



Restoration | Appendix D: Restoration Budget Overview

Since 1997, the Department of Defense (DoD) has invested over \$20 billion in restoration efforts through the Defense Environmental Restoration Program (DERP). As illustrated in Figure D-1, funding comes from the Environmental Restoration (ER) account, which funds environmental cleanup at active installations and Formerly Used Defense Sites (FUDS); and the Base Realignment and Closure (BRAC) account, which funds restoration at BRAC installations.

Three program categories: Installation Restoration Program (IRP), Military Munitions Response Program (MMRP), and Building Demolition/Debris Removal (BD/DR) Program are funded through the ER and BRAC accounts. While the IRP includes hazardous or low-level radioactive waste projects, the MMRP includes response actions to address munitions and explosives of concern (MEC) and munitions constituents (MC). The BD/DR program addresses unsafe buildings and structures.

This appendix provides detailed information on how ER and BRAC environmental funding at the DoD and Component levels meet restoration requirements; how funding relates to progress through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) cleanup process; and describes future funding needs.

Figure D-1 DoD Restoration Budget Summary (millions)

Environmental Restoration*				
Component	FY2006 Actual	FY2007 Actual	FY2008 Estimated	FY2009 Requested
Army	\$395.3	\$402.8	\$437.7	\$447.8
Navy [†]	\$295.9	\$301.7	\$299.1	\$290.8
Air Force	\$401.1	\$401.5	\$456.2	\$496.3
DLA	\$18.5	\$11.0	\$9.2	\$9.6
FUDS	\$262.8	\$262.8	\$278.9	\$257.8
Other Defense-Wide Programs	\$3.1	\$3.3	\$3.5	\$3.6
Total	\$1,376.7	\$1,383.0	\$1,484.5	\$1,505.8

BRAC Environmental[†]				
Component	FY2006 Actual	FY2007 Actual	FY2008 Estimated	FY2009 Requested
Army	\$145.6	\$135.7	\$144.9	\$122.8
Navy [‡]	\$279.5	\$231.9	\$270.4	\$197.7
Air Force	\$138.5	\$118.5	\$131.6	\$131.5
DLA	\$5.7 [§]	\$6.7	\$3.7	\$2.7
Total	\$569.2	\$492.7	\$550.6	\$454.8

* Funding shown includes IRP, MMRP, BD/DR, and management and support costs. Due to rounding, subtotals may not equal fiscal year totals.

† Funding shown includes IRP, MMRP, compliance, planning, and management and support costs for all BRAC rounds in all fiscal years.

‡ Due to rounding, subtotals may not equal fiscal year totals.

‡ Department of the Navy includes Navy and Marine Corps.

§ Includes other Defense-wide program costs of \$0.3 million.

Progress Through Cleanup Phases

As IRP sites progress through the cleanup process, site investigations are completed and cleanup activities commence. As this happens, funding trends mirror this site progress and the proportion of IRP funding spent on DERP investigations decreases as the proportion of funding spent on cleanup activity increases.

The Department conducted an inventory to identify MMRP sites in Fiscal Year (FY) 2001, following the formal creation of the MMRP. This inventory identified many new sites, most of which entered the program in the investigation stage and required funding. This temporarily increased the proportion of DERP funding spent on investigation; however, the overall trend will decline as more sites enter the remedial phase.

Figures D-2 and D-3 show breakouts of ER funding by restoration program category, IRP and MMRP, respectively, across each stage of the restoration process—investigation, cleanup, and long-term management (LTM)—as well as program management. While LTM identifies costs associated with environmental monitoring of site conditions, program management primarily captures any oversight costs. Sixty-one percent of the FY2007 ER IRP budget was obligated to cleanup activities.

Figures D-4 and D-5 illustrate BRAC restoration funding broken out by IRP and MMRP, respectively. DoD invested \$191.3 million, or 51 percent, of the FY2007 BRAC budget for the IRP on cleanup activities. Funding for BRAC MMRP investigation activities is relatively larger than the same budget for IRP, as the Department continues to characterize sites with potential MEC and MC hazards.

Figure D-2 DoD ER IRP Budget (millions)**

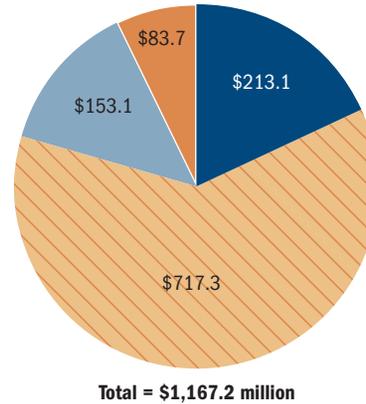


Figure D-3 DoD ER MMRP Budget (millions)*

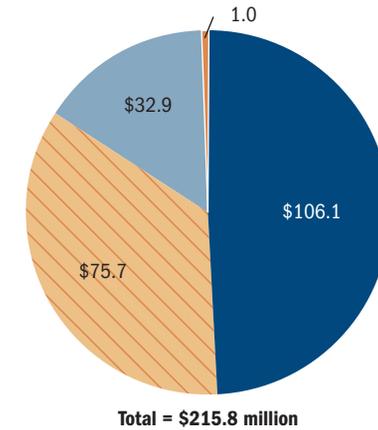


Figure D-4 DoD BRAC IRP Budget (millions)**

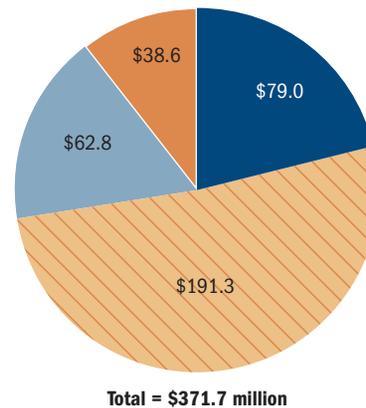
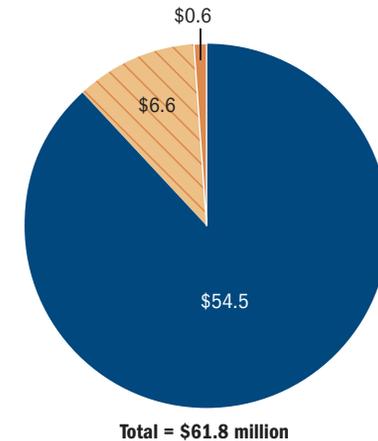


Figure D-5 DoD BRAC MMRP Budget (millions)*



* Due to rounding, subtotals may not equal fiscal year totals.

† Includes BD/DR costs.

‡ Does not include planning or compliance costs.

