaminants in-place, or controlling human receptor activity patterns (e.g., by reducing the potential frequency or duration of exposure).

The site progress categories that describe the level of incremental human heath protection achieved at a site include:

• Insufficient data to determine human exposure control status;
• Current human exposures not controlled;
• Current human exposures not controlled but some human exposure control achieved;
• Current human exposures controlled;
• Current human exposures controlled and protective remedy in place; and
• Long-term human health protection achieved.

The first four categories describe the status of human exposure control and should provide a measure of EPA's progress in controlling human exposure under current land and ground water use conditions. Categories five and six may apply to sites where current human exposures are under control and track the progress in achieving more permanent, long-term control and protection at these sites.

Under category six, long-term human health protection generally is achieved when all current and reasonably anticipated future human exposures have been addressed using treatment technologies, engineering controls, and/or institutional controls, and human exposure-related cleanup goals have been met for the entire site. The title of this last category recognizes that once all human exposure-related cleanup goals have been met, the Agency generally has accomplished more than "human exposure control." Superfund remedies that do not incorporate engineering or institutional controls typically "eliminate," rather than "control," human exposures. The term "long-term human health protection" generally describes the condition achieved when all human exposure-related cleanup goals have been met and encompasses the broad range of Superfund remedies.

Table 5-1 below provides a recommended description of each progress category and the site types to which each category may apply. This indicator should be used to track progress at Final

and Deleted NPL sites, and data can first be reported when the site is proposed to be listed on the NPL.

Table 5-1 – Description of Progress Categories Long-Term Human Health Protection Superfund EI **Progress Category Description Applicable Site Types**

Table 5-1 – Description of Progress Categories Long-Term Human Health Protection Superfund EI		
Progress Category	**Description**	**Applicable Site Types**
Insufficient data to determine human exposure control status	Sites usually are assigned to this category when studies have not been initiated or studies have been initiated but have not yet generated the information necessary to make an evaluation for this indicator - *i.e.*, do not provide enough information to determine whether at least some human exposure control has been achieved.	This category would apply primarily to sites that are in the initial phases of remedial investigation.
Current human exposures not controlled	Sites usually are assigned to this category when studies have indicated that there are complete human exposure pathways that present an unacceptable risk, and actions have yet to be taken since EPA first exercised authority at the site to control at least some unacceptable human exposures.	This category would apply primarily to pre-ROD sites where there are no immediate threats requiring a removal action.
Current human exposures not controlled but some human exposure control achieved	Sites usually are assigned to this category when some action has been taken at the site to control at least some unacceptable human exposures (current conditions) that existed at the time that EPA first exercised removal or remedial authority at the site, but the action or actions have not been enough to achieve site-wide human exposure control under current conditions.	Sites in this category could include sites at which removal or remedial actions have been taken that eliminate one or more but not all exposure pathways. This could also include sites at which actions have reduced contamination in one or more but not all media such that some but not all exposures have been reduced to within acceptable limits under current conditions. This could also include sites with multiple OUs where human exposure control has been achieved at one but not all OUs.
Progress Category	**Description**	**Applicable Site Types**
Current human exposures controlled	Sites usually are assigned to this category when human exposures are under control for current conditions, but where additional physical construction is required, system shake-down is required, and/or ICs need to be put in place and/or modified to address long-	Sites in this category could include those sites where human exposures are under control for current conditions but the sites have yet to attain *Construction Completion*status. It could also include *Construction Completion*

	term human health exposures.	sites where cleanup levels have yet to be met, treatment systems are undergoing shake-down to demonstrate that they are operating as intended.
Current human exposures controlled and protective remedy in place	Sites usually are assigned to this category when human exposures are under control for current conditions, all physical construction is complete, systems are operating as intended, and ICs are in place and effective, but one or more of the human exposure-related cleanup goals for the site have yet to be met.	This could include *Construction Completion*sites where long-term remedial actions (LTRAs) or O&M activities (only) are underway to achieve cleanup levels and all ICs required to prevent unacceptable human exposures are in place. In addition to LTRAs, this could include *Construction Completion* sites requiring O&M after the LTRA period, involving a ground water or surface water remedy with the primary purpose to provide drinking water supply, or involving in-situ SVE or bioremediation where cleanup levels have yet to be met.
Long-term human health protection achieved	Sites usually are assigned to this category when all human exposure-related cleanup goals defined for the site (including implementation of effective engineering and institutional controls) have been met.	This could include *Construction Completion*sites that do not involve long-term ground water or surface water restoration remedies, sites that have attained *Site Completion*status, and *Deleted* NPL sites, including ground water and surface water restoration remedies that have achieved cleanup levels.

5.1 EVALUATING THE LONG-TERM HUMAN HEALTH PROTECTION

The following guidelines should be observed when making the LTHHP evaluation:

• The evaluation should be made on a site-wide basis looking at all actions that have been completed and all media across the entire site.

• The evaluation should be made with "reasonable certainty" (*i.e.*, based on the most current data for the site). Documents such as risk assessments, RODs, Action Memoranda, POLREPS, RA Reports, Close-out Reports, and Five-year Reviews are good sources of data and often provide the information necessary for making an evaluation with reasonable certainty. The evaluation can be revised as new information becomes available.

