Appendix D: Restoration Budget Overview

Budget

Over the past 10 years, 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.

The ER and BRAC accounts provide funding for three program categories: Installation Restoration Program (IRP), Military Munitions Response Program (MMRP), and Building Demolition/Debris Removal (BD/DR) Program. 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.

Progress Through Cleanup Phases

As IRP sites progress through the cleanup process, more of these sites complete investigations and advance to cleanup activities. Appropriately, funding trends mirror this site progress trend, where the proportion of IRP funding spent on DERP cleanup activity increases as the proportion of funding spent on investigation decreases.

Figure D-1						
DoD Restoration Budget Summary (millions)						

	FY2005 Actual	FY2006 Actual	FY2007 Estimated	FY2008 Requested
ER*	\$1,348.2	\$1,376.7	\$1,403.3	\$1,456.9
Army	\$401.3	\$395.3	\$413.8	\$434.9
Navy	\$265.9	\$295.9	\$304.4	\$300.6
Air Force	\$396.5	\$401.1	\$423.9	\$458.4
DLA	\$15.4	\$18.5	\$15.2	\$9.3
FUDS	\$265.7	\$262.8	\$242.8	\$250.2
Other Defense- Wide Programs	\$3.4	\$3.1	\$3.3	\$3.5
BRAC [†]	\$250.3	\$472.9	\$456.9	\$370.8
Army	\$95.0	\$101.4	\$54.6	\$78.9
Navy	\$102.5 [‡]	\$256.4	\$284.7	\$171.0
Air Force	\$148.8	\$110.0	\$111.5	\$117.1
DLA	\$6.5	\$5.0	\$6.1	\$3.7
Total [^]	\$1,598.5	\$1,849.6	\$1,860.2	\$1,827.7

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

[†] Funding shown includes IRP, MMRP, and management and support costs for all BRAC rounds. Funding shown does not include planning and compliance costs. Due to rounding, Component totals may not equal fiscal year totals.

[‡] Funding shown includes land sale revenue.

^ Total funding shown only represents Congressionally-appropriated funds and does not include land-sale revenue.

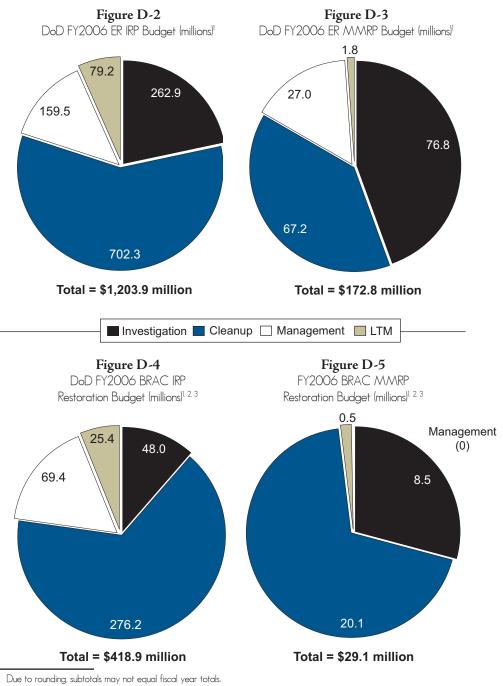
Upon formal creation of the MMRP in Fiscal Year (FY) 2001, the Department conducted an inventory to identify MMRP sites. As a result, many new sites that required funding were introduced into the DERP, most of which were in the investigation stages. This temporarily increased the proportion of DERP funding spent on investigation; however, the overall trend is expected to decline.

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. Fifty-eight percent of the FY2006 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 \$276.2 million, or 66 percent, of the FY2006 BRAC budget for the IRP on cleanup activities. Funding for ER and BRAC MMRP investigation activities is relatively larger than the same budgets for IRP, as the Department continues to characterize sites with potential MEC and MC hazards.

Relative Risk Reduction

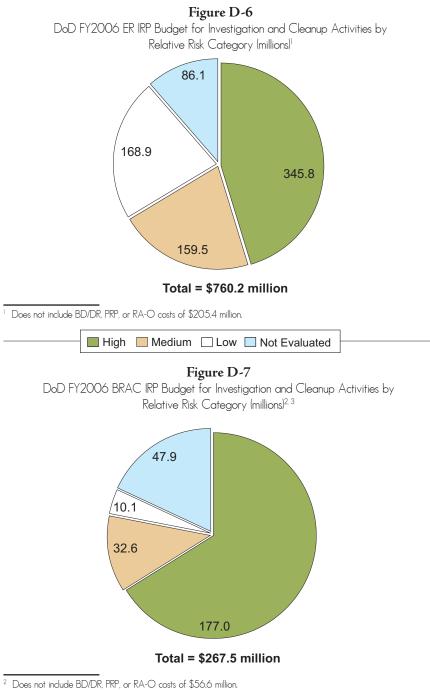
DoD gauges DERP progress through the program metric to address the "worst first" in site cleanup. Funding limitations require that DoD prioritize sites based on the risk the site poses to human health and the environment relative to other sites in the program. IRP sites are classified by relative-risk 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 FY2006 ER funding in the IRP on the remaining high relative-risk IRP sites, continuing its commitment to address all of these sites at active installations and FUDS by FY2007. As illustrated in Figure D-6, DoD spent \$345.8 million of the FY2006 ER IRP budget for investigation and cleanup activities on high relative-risk sites. Likewise, Figure D-7 demonstrates that DoD obligated \$177.0 million, or 66 percent, of the equivalent BRAC budget to high relative-risk IRP sites.