Relative-Risk Reduction

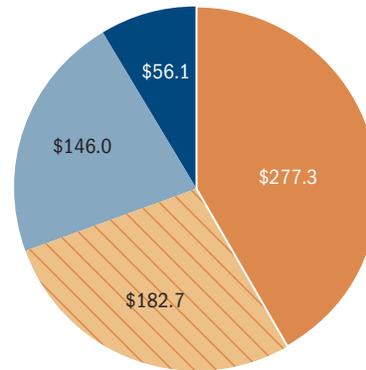
DoD gauges DERP progress through the program metric to address the “worst first” in site cleanup. Funding limitations require that DoD prioritize sites based on the risk the site poses to human health and the environment relative to other sites in the program. IRP sites are classified by relative-risk as high, medium, and low; sites can also be classified as not evaluated or not required.

To address the worst sites first, DoD spent the greatest portion of FY2007 ER funding in the IRP on the remaining high relative-risk IRP sites. DoD made a commitment to address all of these sites at active installations and FUDS by FY2007. As illustrated in Figure D-6, DoD spent \$277.3 million of the FY2007 ER IRP budget for investigation and cleanup activities on high relative-risk sites. Likewise, Figure D-7 demonstrates that DoD obligated \$194.1 million, or 68 percent, of the equivalent BRAC budget to high relative-risk IRP sites.

In addition to high, medium, and low relative-risk sites, DoD also apportioned funds for sites that have not yet been evaluated for relative risk, most of which are still in investigation stages.

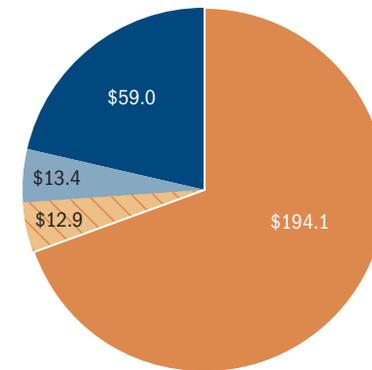
As a transitional year, Components are required to report Munitions Response Site Prioritization Protocol (MRSPP) scores or Risk Assessment Codes (RACs) in FY2007. DoD will report the relative risk to human health and the environment at MMRP sites based on results on the MRSPP scores, as well as the RACs. The relative priority assigned will be based on the potential hazards present and site conditions, and serve as the primary factor for sequencing response actions. The relative priority will replace the RAC scores in FY2008.

Figure D-6 DoD ER IRP Budget for Investigation and Cleanup Activities by Relative Risk Category (millions)*



Total = \$662.1 million

Figure D-7 DoD BRAC IRP Budget for Investigation and Cleanup Activities by Relative Risk Category (millions)*



Total = \$284.4 million

High Medium Low Not Evaluated

* Does not include BD/DR, PRP, or RA-O costs.

Cost-to-Complete Estimates

The Department also measures DERP progress using program cost-to-complete (CTC) estimates, which are an estimation of anticipated costs necessary to complete restoration requirements. CTC estimates are derived from the budgeting process, are based on site-level data, and provide the most accurate picture of anticipated cost trends for addressing restoration requirements. The CTC estimates are valued as an important oversight and program management tool that the Department uses to determine if funds are being utilized effectively.

The total CTC for the DERP declines as DoD moves sites through the CERCLA cleanup process and completes restoration requirements. Figure D-8 illustrates the decrease in total IRP and MMRP CTC projected for FY2007 through FY2013 for ER and BRAC funding. FY2007 CTC estimates reflect anticipated costs from FY2008 through completion. DoD's CTC estimates will continue to improve and provide a more refined picture of munitions response requirements, as the MMRP matures and sites are further characterized.

Figure D-9 shows total CTC estimates for each Component. The FUDS program has the highest CTC estimate for MMRP activities due to the large number of MMRP sites present at FUDS properties. All Components with MMRP sites, however, will spend increasing amounts of funding on MMRP activities in future years as DoD continues to increase its focus on addressing the risks associated with these sites. DoD's estimated CTC for munitions responses at BRAC installations is primarily composed of funding for addressing MMRP requirements at Army BRAC installations.

Figure D-8 CTC Estimates by Fiscal Year for FY2007 through FY2013 (millions)**

Program	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013
ER	\$28,441.6	\$27,158.4	\$25,836.0	\$24,526.6	\$23,141.9	\$21,730.8	\$20,292.1
IRP	\$10,163.6	\$9,104.2	\$8,051.5	\$7,152.7	\$6,311.8	\$5,589.2	\$4,934.8
MMRP	\$18,278.0	\$18,054.2	\$17,784.6	\$17,374.0	\$16,830.1	\$16,141.6	\$15,357.3
BRAC	\$3,881.5	\$3,456.5	\$3,125.1	\$2,933.3	\$2,744.9	\$2,528.1	\$2,280.9
IRP	\$2,934.2	\$2,597.0	\$2,308.5	\$2,170.4	\$2,012.9	\$1,861.6	\$1,696.5
MMRP	\$947.3	\$859.0	\$816.5	\$762.9	\$732.0	\$666.4	\$584.3
Total	\$32,323.2	\$30,614.8	\$28,961.1	\$27,459.9	\$25,886.8	\$24,258.8	\$22,573.0

Figure D-9 CTC Estimates by Component for FY2008-Completion (millions)*

Program	Army	Navy†	Air Force	DLA	FUDS	Total
ER	\$4,814.3	\$2,578.4	\$4,602.7	\$173.9	\$16,272.2	\$28,441.6
IRP	\$1,871.1	\$1,865.2	\$3,004.1	\$173.9	\$3,249.3	\$10,163.6
MMRP	\$2,943.2	\$713.3	\$1,598.6	\$0.0	\$13,023.0	\$18,278.0
BRAC	\$1,395.5	\$1,481.4	\$983.0	\$21.6	\$0.0	\$3,881.5
IRP	\$599.8	\$1,334.9	\$977.9	\$21.6	\$0.0	\$2,934.2
MMRP	\$795.7	\$146.5	\$5.1	\$0.0	\$0.0	\$947.3
Total	\$6,209.8	\$4,059.9	\$5,585.7	\$195.6	\$16,272.2	\$32,323.2

* Funding represents site-level data and does not include management and support costs not directly attributable to specific sites.

† Due to rounding, subtotals may not equal fiscal year and Component totals.

‡ Department of the Navy includes Navy and Marine Corps.