• The evaluation is intended to be a realistic, risk-based evaluation based on actual and reasonably anticipated land and ground water use. The exposure scenarios considered in this evaluation should be consistent with risk-based decisions for the site.

Use the recommended step-by-step process and worksheet on the following pages to make an evaluation of the appropriate LTHHP site progress category. The worksheet was developed in cooperation with representatives from all ten Regions, and was designed to assist project managers in making the most accurate LTHHP evaluation possible.

Figure 5-1 – Flowchart for Determining LTHHP Classification

Recommended steps for completing the worksheet and selecting/entering responses into WasteLAN are as follows.

(Step 1) Is enough information available to evaluate the status of human exposure control?
- If no, site should be assigned category of "Insufficient data to determine human exposure control status."
- If yes, proceed to Step 2.

Tips for completing rationale:

- The purpose of this question generally is to identify those sites for which information is insufficient to make a evaluation for this indicator. If unable to answer enough questions to make a evaluation other than "insufficient information," this question would be answered "no."
- Note that if you can document that some actions have been taken since EPA first exercised removal or remedial authority at the site that have controlled a significant level of previously unacceptable human exposure, regardless of whether you have evaluated all exposure pathways, you may be able to document "some exposure control achieved" (see Step 5). If this is the case answer "yes" for this question.
- Review and consider information that is pertinent to the evaluation of human exposure. Consider all available sources, even if you decide to base the indicator evaluation on one source or a subset of sources.

(Step 2) Have all human exposure-related cleanup goals been met for the entire site?
- If no, proceed to Step 3.
- If yes, site should be assigned a category of "Long-term human health protection achieved."

Tips for completing rationale:

- The purpose of this question is to identify those sites where all human exposure-related cleanup goals at all operable units (OUs) for the site have been accomplished and long-term human health protection has been achieved. This would include attainment of contaminant-specific cleanup levels and implementation of engineering and institutional controls that are functioning as intended.
- Regions should review the ROD(s) to determine the cleanup goals established for a site. Cleanup goals are designed to provide a general description of what the cleanup will accomplish, form the basis for design of remedies that will be protective of human health and the environment, and can include (but are not limited to) contaminant-specific numeric cleanup levels.

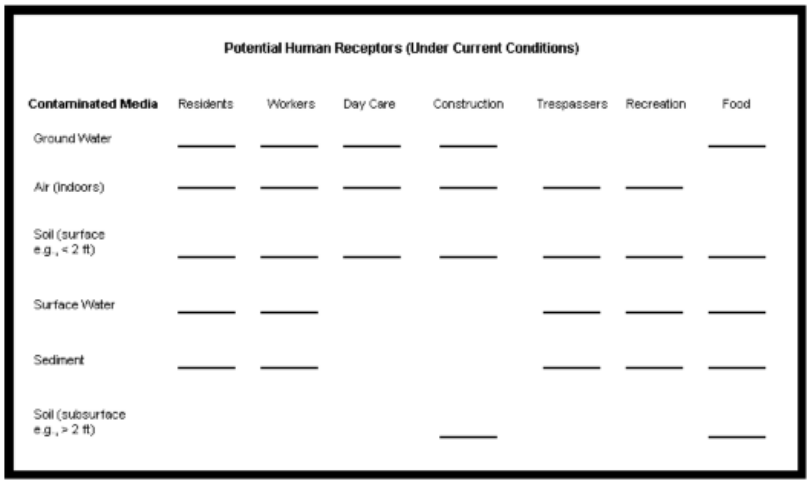
- Long-term human health protection can be achieved even if cleanup goals that are not related to human exposure (i.e., cleanup goals focused solely on ecological risks) have yet to be achieved. - Refer to Close-Out Report, if available, for documentation of whether the remedial action (RA) achieved the cleanup goals to reduce human health risks from the site.

(Step 3) Are there complete human exposure pathways between contaminated ground water, soil, surface water, sediment, or air media and human receptors such that exposures can be reasonably expected under current conditions?
- If no, proceed ahead to Step 6.
- If yes, proceed to Step 4.

Tips for completing rationale:

- The purpose of this question generally is to identify whether there are any complete human exposure pathways between human receptors and "contaminated" media under current land and ground water use conditions.
- Media should be considered "contaminated" for this EI if they are known or reasonably suspected to be contaminated above appropriately protective human health risk-based levels from known contaminants. Appropriate human health risk-based levels would include ARARs and/or risk-based levels documented in the ROD.
- All contaminants of potential concern present at the site above human health risk-based screening levels should be considered for sites without a ROD. For sites with a ROD, Regions should consider contaminants of concern identified in the risk assessment.
- Regions should use the table below and modify as needed to identify potential human exposure pathways. Regions should consider indirect and direct exposure pathways, including indoor air contaminated via vapor intrusion and exposure to contaminated food (e.g., fish, shellfish, dairy, edible plants).
- Regions should consider the exposure scenarios being evaluated for risk management decisions for the site. Note that some exposure pathways identified as complete in the baseline risk assessment may be identified as incomplete in this EI evaluation if the pathway was eliminated under current conditions using institutional or engineering controls. - Regions should consider not only the presence of controls intended to eliminate exposure potential but also their effectiveness. In cases where there is evidence that a control has been violated, e.g., if a fence has been cut, make the determination on a site specific basis. Consider the toxicity of the contamination, frequency, and duration of exposure to decide whether exposure is likely to occur at unacceptable levels. Anecdotal evidence such as a cut fence would not result in a determination of not under control unless conditions are such that exposure at unacceptable levels is reasonably expected to occur.
- The ground water exposure pathway generally is considered complete if an uncontained contaminated ground water plume is migrating toward an existing drinking water supply and contaminant concentrations are expected to reach unacceptable levels within a year in the absence of response actions.
- If a potential pathway is not complete, Regions should not consider the pathway in Step 4.