² Does not include BRAC 2005, planning, or compliance costs.

³ Department of the Air Force's BRAC IRP budget includes MMRP costs. Future reporting will separate BRAC IRP and MMRP funds.



³ Department of the Air Force's BRAC IRP budget includes MMRP costs. Future reporting will separate BRAC IRP and MMRP funds. 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.

Beginning in FY2007, DoD will report the relative risk to human health and the environment at MMRP sites based on results of the Munitions Response Site Prioritization Protocol. 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 Risk Assessment Code (RAC) currently used by the Department.

Cost-to-Complete Estimates

The Department also measures DERP progress using program cost-tocomplete (CTC) estimates, which are an estimation of anticipated costs necessary to complete restoration requirements. CTC estimates, 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. As such, the Department values CTC estimates as an important oversight and program management tool used to assess future funding needs and to determine if the Department is using funds effectively.

As DoD works to move sites through the CERCLA cleanup process and complete restoration requirements, the total CTC for the DERP declines. Figure D-8 illustrates breakouts of IRP and MMRP CTC estimates for ER and BRAC funding. FY2006 CTC estimates reflect anticipated costs from FY2007 through completion. As the MMRP matures and sites are further characterized, DoD's CTC estimates will continue to improve and provide a more refined picture of munitions response requirements.

Figure D-9 shows total CTC estimates for each Component. The FUDS program has the highest CTC estimates 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.

CTC Estimates by Fiscal Year for FY2007-Completion (millions) ¹								
	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	
ER	\$28,696.5	\$27,519.9	\$26,280.6	\$24,986.4	\$23,700.8	\$22,372.1	\$21,032.5	
IRP	\$10,909.1	\$9,905.8	\$8,857.1	\$7,876.2	\$7,024.4	\$6,217.7	\$5,554.2	
MMRP	\$17,787.4	\$17,614.1	\$17,423.5	\$17,110.2	\$16,676.4	\$16,154.4	\$15,478.3	
BRAC ²	\$3,895.9	\$3,511.0	\$3,207.7	\$3,045.1	\$2,837.1	\$2,645.2	\$2,444.0	
IRP	\$2,993.7	\$2,633.2	\$2,377.7	\$2,245.4	\$2,103.8	\$1,965.1	\$1,819.7	
MMRP	\$902.2	\$877.9	\$830.0	\$799.7	\$733.3	\$680.1	\$624.3	
Total	\$32,592.4	\$31,030.9	\$29,488.2	\$28,031.5	\$26,537.9	\$25,017.3	\$23,476.5	

Figure D-8

Figure D-9 CTC Estimates by Component for FY2007-Completion (millions)¹

	Army	Navy	Air Force	DLA	FUDS	Total
ER	\$5,176.8	\$2,606.8	\$4,667.6	\$164.1	\$16,081.1	\$28,696.5
IRP	\$2,144.7	\$1,987.4	\$3,171.3	\$164.1	\$3,441.6	\$10,909.1
MMRP	\$3,032.1	\$619.5	\$1,496.3	\$0.0	\$12,639.5	\$17,787.4
BRAC ²	\$1,324.0	\$1,519.8	\$1,023.5	\$28.6	\$0.0	\$3,895.9
IRP	\$523.7	\$1,417.9	\$1,023.5	\$28.6	\$0.0	\$2,993.7
MMRP	\$800.3	\$101.9	\$0.0	\$0.0	\$0.0	\$902.2
Total	\$6,500.8	\$4,126.6	\$5,691.2	\$192.8	\$16,081.1	\$32,592.4

¹ Funding represents site-level data and does not include management and support or other miscellaneous costs not directly attributable to specific sites.

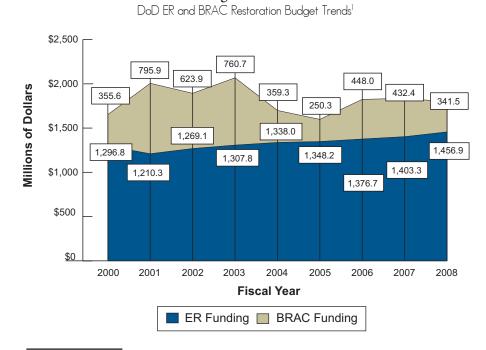
² Department of the Air Force's BRAC IRP budget includes MMRP costs. Future reporting will separate BRAC IRP and MMRP funds.