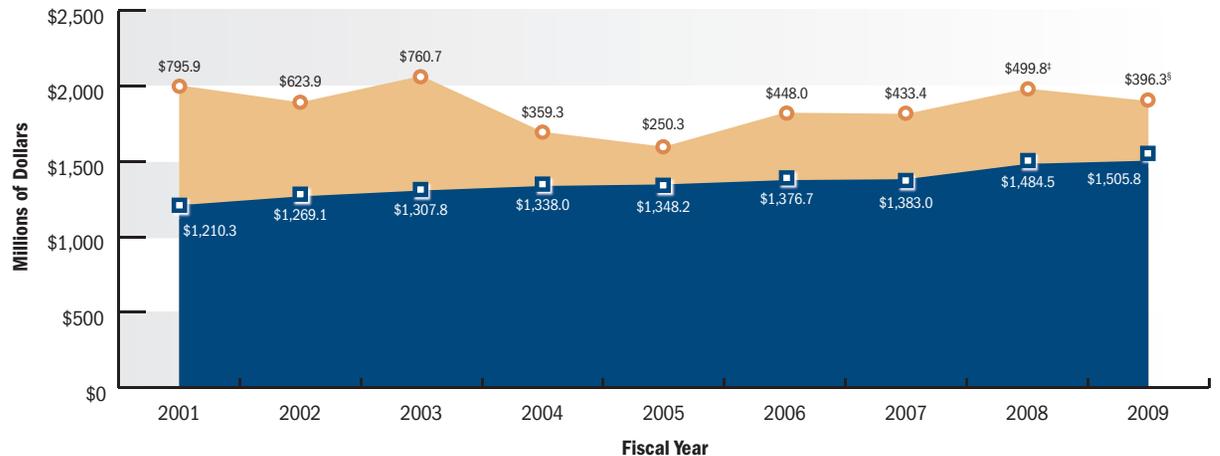
DoD

The Department is committed to the restoration of sites, which contain hazardous substances from past practices on DoD installations and FUDS properties, as this will protect human health and the environment.

In FY2007, DoD invested over \$1.8 billion in ER funding for restoration activities at active installations and FUDS properties, as shown in Figure D-10. DoD invested \$433.4 million for restoration activities at BRAC installations, which excludes planning and compliance costs, and land sale revenue used by the Components to supplement BRAC restoration activities. The FY2007 BRAC restoration budget decreased slightly from \$448.0 million in FY2006.

Figure D-11 illustrates the distribution of total DERP ER funds, which includes funding for active installations and FUDS properties in both the IRP and MMRP, across each stage of the restoration process. In FY2007, a majority of ER funding was invested in cleanup activities. Correspondingly, Figure D-12 shows the overall BRAC environmental funding. DoD obligated \$197.9 million, or 46 percent, of FY2007 BRAC funding to cleanup activities.

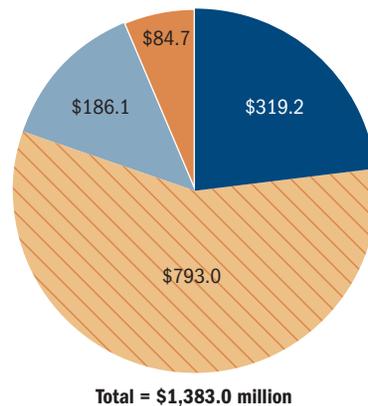
Figure D-10 DoD ER and BRAC Restoration Budget Trends**



* Does not include planning or compliance costs; does not include land sale revenue where appropriate.
 † Includes BRAC 2005 costs beginning in FY2007.

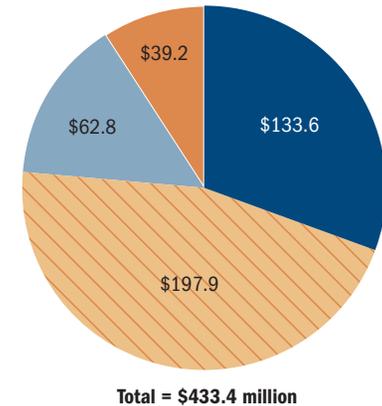
‡ Does not include \$3.6 million in planning and compliance management costs.
 § Does not include \$3.9 million in planning and compliance management costs.

Figure D-11 DoD ER Budget by Cleanup Phase (millions)**



* Due to rounding, subtotals may not equal fiscal year totals.
 † Includes BD/DR costs of \$5.5 million.

Figure D-12 DoD BRAC Restoration Budget by Cleanup Phase (millions)**



† Does not include planning or compliance costs.

FY2007 CTC estimates reflect anticipated costs from FY2008 through completion. As shown in Figures D-13 and D-14, DoD's current CTC for active installations and FUDS properties was approximately \$28.4 billion, with \$10.2 billion for the IRP and \$18.3 billion for the MMRP. This amount remains steady compared to the FY2006 CTC of \$28.7 billion. The BRAC site-level CTC also remained steady at \$3.9 billion in FY2007.

Figure D-13 DoD ER CTC Trends*

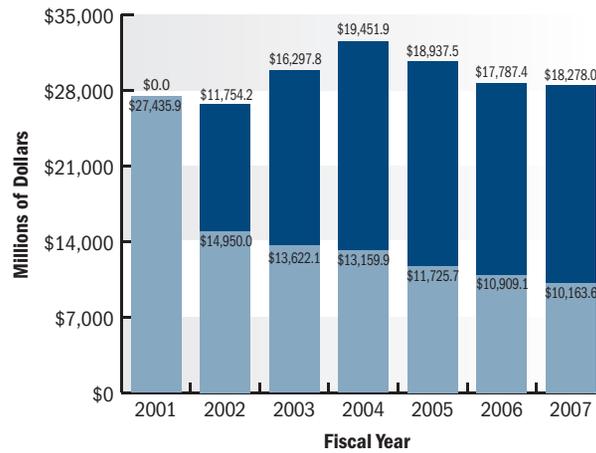
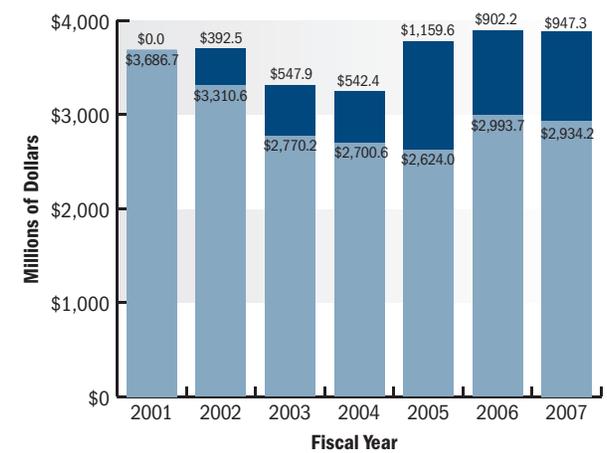