Sample Exposure Pathway Evaluation Table



	Potential Human Receptors (Under Current Conditions)						
Contaminated Media	Residents	Workers	Day Care	Construction	Trespassers	Recreation	Food
Ground Water	___	___	___	___			___
Air (indoors)	___	___	___	___	___	___	
Soil (surface e.g., < 2 ft)	___	___	___	___	___	___	___
Surface Water	___	___			___	___	___
Sediment	___	___			___	___	___
Soil (subsurface e.g., > 2 ft)				___			___

Note: In order to focus the evaluation on the most probable combinations, some potential "Contaminated" Media - Human Receptor combinations (pathways) do not have spaces for check marks. While these combinations are not likely in most situations, they may be appropriate in some settings and should be added as necessary.

(Step 4) Are the potential human exposures associated with complete pathways within acceptable limits under current conditions?
- If no, proceed to Step 5.
- If yes, proceed ahead to Step 6.

Tips for completing rationale:

- The purpose of this question generally is to identify whether the complete exposure pathways identified in Step 3 could result in unacceptable human exposures under current conditions.
- For purposes of this policy, the definition of "acceptable limits," risk, exposure assumptions, etc., should be the same as those being used to make risk management decisions for the site. Examples of "acceptable limits" include the cancer risk range and HI≤1.
- A positive evaluation could be made for this step if the frequency and/or duration of exposure associated with complete pathways is such that the risk is acceptable (e.g., for a utility worker) and the cleanup goals that have yet to be met (Step 2) address reasonably anticipated future exposures.
- Information regarding current exposures should be derived from risk assessments and/or RODs. Note that if the exposures driving the remedy are based on future land or ground water use only, and future use conditions are different than current, it may be necessary to review the risk assessment (not just the ROD) to obtain data on current risks.

(Step 5) Have any actions been taken since EPA first exercised removal or remedial authority at the site that have significantly reduced the level of previously unacceptable human exposure under current conditions?
- If no, site should be assigned a category of "Current human exposures not controlled."

- If yes, site should be assigned a category of "Current human exposures not controlled but some exposure control achieved."

Tips for completing rationale:

- The purpose of this question generally is to identify those sites with currently unacceptable human exposures but where some action has been taken to significantly reduce these exposures.
- The threshold for a "yes" response generally should be that actions have: 1) eliminated at least one human exposure pathway (current conditions) that presented unacceptable risk; 2) reduced contamination in one or more media such that the risk associated with at least one exposure scenario (current conditions) has been reduced from unacceptable to acceptable levels; or 3) achieved human exposure control (current conditions) in at least one of multiple OUs.
- The starting point for considering "actions" that have been taken to control current human exposures should be the date when EPA first exercised removal or remedial authority at the site. When answering this question, Regions should consider actions taken by EPA or its contractors, other Federal agencies, state agencies, or PRPs after this date.

(Step 6) Is the site Construction Complete, is the remedy operating as intended, and are engineering and institutional controls, if required, in place and effective?
- If no, site should be assigned a category of "Current human exposures controlled."
- If yes, site should be assigned a category of "Current human exposures controlled and protective remedy in place."

Tips for completing rationale:

- The purpose of this question generally is to further categorize sites where current human exposures are under control but long-term human health protection has yet to be attained.
- This step should be used to distinguish between sites where current human exposures are controlled and a "protective remedy" is or is not in place. For the purposes of this EI, sites that are Construction Complete should also be "operating as intended" (an O&F determination pursuant to the NCP be made for ground water or surface water restoration remedies) and ICs, where required, should be in place in order to answer "yes" to this question.
- Sites with a "protective remedy in place" typically would include Construction Completion sites where long-term remedial actions (LTRAs) or O&M activities are underway to achieve cleanup levels and ICs to prevent unacceptable human exposures are in place. In addition to LTRAs, this could include Construction Completion sites requiring O&M after the LTRA period, involving a ground water or surface water remedy with the primary purpose to provide drinking water supply, or involving in-situ SVE or bioremediation where cleanup levels have yet to be met.

