



# 9

## Military Munitions Response Program Comprehensive Plan Update

The Fiscal Year (FY) 2007 National Defense Authorization Act (NDAA) §313 outlines the Department of Defense's (DoD's) basic requirements to clean up munitions-contaminated sites. Additionally, the NDAA sets performance goals for cleanup under the Military Munitions Response Program (MMRP) and directs DoD to submit an annual MMRP Comprehensive Plan.

## MMRP Comprehensive Plan Update at a Glance

Fiscal Year 2009 Funding: **\$420.4 million**

### Program Accomplishments:

- Increased the number of munitions response sites (MRSs) achieving response complete (RC) at active installations by **29 percent** from FY2008
- Decreased Cost-to-Complete (CTC) estimates at active installations and Formerly Used Defense Sites (FUDS) properties by **13 percent** from FY2008
- Released Munitions Response Site Prioritization Protocol (MRSPP) **online training** program in FY2009
- Released Munitions and Explosives of Concern-Hazard Assessment for **two year trial**

## Overview

The Secretary of Defense must submit an annual update of DoD's plan for addressing cleanup of unexploded ordnance (UXO), discarded military munitions (DMM), and munitions constituents (MC) at defense sites (other than operational ranges). The MMRP Comprehensive Plan was submitted to Congressional Defense Committees in March 2007. The FY2007 NDAA §313 requires annual updates to the plan—including cleanup progress updates and adjustments to the program's goals, response plans, and funding estimates—through FY2010. This chapter satisfies the §313 requirement.

The MMRP directs environmental cleanup at locations where UXO, DMM, and MC are known or suspected to be present. These locations, other than operational ranges, are known as Munition Response Sites (MRSs). Through the MMRP, DoD has developed a better understanding of the unique explosive hazards posed by munitions. Since the MMRP's inception in 2001, DoD has developed an inventory of MRSs and uses a standard protocol to prioritize site cleanup. DoD executes the program through annual funding and, in FY2009, obligated \$420.4 million to clean up MRSs.

## Applicable Requirements

Cleanup of MRSs is governed by the following Federal legislation:

- **42 United States Code (U.S.C) §§ 9601–9675, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** establishes a framework for the identification, investigation, and cleanup of contamination caused by past activities.
- **The Superfund Amendments and Reauthorization Act (SARA) §211** created the Defense Environmental Restoration Program (DERP), codifies DoD's environmental responsibilities, and establishes cleanup standards. It also authorizes the federal government to get help from state and local governments for cleanup.
- **10 U.S.C. §2710** requires DoD to develop an inventory of MRSs to establish a prioritization methodology for response action. The Department updates and releases the inventory as part of the Defense Environmental Programs Annual Report to Congress. It is publicly available at <http://deparc.xservices.com/do/mmrp>.
- **Code of Federal Regulations, Title 32, Part 179, Munitions Response Site Prioritization Protocol (MRSPP)** requires DoD to assign a priority or alternative rating to all MRSs.

In addition, DoD developed policies and guidance to meet the above requirements, including:

- **DoD Instruction 4715.7, "Environmental Restoration Program,"** assigns responsibilities for planning, programming, budgeting, executing, and reporting for the DERP. It also established a process to evaluate risk from contamination.
- **The 2001 Management Guidance for the Defense Environmental Restoration Program (DERP)** details guidance on overall execution of the Installation Restoration Program (IRP) and MMRP.
- **DoD Memorandum, "Interim Policy for Defense Environmental Restoration Program (DERP) Eligibility"** updated and expanded DERP eligibility criteria. As a result, new sites became eligible under the DERP in FY2009. DoD Components will plan, program, and budget for the new sites during the next budget submission cycle.

Throughout FY2009, DoD continued updating the DERP Manual, which will supersede the 2001 Management Guidance for the DERP.

## Management Practices

DoD applies the environmental restoration process set forth by CERCLA and its implementing legislation, the National Oil and Hazardous Substance Pollution Contingency Plan, to address cleanup at MRSs. With over 3,700 MRSs in its inventory, DoD does not have the resources to address all contamination at once. Therefore, DoD developed the MRSPP to prioritize sites for cleanup.