Figure D-14 DoD BRAC Restoration CTC Trends**



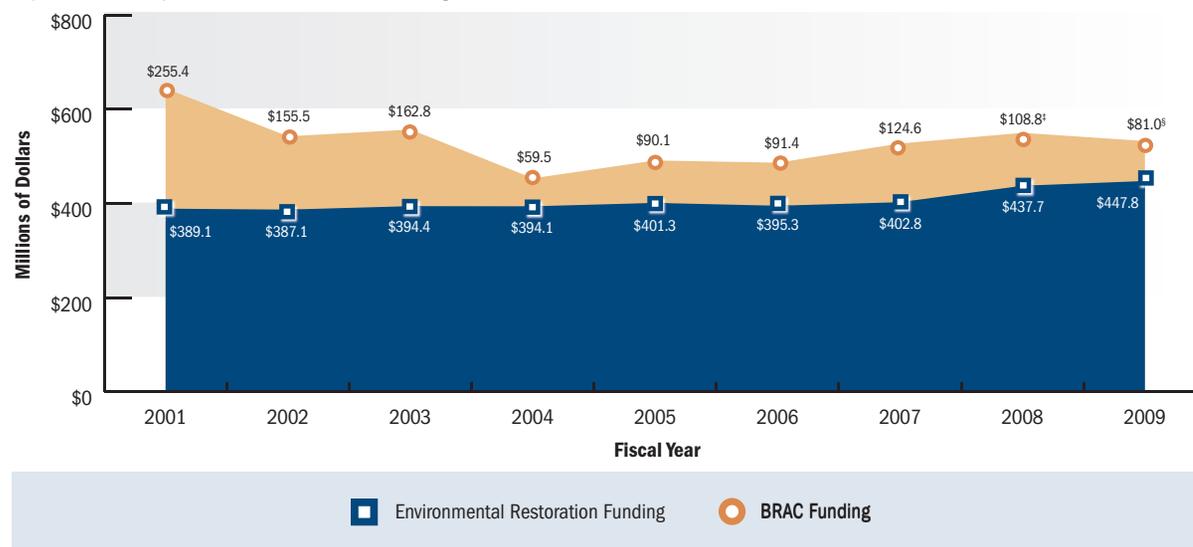
*Funding represents site-level data and does not include management and support costs not directly attributable to specific sites.
 †Includes BRAC 2005 costs beginning in FY2007.

Army

Army cleanup programs are a vital element of its sustainability ethic as these programs build trust with the American public. In FY2007, the Army obligated \$527.4 million for restoration activities, a \$40.7 million increase from the FY2006 budget. Over 76 percent of funding, or \$402.8 million, was invested in restoration at active installations. The Army allocated \$372.9 million and \$29.9 million for IRP and MMRP activities at active installations, respectively. Funding for restoration at BRAC installations increased to \$124.6 million, compared to \$91.4 million in FY2006. Figure D-15 illustrates the Army's ER and BRAC restoration budget trends.

Of the overall Army ER budget, 59 percent of the funds was obligated for cleanup activities and 15 percent went toward investigation activities. The Army used the remaining funds for LTM activities and program management. The Army obligated an even greater proportion, 77 percent, of its BRAC restoration budget to investigation activities. Army's ER and BRAC activities are profiled by cleanup phase in Figures D-16 and D-17.

Figure D-15 Army ER and BRAC Restoration Budget Trends**†



* Does not include planning or compliance costs; does include land sale revenue where appropriate.
 † Includes BRAC 2005 costs beginning in FY2007.

‡ Does not include \$3.6 million in planning and compliance management costs.
 § Does not include \$3.9 million in planning and compliance management costs.

Figure D-16 Army ER Budget by Cleanup Phase (millions)*

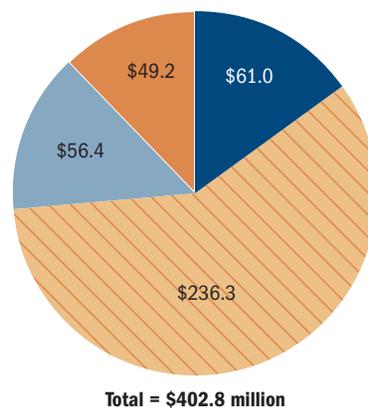
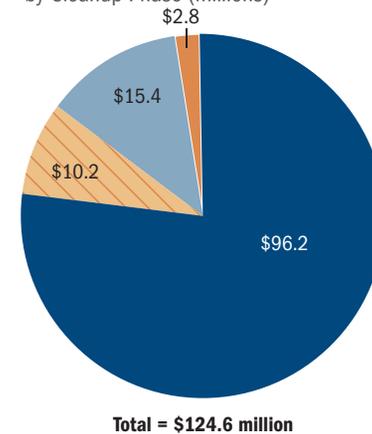


Figure D-17 Army BRAC Restoration Budget by Cleanup Phase (millions)**†



* Due to rounding, subtotals may not equal fiscal year totals.
 † Does not include planning or compliance costs.

The site-level CTC for restoration at Army's active installations, including IRP and MMRP, decreased from \$5.2 billion in FY2006, to \$4.8 billion in FY2007, as illustrated in Figure D-18. The IRP site-level CTC experienced a reduction of \$273.6 million, and the MMRP site-level CTC declined by \$88.9 million. The Army's CTC for BRAC IRP and MMRP installations increased from \$1.3 billion in FY2006 to \$1.4 billion in FY2007, with the IRP component having increased from \$523.7 million in FY2006 to \$599.8 million in FY2007. Similar to active installations, the MMRP site-level CTC for BRAC installations also decreased slightly from \$800.3 million to \$795.7 million as a result of more complete site characterizations. Army's BRAC CTC trends are shown in Figure D-19.

Figure D-18 Army ER CTC Trends*

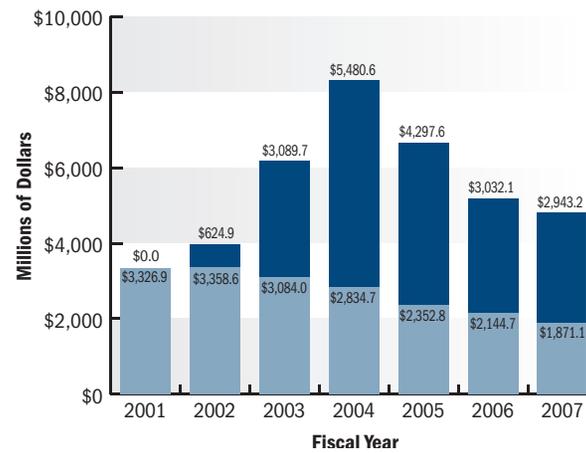
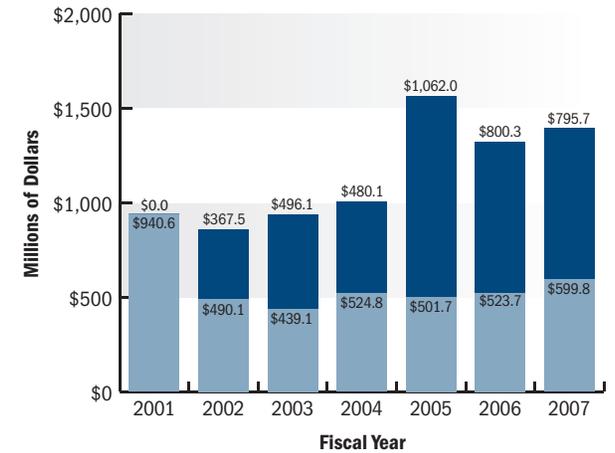