5.2 Information Update and Reporting Requirements

Enter LTHHP EI data in WasteLAN after a site is first listed as Final on the NPL (data can first be entered when the site is Proposed), and update the LTHHP EI as soon as a change in the evaluation is warranted. At a minimum, data updates should be done by the 5th working day in

October of each year. To implement the LTHHP indicator, sites for which an HE EI evaluation has been documented were placed in the following LTHHP EI categories, pending Regional updates:

Table 5-2
Sample Initial Data Migration from HE EI to LTHHP EI

Human Exposure Under Control Status	Initial LTHHP Categorization
Insufficient data	Insufficient data to determine human exposure control status
Human exposure not under control ("NO")	Current human exposures not controlled
Human exposure under control ("YES")	Current human exposures controlled

Some sites for which a "NO" evaluation has been made for the HE EI may meet the criteria for the LTHHP category "current human exposures not controlled but some human exposure control achieved." Also, some sites for which a "YES"evaluation has been made for the HE EI may meet the criteria for "current human exposures controlled and protective remedy in place" or "long-term human health protection achieved." Regions are encouraged to update the default HE-to-LTHHP data migration categories.

Update LTHHP evaluations according to the following guidelines:

Changes in EI Status
Update WasteLAN within 30 days of knowing that the LTHHP status has changed.

No Change in EI Status
If there is no change in the status of the LTHHP, Regions should update the "Last Review Date" in WasteLAN on the LTHHP tab in the Environmental Indicators module.

New Listings on the NPL
For sites that are placed on the NPL update WasteLAN within one year of NPL site listing as Final.

Data entry for WasteLAN is discussed in more detail in Appendix B.

5.3 FREQUENTLY ASKED QUESTIONS - LONG-TERM HUMAN HEALTH PROTECTION ACHIEVED

Step 1: Is enough information available to evaluate the status of human exposure control using this indicator?		
Question		**Answer**
1-1	What are the best sources of information for me to consider for this EI evaluation?	Documents such as RI/FS reports, RODs, Action Memoranda, POLREPS, RA Reports, Close Out Reports, Five-Year Reviews, etc. are good sources of information.
1-2	There may be several different sources of information (*e.g.*, State, EPA, PRP). Do I	You should be familiar with that information that is: 1) pertinent to evaluation of human exposure; and 2)

	need to be familiar with all of this information to answer this question?	available to you. If the information from other sources is both pertinent and available to you, consider the contents of this information when making this evaluation.
1-3	What if a PRP has drawn different conclusions than EPA regarding the status of human exposures associated with the site? Do I need to consider the PRP's data?	Yes. However, you can decide what weight to place on the PRP's data when determining whether it will be useful for identifying contaminated media and evaluating human exposures for this EI.
1-4	What if I am aware of information that another Agency or a PRP has collected but cannot obtain a copy of it?	If the information is not available for your review, you should not consider this information in evaluating the sufficiency of available information to respond to this EI.
1-5	We have yet to start the RI, and there is little information available regarding exposure pathways. How should I answer this question?	If data are unavailable or insufficient to make the LTHHP EI evaluation, answer "no" and select "Insufficient data to determine human exposure control status" in WasteLAN.

Step 2: Have all human exposure-related cleanup goals been met for the entire site		
Question		**Answer**
2-1	Where can I find the information to answer this question?	RODs generally outline the cleanup goals established for a site. Documents such as POLREPS, RA Reports, Close Out Reports, Five-Year Reviews, etc., are good sources of information to determine whether cleanup goals have been met at a site.
2-2	Cleanup goals have been met for the contaminated medium of primary concern (*e.g.*, ground water). Can I answer "yes" to this question (*i.e.*, cleanup goals have been met)?	If this is the only medium to be addressed for the site, generally answer "yes." This EI reflects a site-wide evaluation. If cleanup goals have been or will be established for other media, generally answer "no."
2-3	Activities to date have focused on the most significant OU and have achieved the cleanup goals established for this OU. There is a possibility that further actions will be required to address human health risks associated with another OU. How should I consider the possibility of future actions when answering this question?	In the absence of remedy evaluation and selection for all possible OUs, you should use your best judgment. If there is a reasonable possibility that another ROD addressing human health risks will be developed for the site, you should answer "no" and proceed through the remaining steps to determine whether some or all current human exposures are under control for the site.
2-4	The only cleanup goals that have yet to be met for the site address ecological risks. How should I answer his question?	If all human exposure-related cleanup goals have been met, answer "yes." This EI is designed to measure progress in attaining long-term human health protection through human exposure control. It does not measure progress in addressing ecological risks.
2-5	If a site is *Construction Complete*, can I assume that the answer to this question is	No. *Construction Completion*status can be achieved at some sites where all cleanup goals have

	"yes" (and long-term human health protection has been achieved)?	yet to be met. This may include sites where long-term ground water or surface water restoration remedies are in place and operating, but cleanup levels have yet to be achieved.
2-6	If a site has achieved the *Site Completion* milestone, can I assume that the answer to this question is "yes" (and long-term human health protection has been achieved)?	Yes. *Site Completion*status generally signifies that all cleanup goals specified in all RODs have been met, the site is protective of human health (and the environment), and the only remaining activities, if any, consist of O&M by the state, Federal facility, or responsible parties.