The MRSPP consists of three separate modules to evaluate hazards associated with:

1. Explosives
2. Chemical warfare materiel
3. MC and incidental environmental contaminants

Based on relative risk in these hazard areas, DoD gives each MRS a numeric score or an alternative rating. This information affects how DoD sequences MRSs for cleanup. Factors such as economic, programmatic, and stakeholder concerns may also affect cleanup sequencing.

DoD Components were required to report MRSPP scores beginning in FY2008. Through FY2009, DoD assigned numeric score to 706 MRSs and alternative ratings to 3,077 MRSs. Of those, one is sequenced for cleanup ahead of higher priority MRSs. DoD investigated this site under the IRP, and began cleanup under the IRP. As DoD identified additional munitions contamination, the site moved to the MMRP. It is sequenced for cleanup ahead of higher priority MRSs to continue the cleanup started under the IRP.

DoD funds the cleanup of MRSs at active installations and FUDS properties through five ER accounts: Army, Navy, Air Force, FUDS, and Defense-wide. DoD funds MMRP activities at BRAC installations through two BRAC accounts: one for the first four rounds of BRAC in 1988, 1991, 1993, and 1995—called Legacy BRAC—and one for the fifth round of BRAC in 2005, called BRAC 2005.

DoD has more than doubled the MMRP funding obligated at all installations in the past four years, enabling more MRSs to efficiently move through the cleanup phases (Figure 9-1). Funding amounts for FY2009 include program management costs. These totals also reflect the transfer of funds from the ER accounts to provide funding for MRSs at installations closed in BRAC 2005.

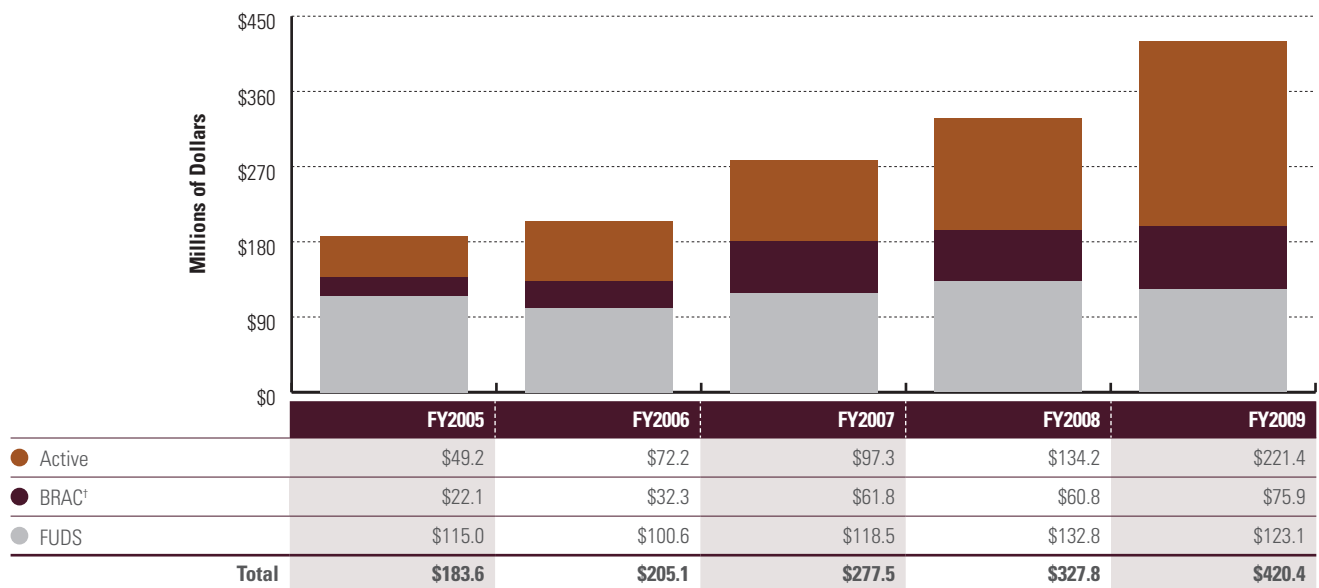
Appendix B, Section 1 contains MMRP funding data by DoD Component.