Figure D-19 Army BRAC Restoration CTC Trends**



IRP Funding MMRP Funding

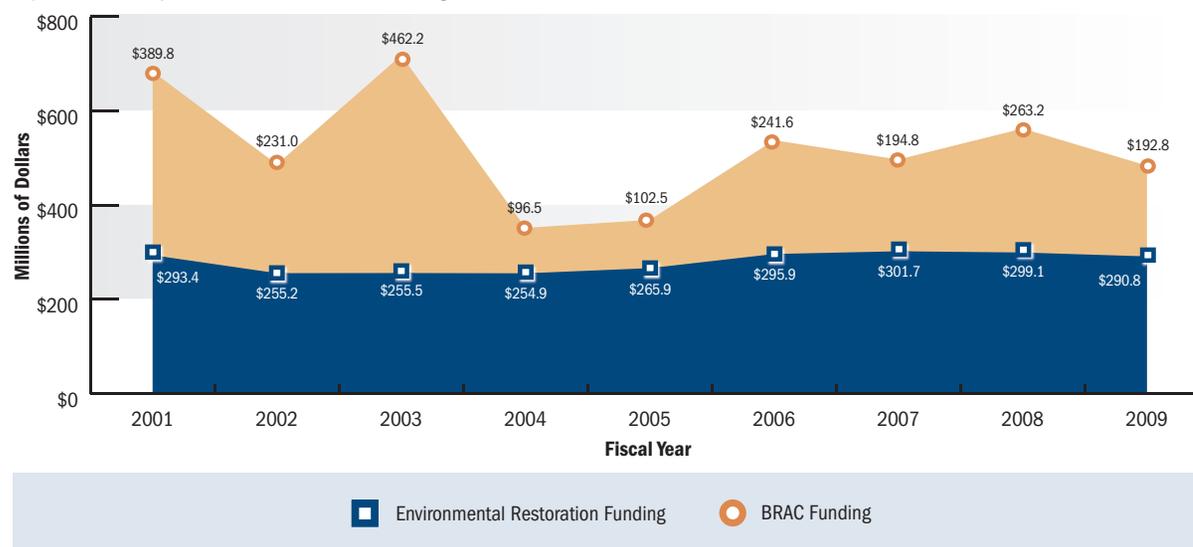
* Funding represents site-level data and does not include management and support costs not directly attributable to specific sites.
 † Includes BRAC 2005 costs beginning in FY2007.

Navy

The Department of the Navy's (DON's) restoration budget, which includes ER and BRAC funds for the Navy and Marine Corps, totaled \$496.5 million in FY2007. DON obligated \$301.7 million of ER funding in FY2007, \$252.9 million for IRP and \$48.8 million for MMRP. The FY2007, DON obligated \$194.8 million for the BRAC restoration budget, \$187.2 million for IRP and \$7.6 million for MMRP. Historical and projected funding trends for FY2001 through FY2009 are depicted in Figure D-20.

Figures D-21 and D-22 illustrate DON's ER and BRAC funding distributions by cleanup phases and program management. Approximately 63 percent of restoration costs at active installations in FY2007 were allocated to design work, interim or final cleanup actions, operations and maintenance, and LTM, while 21 percent of funding was spent on investigation activities; the remaining funding was spent on program management activities. Approximately 74 percent of restoration costs at installations identified during all BRAC rounds were allocated to design work, interim or final cleanup actions, operations and maintenance, and LTM, while 14 percent of funding was spent of investigation activities. Twelve percent was spent on program management activities.

Figure D-20 Navy ER and BRAC Restoration Budget Trends**†



* Does not include planning or compliance costs; does include land sale revenue where appropriate.

† Department of the Navy includes Navy and Marine Corps.

‡ Includes BRAC 2005 costs beginning in FY2007.

Figure D-21 Navy ER Budget by Cleanup Phase (millions)**†

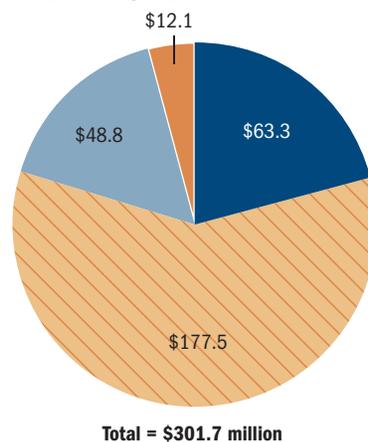
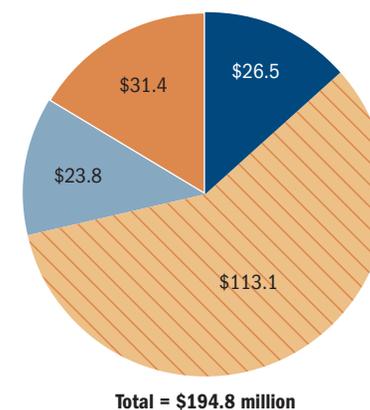


Figure D-22 Navy BRAC Restoration Budget by Cleanup Phase (millions)**†



* Due to rounding, subtotals may not equal fiscal year totals.

† Department of the Navy includes Navy and Marine Corps.

‡ Does not include planning or compliance costs.

CTC estimates for ER sites remained steady at \$2.6 billion and CTC estimates for BRAC sites remained steady at \$1.5 billion, as shown in Figures D-23 and D-24. MMRP contributed to a small rise in the CTC at both active and BRAC installations. The total CTC for the IRP at DON active and BRAC installations is estimated at \$3.2 billion, not including program management costs. Correspondingly, MMRP completion costs at active and BRAC installations for the DON are estimated at \$0.9 billion, not including program management costs.

Figure D-23 Navy ER CTC Trends**

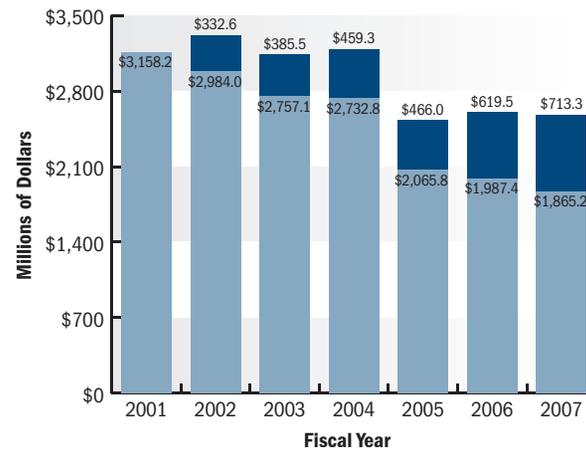
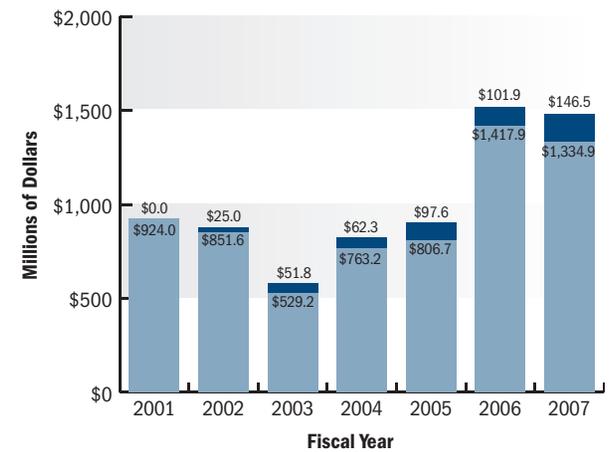


Figure D-24 Navy BRAC Restoration CTC Trends**



IRP Funding MMRP Funding

* Funding represents site-level data and does not include management and support costs not directly attributable to specific sites.