Step 3: Are there complete human exposure pathways between contaminated ground water, soil, surface water, sediment, or air media and human receptors such that exposures can be reasonably expected under current conditions?		
Question		**Answer**
3-1	Where can I find the information to answer this question?	Documents such as RI/FS reports, RODs, Action Memoranda, POLREPS, Close Out Reports, Five-Year Reviews, etc., are good sources of information.
3-2	Do I need to consider all media at the site when answering this question?	Generally you should consider those media that are known or reasonably suspected to be contaminated above appropriately protective risk-based levels. Appropriate human health risk-based levels include ARARs and/or risk-based levels documented in the ROD. Generally you should include indoor air contaminated via vapor intrusion and food chain organisms, such as fish, shellfish, and other edible plants and animals, as possible contaminated "media" when making this evaluation.
3-3	What contaminants should I consider when identifying whether a medium is "contaminated?"	For pre-ROD sites, Generally you should consider all contaminants of potential concern present at the site above risk-based screening levels. For sites with a ROD, generally you should consider the contaminants of concern identified in the Risk Assessment.
3-4	Does a single "hit" of contamination mean that I should consider a medium "contaminated," or should I use the average, Upper Confidence Limit (UCL), or something else to identify "contaminated" media for this question?	Generally you should use the approach being used for risk-based decisions at the site. If you are in the early stages of the investigation, with limited data, a single hit may be enough to consider a medium "contaminated" if multiple lines of evidence corroborate this conclusion. If you are at a later stage and the UCL is being used as the exposure point concentration, generally you should use this to identify "contaminated" media.
3-5	How do I answer this question if the only complete exposure pathways exist for media in which none of the contaminants	Generally you should answer "no." Only those media identified as "contaminated" above appropriately protective risk-based levels should be

	exist above appropriately protective risk-based levels?	considered in this step.

Step 3: Are there complete human exposure pathways between contaminated ground water, soil, surface water, sediment, or air media and human receptors such that exposures can be reasonably expected under current conditions?		
3-6	Actions have been taken to eliminate exposure to the contaminated medium of primary concern (*e.g.*, ground water) based on current conditions. Should I answer "no" to this question (*i.e.*, human exposures are not reasonably expected under current conditions)?	If this is the only medium in which contaminants exist above appropriately protective risk-based levels, generally you should answer "no." If complete exposure pathways exist for other media that are contaminated above risk-based levels, generally you should answer "yes." This EI reflects a site-wide evaluation.
3-7	Activities to date have focused on the most significantly contaminated medium (*e.g.*, soil) and have eliminated all previously unacceptable human exposures associated with this medium based on current conditions. There is a possibility that another contaminated medium (*e.g.*, sediment) poses a risk. Should I include this in the evaluation?	In the absence of a complete exposure assessment, you should use your best judgment. If the conceptual site model indicates that there is a reasonable expectation of exposure to a medium for which an exposure assessment has yet to be completed (*e.g.*, sediment), you should answer "yes" and proceed through subsequent steps. Enough progress most likely has been made to categorize the site as at least "current human exposures not controlled but some exposure control achieved."
3-8	Should I consider the indoor air inhalation pathway (associated with vapor intrusion) and food chain exposure pathway when answering this question?	Generally you should consider all exposure pathways of concern identified in the baseline risk assessment. If these pathways are pathways of concern, they should be considered in your answer. If an exposure assessment has yet to be completed, you should use your best judgment and make your evaluation with reasonable certainty.
3-9	If the only complete exposure pathway for the entire site (all media) is for the "trespasser" scenario, should I still answer "yes" to this question?	If exposure to a medium (*i.e.*, medium contaminated above risk-based levels) can be reasonably expected under any current exposure scenario, you should answer "yes." Remember, however, that anecdotal evidence of trespassing does not necessarily result in a determination of "not under control." Consider the frequency and/or duration of likely exposure to decide whether it can reasonably be expected that people will be exposed to contamination (above risk-based levels) that would result in unacceptable exposures.
3-10	At present, no drinking water wells have been impacted by contaminated ground water, but the wells could be impacted in the near future. Should we answer "no" now and change our response to "yes" if	If the plume is not contained and is migrating such that it is likely to reach drinking water wells within a year unless actions are taken, you should answer "yes." Otherwise, you should answer "no," and update the EI if and when this condition is met.

	and when the plume reaches the wells?	

Step 3: Are there complete human exposure pathways between contaminated ground water, soil, surface water, sediment, or air media and human receptors such that exposures can be reasonably expected under current conditions?		
3-11	The exposure scenarios driving the remedy, as presented in the ROD, are based on future land or ground water use conditions that are different than current use conditions. Should I base the response to this step on current use scenarios that are not driving the remedy?	Generally, yes. Use the exposure scenarios that consider current use, as developed in the baseline risk assessment, to make this evaluation.
3-12	A fishing advisory is in place to eliminate exposure to contaminated fish. Should I answer "no" to this question if this was the only remaining complete pathway prior to this action?	You should consider not only the presence of controls intended to eliminate exposure potential, but also their effectiveness. If evidence suggests that people are catching and eating fish despite the advisory, consider the likely frequency and duration of exposure to make a judgment as to whether it could reasonably be expected that people are exposed to contamination at unacceptable levels.
3-13	What should I do if, after completing the LTHHP EI for a site, new complete exposure pathways are identified or complete exposure pathways are eliminated due to response actions or a better understanding of the site?	If exposure pathway information changes based on new data, you should consider whether the change would effect the LTHHP EI evaluation for the site. If so, you should update the EI evaluation to reflect the new information.