## Technology

Technology is an important part of the MMRP. The application of innovative, effective environmental technologies can improve cleanup efficiency, resulting in reduced risk and faster completion of the program. DoD supports research and development programs focusing on technologies to improve the safety, efficiency, and cost-effectiveness of munitions cleanup.

The primary challenge on land sites is distinguishing between hazardous items (e.g., UXO, DMM) and the overwhelming number of inert fragments and clutter

Figure 9-1 DoD MMRP Funding Obligations\*



\* Subtotals may not equal fiscal year totals due to rounding.

† Does not include funding for planning and compliance activities, revenue gained from land sales, or execution of prior year funding.

items. By some estimates, up to 70 percent of the budget for a typical cleanup goes to removing non-hazardous items from the site. The Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) support the development of UXO-specific geophysical detection systems and associated signal processing routines to address this challenge. DoD is testing these systems at a series of live test sites, including the recently completed demonstration at former Camp San Luis Obispo, California. Research shows that the next generation sensors have achieved excellent success in these demonstrations.

At sites covered by water, detection of UXO remains a challenge, especially for those sites with munitions buried beneath the water body's floor. DoD supports development and testing of acoustic (sonar), geophysical, and optical sensors to locate contaminants. It is unlikely that any single sensor system will apply to all underwater areas; a suite of sensors will be required. Recent research shows success with magnetometer arrays; DoD has scheduled full scale demonstrations of sonar and optical systems for 2010.

### Evaluation Criteria

The FY2007 NDAA §313 established the following goals for DoD to clean up MRSs:

- Complete preliminary assessments (PAs) at all active installations and FUDS properties by the end of FY2007
- Achieve remedy in place (RIP) or response complete (RC) at all Legacy BRAC MRSs by the end of FY2009
- Complete site inspections (SIs) at all active installations and FUDS properties by the end of FY2010
- Establish a RIP or RC goal at active and BRAC 2005 installations, and FUDS properties.

DoD establishes challenging performance metrics, as well as short- and long-term MMRP goals to measure progress. These goals align with CERCLA phases and milestones, and show program progress as sites move through the CERCLA phases from investigation to long-term management. Chapter 8, Restoration contains more information on restoration milestones.

DoD also measures MMRP progress by developing Cost-to-Complete (CTC) estimates, which are the anticipated funds necessary to complete all cleanup requirements. The CTC estimates are derived from site-level funding information prepared during the budgeting process. The estimates provide a picture of anticipated cost trends. Cost trends are also impacted by prioritization, input from regulators and other stakeholders, and the complexity of the cleanup. The length of time required for cleanup is

dependent on all of these factors. DoD anticipates that as installations complete responses at IRP sites, more funding will shift toward completing cleanup at MRSs.

In FY2009, DoD added 157 MRSs on active installations to its inventory, primarily due to expanded DERP eligibility. These sites are not subject to the PA or SI goals. DoD also added 68 MRSs to its FUDS inventory. DoD has not yet established a RIP/RC goal for FUDS MRSs because the U.S. Army Corps of Engineers (USACE) is in the process of completing SIs. Once USACE better characterizes the sites, DoD will evaluate the data and establish a RIP/RC goal for FUDS.

### Performance Summary

DoD has identified 3,783 MRSs on active and BRAC installations and FUDS properties through FY2009. DLA has identified no MRSs. DoD reports fewer MRSs on FUDS properties in FY2009 than in previous years. DoD identified some sites that they believed required cleanup, but later determined that these sites did not require any response actions. In FY2009 DoD stopped including data on these sites in this report.

By the end of FY2009, DoD had completed SIs at 72 percent of MRSs on active installations and at 67 percent of MRSs on FUDS properties (Figure 9-2). To help educate military personnel on implementing the MRSP, and on achieving the FY2010 SI goal, DoD released an online training program in FY2009. The online training course is available through Joint Knowledge Online at <http://jko.cmil.org> (course number: J3OP-US452).