† Department of the Navy includes Navy and Marine Corps.

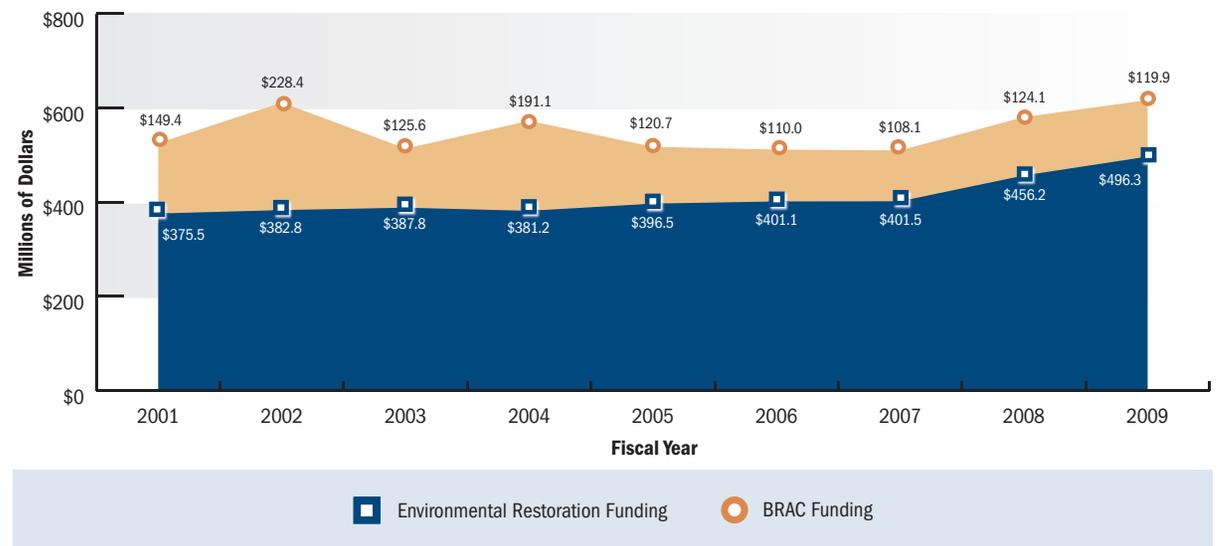
‡ Includes BRAC 2005 costs beginning in FY2007.

Air Force

The Air Force obligated \$509.6 million for installation restoration activities in FY2007. Funds obligated for active installations totaled \$401.5 million, while those for BRAC installations were \$108.1 million. In FY2007, the Air Force invested \$382.9 million in IRP sites and \$18.6 million in MMRP sites at active installations. The Air Force plans to increase the ER budget annually through FY2009 in order to continue progress through cleanup phases, as illustrated in Figure D-25.

As the DERP matures, a larger percentage of funds are spent on cleanup activities rather than on investigation. Figures D-26 and D-27 show the distribution of ER and BRAC funding by cleanup phase, respectively. Cleanup activities and LTM constituted \$277.9 million of Air Force's budget at active installations. Of the overall BRAC budget, the Air Force allocated \$75.0 million, or 69 percent, to cleanup activities and LTM.

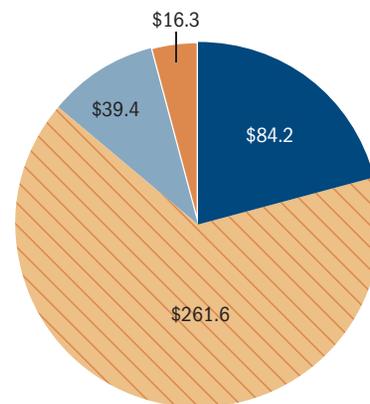
Figure D-25 Air Force ER and BRAC Restoration Budget Trends**



* Does not include planning or compliance costs; does include land sale revenue where appropriate.

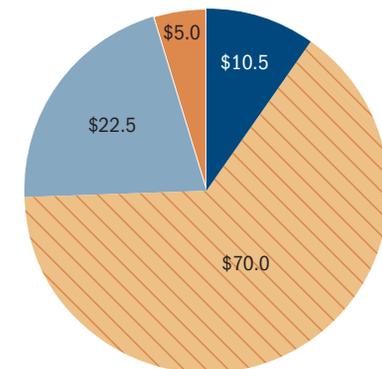
† Includes BRAC 2005 costs beginning in FY2007.

Figure D-26 Air Force ER Budget by Cleanup Phase (millions)**



Total = \$401.5 million

Figure D-27 Air Force BRAC Restoration Budget by Cleanup Phase (millions)**



Total = \$108.1 million

* Due to rounding, subtotals may not equal fiscal year totals.

† Includes BD/DR costs of \$4.4 million.

‡ Does not include planning or compliance costs.

As of the end of FY2007, the active Air Force's site-level CTC was approximately \$4.6 billion, with \$3.0 billion for IRP sites and \$1.6 billion for MMRP sites. This \$51.3 million decrease from FY2006 was due to continued cleanup progress at IRP sites. In addition, the Air Force reduced the BRAC site-level CTC to \$983.0 million in FY2007. The BRAC CTC reductions are attributable both to cleanup progress made in FY2007, resulting in fewer open sites, and significant progress made in reducing costs. The CTC trends for active and BRAC installations are shown in Figures D-28 and D-29, respectively.

Figure D-28 Air Force ER CTC Trends*

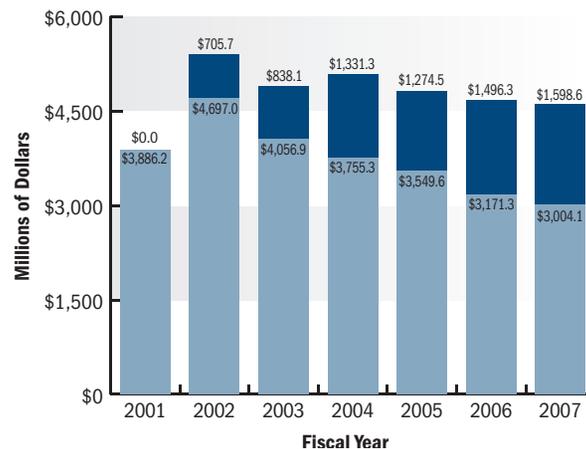
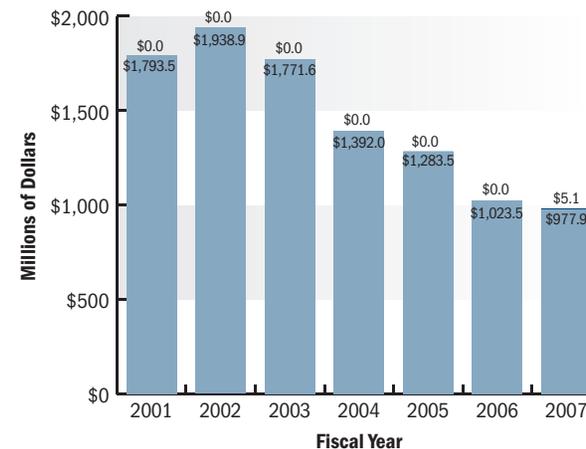