Step 4: Are the potential human exposures associated with complete pathways within acceptable limits under current conditions?		
Question		**Answer**
4-1	Where can I find the information to answer this question?	Documents such as RI/FS reports, RODs, Action Memoranda, POLREPS, Close Out Reports, Five-Year Reviews, etc., are good sources of information.
4-2	How could risks be within acceptable limits if cleanup goals have yet to be met and there are complete exposure pathways between contaminated media and human receptors (*i.e.*, how could the answer to this question be "yes" if the answers to Steps 2 and Step 3 were "no" and "yes," respectively?)	In most cases, the response to this Step will be "no." However, there could be situations where cleanup goals have yet to be met and there are complete pathways, but the frequency or duration associated with those pathways are such that the exposures are not unacceptable. An example could be a site where subsurface soil is contaminated above ARARs and there is potential exposure to a utility worker under current conditions, but likely exposures are infrequent enough that the potential exposure (current conditions) is acceptable for the specific contaminants of concern.
4-3	Actions have been taken to reduce	Generally you should answer "yes" if this was the

	potential exposures to the contaminated medium of primary concern (*e.g.*, ground water) to within acceptable limits under current conditions. Should I answer "yes" to this question (*i.e.*, potential exposures are within acceptable limits)?	only medium for which exposures above acceptable limits exist. The indicator appears to reflect a site-wide evaluation, so exposures via all media should be within acceptable limits to answer "yes."
4-4	Activities to date have focused on the most significantly contaminated medium (*e.g.*, soil) and have reduced previously unacceptable potential exposures associated with this medium to within acceptable limits based on current conditions. There is a possibility that another contaminated medium (*e.g.*, sediment) poses a risk. Should I include this in the evaluation?	In the absence of a completed risk assessment, you should use your best judgment. If the conceptual site model indicates that potential exposures to a contaminated medium for which risk has yet to be characterized (sediment) could represent an unacceptable risk, you should answer "yes" and proceed through subsequent steps. Enough progress likely has been made to categorize the site as at least "current human exposures not controlled but some exposure control achieved."
4-5	We have yet to complete a baseline risk assessment for the site; however, some contaminant concentrations exceed appropriately protective risk-based levels in media for which complete pathways are reasonably expected under current conditions. Can I answer this question without a risk assessment?	In the absence of a completed risk assessment, base your evaluation on the best available information. If the medium is contaminated above the risk-based levels that have been identified at this stage of the assessment and complete exposure pathways are reasonably expected, you could answer "yes" or return to Step 1 and answer "no," based on your knowledge of the site and best judgment.
4-6	What risk "limits" should be used to make this evaluation? Should we use 10^{-6} or 10^{-4}excess lifetime cancer risk?	Base your evaluation on the risk limits being used for risk-based decisions at the site. For sites with a ROD, generally you should use the risk value used to establish cleanup levels. If a ROD has not been signed, generally you should use the protocol typically applied in the Region for pre-ROD sites (*e.g.*, use state ARARs, NCP risk range, etc.). If the appropriate risk limit is uncertain, generally you should return to Step 1 and answer "no."
4-7	How do I answer this question if the risks from exposure to some contaminants are above acceptable limits and others are within acceptable limits?	If the potential exposures to any contaminant represent an unacceptable risk, generally you should answer "no" to this question.
4-8	The potential exposures to individual contaminants are within acceptable limits under current conditions; however, cumulative risks under current conditions are above acceptable limits. Should I use single contaminant or cumulative risk as the basis for this evaluation?	Generally you should base your evaluation on the approach being used for risk-based decisions at the site. For example, if remedial actions to address current exposures are being driven by an assessment of cumulative risk, generally you should base your evaluation on the cumulative effects of exposure to multiple stressors.
4-9	The risks resulting from potential exposures vary depending on the exposure assumptions and the approach used to estimate the exposure point	Generally you should base your evaluation on the approach being used for risk-based decisions at the site. Generally you should use the same exposure assumptions and approach to determining exposure

	concentrations. What approach should be used to assess the risk from potential exposures to make this EI evaluation?	point concentrations as are used in the risk assessment for the site – generally you should not create any new information in order to answer this question. Note that the exposure scenarios considered in this step may be different than those considered in the baseline risk assessment, for example, if a pathway was eliminated from further consideration under this EI (Step 3) due to the presence of effective ICs (which are not considered in the baseline risk assessment).
4-10	If the only unacceptable potential exposures for the entire site (all media) are associated with the "trespasser" scenario, should I still answer "no" to this question?	If potential exposures are not within acceptable limits for any scenario, based on current conditions, generally you should answer "no."
4-11	At present, contamination in drinking water wells does not present an unacceptable risk, but contaminant concentrations could be rising. Should I answer "yes" now and change the response to "no" if and when the contaminant concentrations reach a level such that exposure would represent an unacceptable risk?	If the plume is not contained and is migrating such that contaminant concentrations are expected to reach unacceptable levels within a year unless actions are taken, generally you should answer "no." Otherwise, generally you should answer "yes," and update the EI if and when this condition is met.
4-12	The exposure scenarios driving the remedy, as presented in the ROD, are based on future land or ground water use conditions that are different than current use conditions. Should I base the response to this step on current use scenarios that are not driving the remedy?	Generally, yes. Generally you should use the exposure scenarios that consider current use, as developed in the baseline risk assessment, to make this evaluation.
4-13	What should I do if, after completing the LTHHP EI for a site, the degree of risk from potential exposures based on current conditions is reevaluated as we gain a better understanding of the site?	If the degree of risk is reevaluated based on new data, generally you should consider whether the change would effect the LTHHP EI evaluation for the site. If so, generally you should update the EI evaluation to reflect the new information.