Figure 9-2 DoD Progress Toward MMRP Performance Goals\*

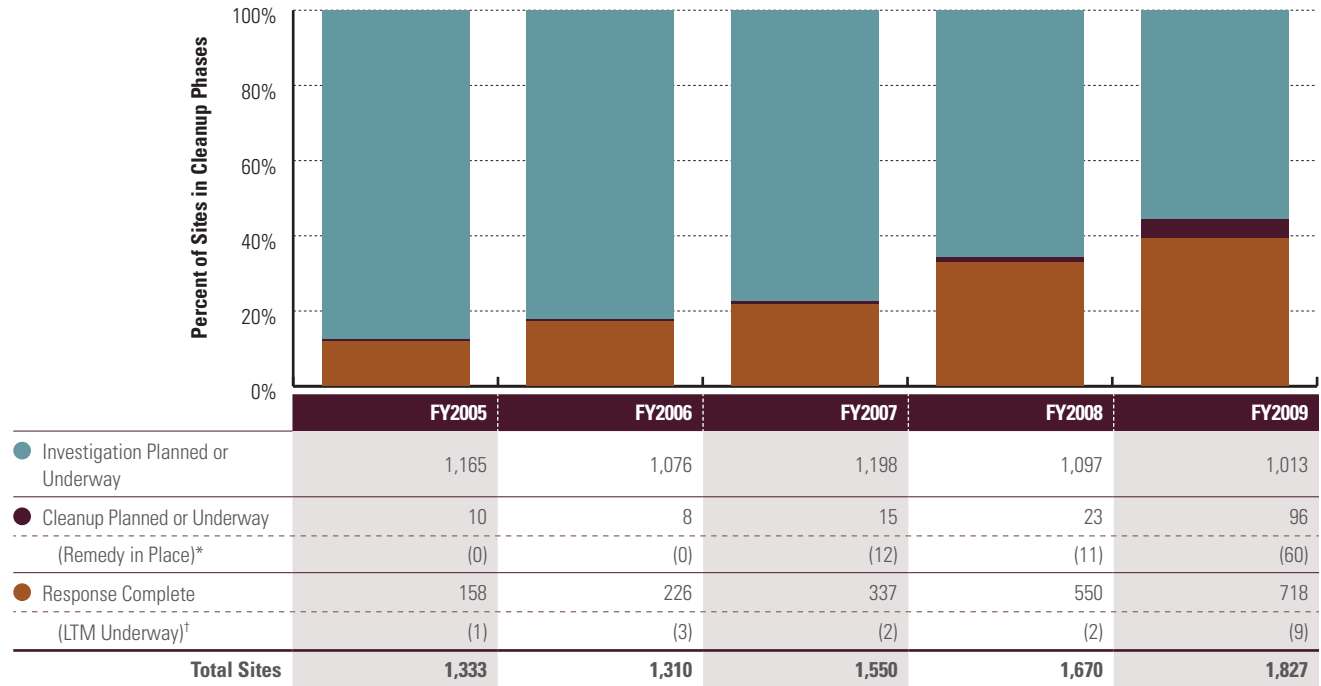
Active Installations	FY05	FY06	FY07	FY08	FY09
Complete PAs at all MRSs by the end of FY2007	69%	70%	96%	95%	97%
Complete SIs at all MRSs by the end of FY2010	14%	24%	29%	51%	72%
Achieve RIP/RC at all MRSs by the end of FY2020	12%	17%	23%	34%	43%
BRAC Installations	FY05	FY06	FY07	FY08	FY09
Achieve RIP/RC at all Legacy BRAC MRSs by the end of FY2009	36%	38%	63%	67%	68%
Achieve RIP/RC at all BRAC 2005 MRSs by the end of FY2017	N/A	0%	20%	27%	33%
FUDS Properties	FY05	FY06	FY07	FY08	FY09
Complete PAs at all MRSs by the end of FY2007	98%	99%	99%	99%	96%
Complete SIs at all MRSs by the end of FY2010	34%	34%	45%	58%	67%

\* Active MMRP: New sites added to the inventory in FY2009 are not subject to the PA or SI goals.