Figure D-29 Air Force BRAC Restoration CTC Trends**



IRP Funding MMRP Funding

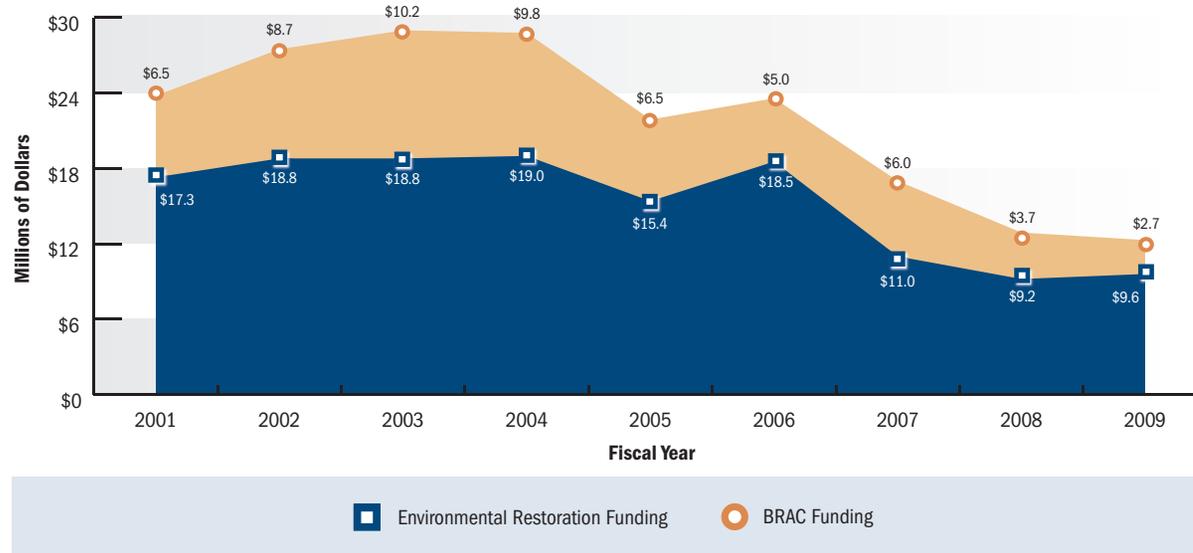
* Funding represents site-level data and does not include management and support costs not directly attributable to specific sites.
 † Includes BRAC 2005 costs beginning in FY2007.

DLA

Over the past seven years, the Defense Logistics Agency (DLA) has continued to receive fairly stable funding for both active and BRAC restoration. During FY2007, DLA obligated \$17.0 million for restoration activities, 28 percent less funding than in FY2006. The FY2007 budget included \$11.0 million for active installation restoration and \$6.0 million for BRAC restoration activities. However, projections for FY2008 and FY2009 suggest budget reductions to \$12.9 million and \$12.3 million, respectively, and are due to DLA's progress towards restoration goals and reducing the amount of cleanup required. Figure D-30 illustrates DLA's ER and BRAC restoration budget trends.

As sites progress through the cleanup process, more sites complete investigations and advance to cleanup activities. Of the \$11.0 million obligated to active installations, DLA allocated \$7.5 million, or 68 percent, for cleanup activities and \$1.2 million, or 11 percent, for site investigations. The remaining funds were obligated for LTM and program management. For the BRAC program, DLA obligated \$4.6 million, or 77 percent, for cleanup activities. Figures D-31 and D-32 show the allotment of funding for the ER and BRAC programs by cleanup phase, respectively.

Figure D-30 DLA ER and BRAC Restoration Budget Trends**†



* Does not include planning or compliance costs; does include land sale revenue where appropriate.
 † Includes BRAC 2005 costs beginning in FY2007.

Figure D-31 DLA ER Budget by Cleanup Phase (millions)*

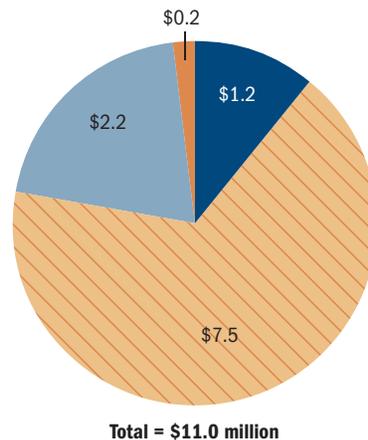
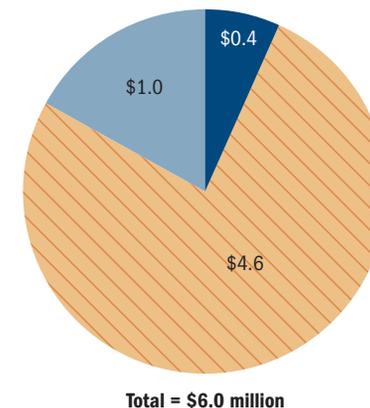


Figure D-32 DLA BRAC Restoration Budget by Cleanup Phase (millions)**†



* Due to rounding, subtotals may not equal fiscal year totals.
 † Does not include planning or compliance costs.

IRP CTC estimates are displayed in Figures D-33 and D-34. While the CTC projection at active sites for FY2007 is \$9.9 million greater than the previous year, it remains higher than FY2003 levels by \$70.4 million. The increase in the CTC at active installations after FY2003 is attributed to the use of Remedial Action Cost Engineering Requirements in the estimating process to satisfy environmental liabilities requirements. The BRAC CTC estimate declined to \$21.6 million.