Step 5: Have any actions been taken since EPA first exercised removal or remedial authority at the site that have significantly reduced the level of previously unacceptable human exposure under current conditions?		
Question		**Answer**
5-1	Where can I find the information to answer this question?	Documents such as RI/FS reports, RODs, Action Memoranda, POLREPS, RA Reports, Close Out Reports, Five-Year Reviews, etc., are good sources of information.
5-2	After initial site discovery, the state completed actions to stabilize hot spots prior to requesting EPA involvement with	Generally, no. Typically, the starting point for considering "actions" that have been taken to control current human exposures is the date when

	the site. The state actions resulted in significant human exposure control. Can we consider these actions when answering this question?	EPA first exercised removal or remedial authority at the site. Because the state actions occurred prior to this date, they generally should not be considered when answering this question.
5-3	Cleanup at an NPL site is being conducted by DoD and its contractors. Can these actions taken by others, not EPA, be considered when answering this question?	Generally, yes. As long as they were taken after EPA first exercised authority at the site, cleanup actions can be considered when answering this question, regardless of whether the actions were taken by EPA or others.
5-4	A removal action has reduced the cancer risk associated with the direct contact scenario by an order of magnitude. Direct contact risks, however, remain above the risk range (*i.e.*, greater than 10^{-4}) and are considered "unacceptable." Would this be considered an action that has controlled a significant level of unacceptable human exposure?	Generally, no. One of the thresholds for answering "yes" to this question may be that the action has reduced the risk associated with at least one exposure scenario (current conditions) from unacceptable to acceptable levels. Generally, the risks associated with this exposure scenario remain above acceptable levels.
5-5	We have achieved *RA Completion* for one of multiple OUs at the site. Actions are underway to address additional OUs. Have we achieved "some" exposure control?	As long as the OU involved unacceptable human exposures, you may be able to answer "yes" to this question in the evaluation of whether "current human exposures not controlled but some exposure control achieved." One of the thresholds for answering "yes" to this question may be that actions have achieved human exposure control (current conditions) in at least one of multiple OUs.
5-6	EPA has provided public water to all homes in the area of a contaminated aquifer that was previously used as water supply for private wells. The drinking water pathway no longer poses unacceptable risks under current conditions. Would this be considered an action that has controlled a significant level of unacceptable human exposure?	Generally, yes. One of the thresholds for answering "yes" to this question may be that the action has eliminated at least one previously complete human exposure pathway that presented unacceptable risk.
5-7	What should I do if, after completing the LTHHP EI for a site, actions are taken that significantly reduce unacceptable human exposures under current conditions?	If actions are taken that significantly reduce unacceptable human exposures, generally you should consider whether the change would effect the LTHHP EI evaluation for the site. If so, generally you should update the EI evaluation to reflect the new information.

Step 6: Is the site *Construction Complete*, is the remedy operating as intended, and are engineering and institutional controls, if required, in place and effective?	
Question	**Answer**

6-1	Where can I find the information to answer this question?	Documents such as RODs, Action Memoranda, POLREPS, RA Reports, Close Out Reports, Five-Year Reviews, etc., are good sources of information.

Step 6: Is the site *Construction Complete*, is the remedy operating as intended, and are engineering and institutional controls, if required, in place and effective?		
6-2	A PCOR has been signed for a ground water site, and it has been listed on the Construction Completions List (CCL). An operational and functional (O&F) determination for the pump and treat system is expected within a year. How should I answer this question?	For the purposes of this EI, remedies at *Construction Completion*sites should be "operating as intended" to achieve credit for a "protective remedy in place." Until an O&F determination is documented (*i.e.*, in an approved Interim RA Report), generally you should answer "no" to this question.
6-3	An in-situ soil vapor extraction (SVE) system has been installed and is operating as intended. Studies indicate that the system will achieve cleanup goals within the next 2-3 years. This is the last action required for cleanup, and the site is *Construction Complete*. How should I answer this question?	As long as the ICs required for the remedy to remain protective are in place and effective, generally you should answer "yes." The remedy has yet to achieve cleanup goals site-wide, but the site is *Construction Complete*and the remedy is operating as intended.
6-4	What should I do if, after completing the LTHHP EI for a *Construction Completion* site, an O&F determination is made or it is documented that ICs are in place and effective?	If the new information documents that the remedy is operating as intended and ICs are in place and effective, you should update the EI evaluation to reflect this information.

Appendix D: Glossary of Terms
(alphabetical by term)

Agricultural Use: Agricultural use refers to use for agricultural purposes, such as farmland for growing crops and pasture for livestock. Agricultural use also can encompass other activities, such as orchards, agricultural research and development, and irrigating existing farmland.

Commercial Use: Commercial use refers to use for retail shops, grocery stores, offices, restaurants, and other businesses.