While DoD did not achieve RIP/RC at all Legacy BRAC MRSs by the end of FY2009 as planned, it is working aggressively to reduce risk at the remaining sites. The remaining sites generally pose significant challenges due to their complexity.

Appendix B, Section 8 contains MRS status by DoD Component.

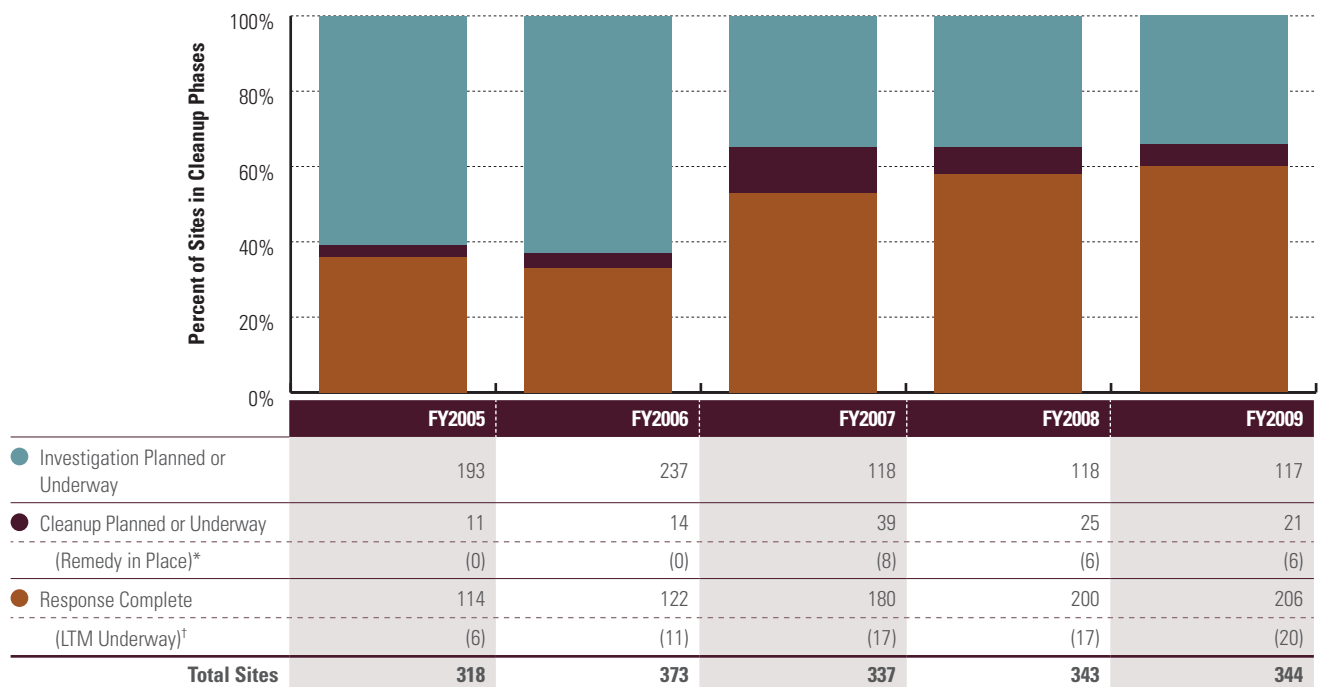
**Figure 9-3** DoD MRS Status at Active Installations by Cleanup Phase



\* RIP is a subset of Cleanup Planned or Underway.

† LTM is a subset of Response Complete.

**Figure 9-4** DoD MRS Status at Legacy BRAC and BRAC 2005 Installations by Cleanup Phase



\* RIP is a subset of Cleanup Planned or Underway.