Figure D-33 DLA ER CTC Trends*

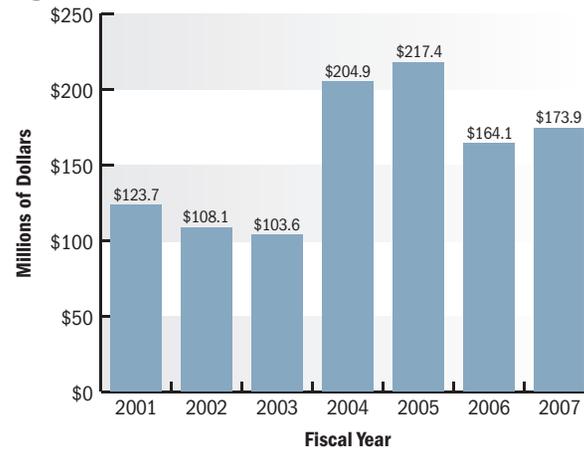
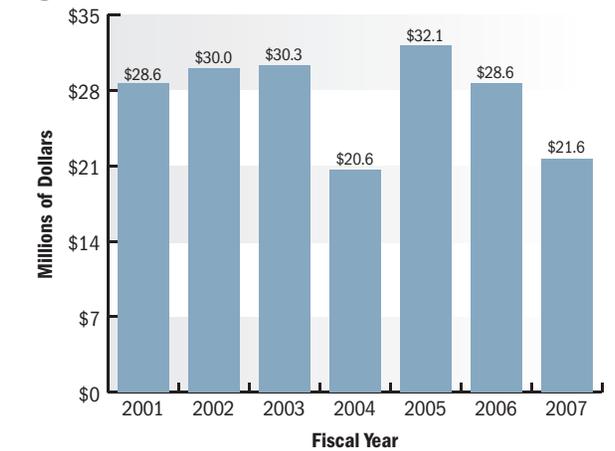


Figure D-34 DLA BRAC Restoration CTC Trends†**



*Funding represents site-level data and does not include management and support costs not directly attributable to specific sites.
 †Includes BRAC 2005 costs beginning in FY2007.

FUDS

In FY2007, the U.S. Army Corps of Engineers (USACE), which oversees the FUDS program, obligated \$262.8 million for restoration activities at FUDS properties: \$144.3 million and \$118.5 million for IRP and MMRP sites, respectively. USACE plans to invest \$278.9 million for restoration activities in FY2008 and request \$257.8 million in FY2009. Figure D-35 illustrates the FUDS ER funding levels for FY2001 through FY2009.

USACE designated 84 percent of its ER budget for investigations and cleanup actions, as shown in Figure D-36. The significant amount allocated to investigations is attributed to the large number of MMRP sites that require further site characterizations. Cleanup actions include interim actions, remedial designs, remedial actions, potential responsible party costs, and BD/DR costs. USACE used the remaining funds for LTM activities and program management.

Figure D-37 illustrates IRP and MMRP CTC trends at FUDS properties. Nearly half of DoD's MMRP sites reside on FUDS properties. The CTC estimate for these sites is more than \$13.0 billion. USACE expects remaining cleanup costs at IRP sites to be approximately \$3.2 billion, and continue to decrease as these requirements are completed.

Figure D-35 FUDS ER Restoration Budget Trends

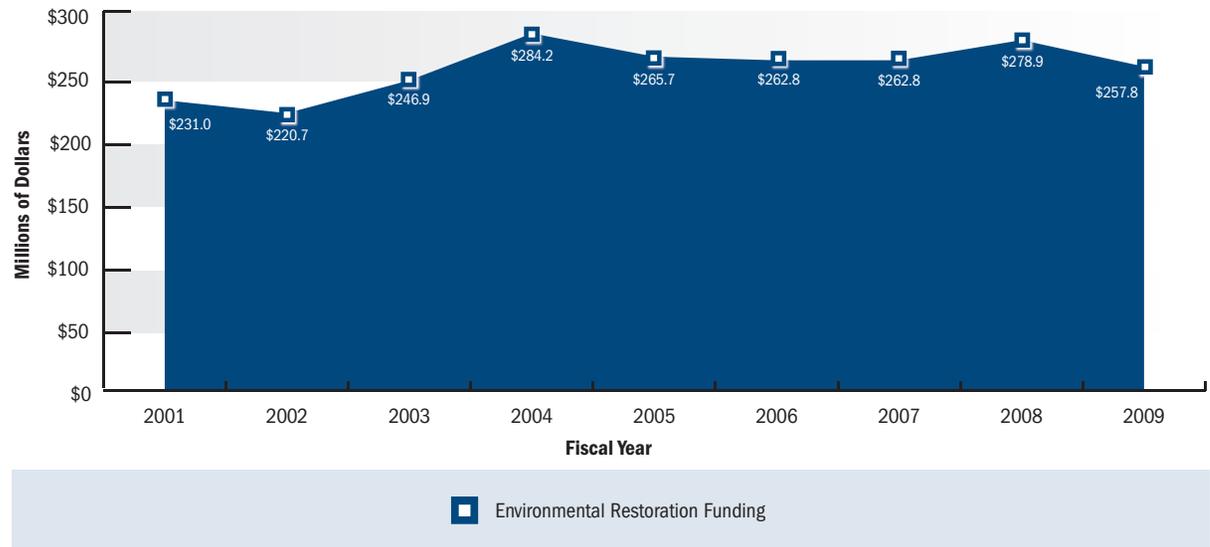


Figure D-36 FUDS ER Budget by Cleanup Phase (millions)**

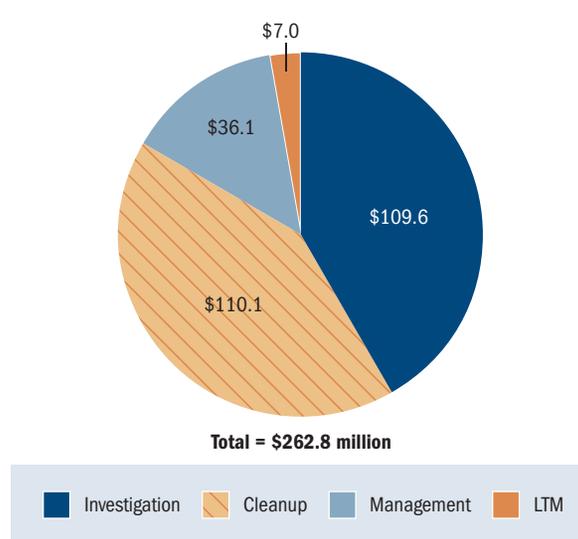
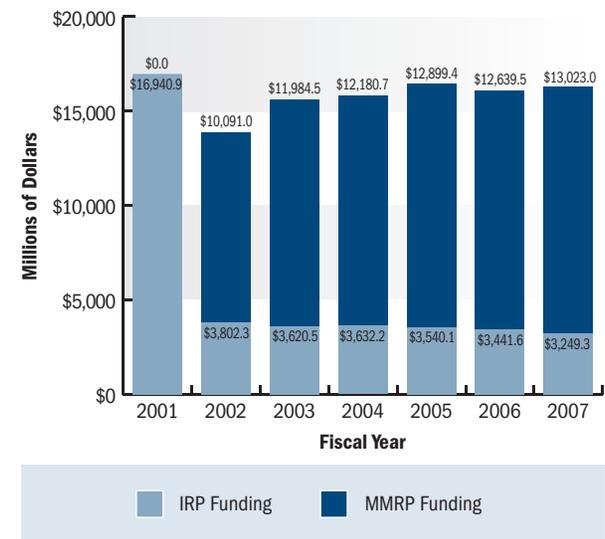


Figure D-37 FUDS ER CTC Trends**



* Due to rounding, subtotals may not equal fiscal year totals.

† Includes BD/DR costs of \$1.0 million.

‡ Funding represents site-level data and does not include management and support costs not directly attributable to specific sites.