Continued Use: Acres in continued use refer to areas that are being used in the same general manner as they were when the site became subject to the Superfund or Federal Facilities Programs.

Ecological Use: Ecological use refers to areas where proactive measures, including a conservation easement, have been implemented to create, restore, protect, or enhance a habitat for terrestrial and/or aquatic plants and animals, such as wildlife sanctuaries, nature preserves, meadows, and wetlands.

Industrial Use: Industrial use refers to traditional light and heavy industrial uses, such as processing and manufacturing products from raw materials, as well as fabrication, assembly, treatment, and packaging of finished products. Examples of industrial uses include factories, power plants, warehouses, waste disposal sites, landfill operations, and salvage yards.

Military Use: Military use refers to use for training, operations, research and development, weapons testing, range activities, logistical support, and/or provision of services to support military or national security purposes.

Mixed Use: Mixed use refers to areas at which uses cannot be differentiated on the basis of acres. For example, a condominium with retail shops on the ground floor and residential use on the upper floors would fall into this category. When selecting Mixed Use, the individual types of uses should be identified, if as possible.

Other Federal Use: Other Federal use refers to use to support the Federal government in Federal agency operations, training, research, and/or provision of services for purposes other than national security or military.

Operable unit acreage: The acreage within the portion of a site delineated in the Record of Decision (ROD) as an operable unit.

Planned Reuse: Acres in planned reuse include sites or OUs where a plan for a reuse is in place, but reuse has not yet begun. This could include conceptual plans, a contract with a developer, secured financing, approval by the local government, or the initiation of site redevelopment.

Property boundary acreage: All acreage within the property lines of the site or facility.

Property transfer parcel acreage: The acreage within a portion of a Federal facility delineated in a property transfer document. Property transfer parcels are the unit for reporting Universe, PFP, and RAU acres at Federal facilities where property transfers outside the Federal government (e.g., BRAC facilities).

Protective for People Under Current Conditions (PFP): This new measure is based on the existing Human Exposures Under Control Environmental Indicator and reports sites and land area, as measured in acres, that are protective for people under current conditions. Superfund site acreage will be determined by OU, while Federal facility site acreage will be determined by OU or property transfer parcel.

Public Service Use: Public service use refers use by a local or State government agency or a non-profit group to serve citizens' needs. This can include transportation services such as rail lines and bus depots, libraries and schools, government offices, public infrastructure such as roads, bridges, utilities, or other services for the general public.

Ready for Anticipated Use (RAU): This new measures replaces "Acres of Land Ready for Reuse" as well as "Sites Ready for Reuse" as defined in the 2004 Guidance. This measure includes sites and land area, as measured in acres, associated with sites that meet the 2006 Sitewide RfR (now renamed "Sitewide RAU") Guidance for continued and anticipated use. Superfund site acreage will be determined by OU while Federal facility site acreage will be determined by OU or property transfer parcel.

Recreational Use: Recreational use refers to use for recreational activities, such as sports facilities, golf courses, ballfields, open space for hiking and picnicking, and other opportunities for indoor or outdoor leisure activities.

Residential Use: Residential use refers to use for residential purposes, including single-family homes, town homes, apartment complexes and condominiums, and child/elder care facilities.

Reused: Acres at a site identified as in reuse refer to a site or OU where a new use or uses are occurring such that there has been a change in the type of use (e.g., industrial to commercial), or the property was unused and now supports a specific use. This means that the developed site or OU is actually used for its intended purpose by customers, visitors, employees, residents, or fauna, in the case of ecological reuse.

Site acreage: The acreage of contaminant investigation or remediation, as delineated in a RI/FS or another action document. Note that the site acreage may include acreage that is outside of the property boundary. Site acreage should equal the acreage reported for the Universe Indicator.

Status of Use Indicator: This indicator captures information about whether a site or any land area therein, as measured in acres, is being used. Sites and acres will be classified as either unused, in continued use, reused, or planned for reuse. Superfund site acreage will be determined by OU while Federal facility site acreage will be determined by OU or property transfer parcel.

Type of Use Indicator: This indicator describes the specific use at a site or any land area therein, as measured in acres, at the point in time when the Status of Use determination is made. Sites and acres will be classified as agricultural, commercial, ecological, industrial, military, mixed, other federal use, public service, recreational, or residential use. Superfund site acreage will be determined by OU while Federal facility site acreage will be determined by OU or property transfer parcel.

Universe Indicator: This indicator is designed to capture the full universe of potential sites and land area, as measured in acres, to be addressed by the CPRM measures. It includes:

1. Proposed, final, and deleted NPL sites, (including Federal facilities);
2. SA sites;
2. NTCRA sites; and
3. Certain non-NPL Federal facilities and FUDS, including those non-NPL Federal facilities (such as BRAC or FUSRAP sites) and FUDS where EPA has signed/concurred on a response action (at a minimum, completed a RI/FS, removal action, or other major cleanup decision document) or property transfer.

Unused: Acres identified as unused include sites or OUs not being used in any identifiable manner. This could be, for example, because site investigation and cleanup are ongoing, operations have ceased, the owner is in bankruptcy, or cleanup is complete, but the site remains vacant.