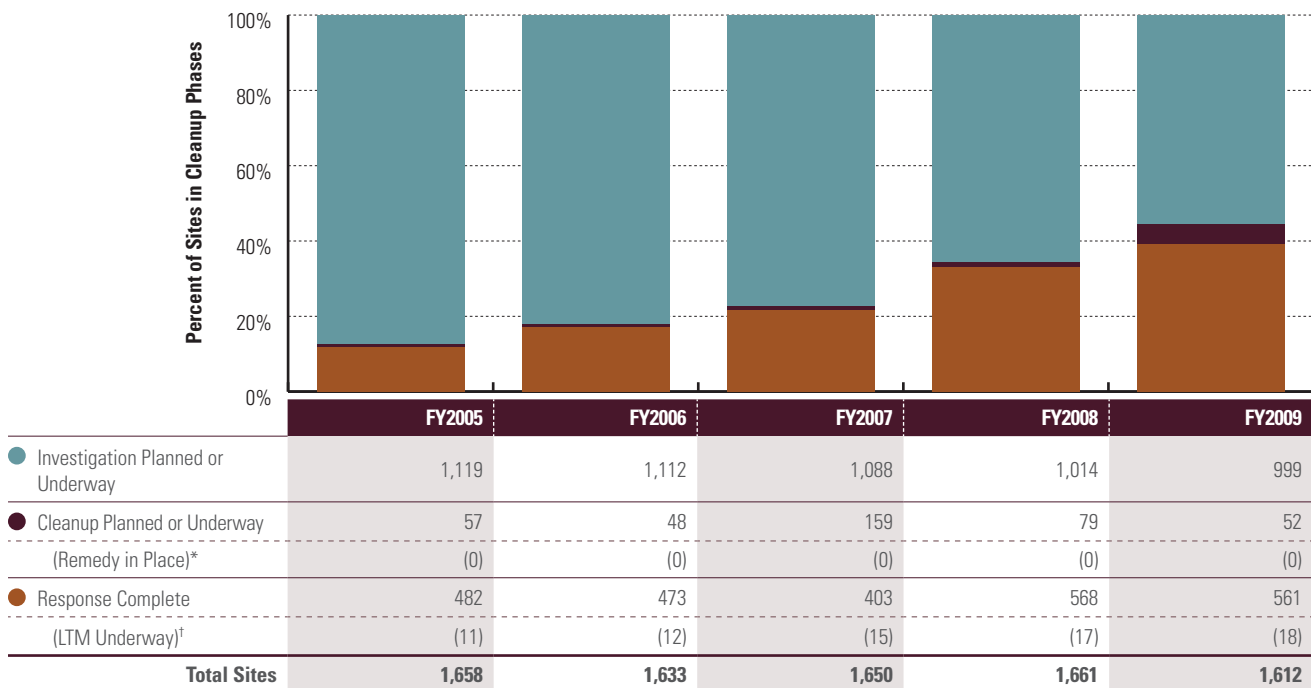
† LTM is a subset of Response Complete.

In FY2009, DoD reports 43 percent of MRSs achieving RIP/RC at active installations, an increase from 34 percent in FY2008 (Figure 9-3). At BRAC installations, 62 percent of MRSs achieved RIP/RC, an increase from 60 percent FY2008 (Figure 9-4). At FUDS properties, 35 percent of MRSs achieved RIP/RC, an increase from 34 percent in FY2008 (Figure 9-5).

Since FY2008, the estimated CTC at active and BRAC installations and FUDS properties dropped by 13 percent. (Figure 9-6).

DoD continues to reach out to federal and state environmental regulators, federal land managers, and other stakeholders to improve the MMRP. One example of how DoD collaborates with stakeholders to clean up munitions is through its participation in the Munitions Response Forum (MRF). State regulators reestablished the MRF (formerly led by DoD and known as the Munitions Response Committee) in FY2009 to identify issues and discuss solutions to enhance environmental cleanup at MRSs.

Figure 9-5 DoD MRS Status at FUDS Properties by Cleanup Phase



\* RIP is a subset of Cleanup Planned or Underway.

† LTM is a subset of Response Complete.

Figure 9-6 DoD MMRP CTC Estimates