DoD

The Department is committed to protecting human health and the environment through the restoration of sites containing hazardous substances from past practices on DoD installations and FUDS properties. In FY2006, DoD invested over \$1.3 billion in ER funding for restoration activities at active installations and FUDS properties, as shown in Figure D-10. DoD invested an additional \$448.0 million for restoration activities at BRAC installations, which exclude planning, management, BRAC 2005 cleanup activities, and land sale revenue used by the Components to supplement BRAC restoration activities. The FY2006 BRAC restoration budget was \$197.7 million greater than the previous year.

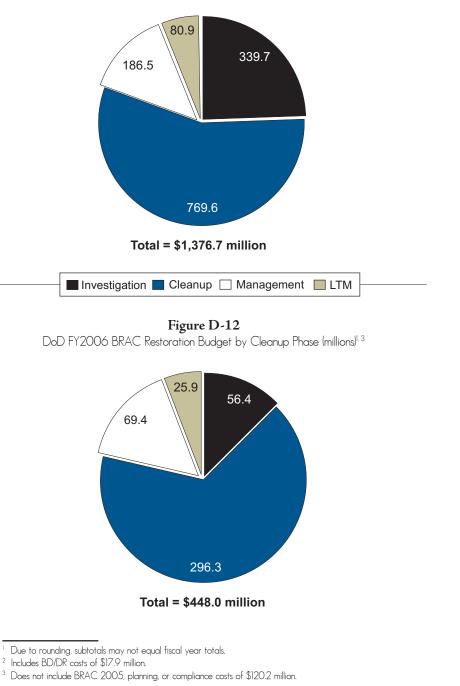
Figure D-11 illustrates the distribution of total DERP ER funds, which include funding for active installations and FUDS properties in both the

Figure D-10



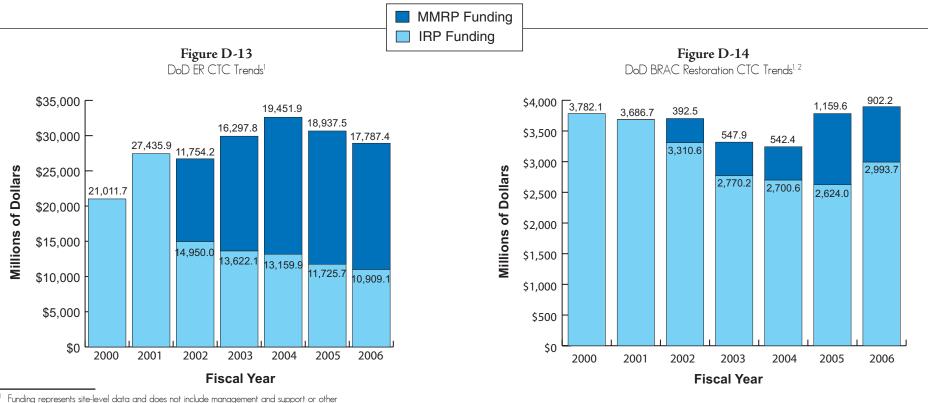
Does not include BRAC 2005, planning, or compliance costs; does include land sale revenue where appropriate.

 $\label{eq:Figure D-11} Figure \ D-11 \\ \ DoD \ FY2006 \ ER \ Budget \ by \ Cleanup \ Phase \ (millions)^{1.2}$



IRP and MMRP, across each stage of the restoration process. In FY2006, a majority of ER funding was invested in cleanup activities. Correspondingly, Figure D-12 shows the overall BRAC environmental funding. DoD obligated \$296.3 million, or 66 percent, of FY2006 BRAC funding to cleanup activities.

FY2006 CTC estimates reflect anticipated costs from FY2007 through completion. As shown in Figures D-13 and D-14, DoD's current CTC for active installations and FUDS properties was approximately \$28.7 billion, with \$10.9 billion for the IRP and \$17.8 billion for the MMRP. This represents a slight decrease in the CTC estimated in FY2005. The BRAC site-level CTC also increased slightly from \$3.8 billion in FY2005 to \$3.9 billion in FY2006, a difference of \$112.3 million. While the IRP attributed to the greatest BRAC CTC influx due to BRAC 2005, DoD reduced the BRAC MMRP CTC by \$257.4 million as it continues to improve characterization at MMRP sites.



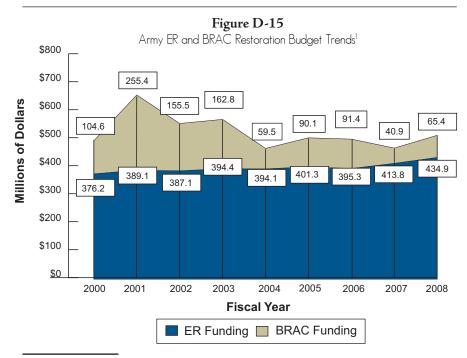
Funding represents site-level data and does not include management and support or other miscellaneous costs not directly attributable to specific sites.

² Department of the Air Force's BRAC IRP budget includes MMRP costs. Future reporting will separate BRAC IRP and MMRP funds.

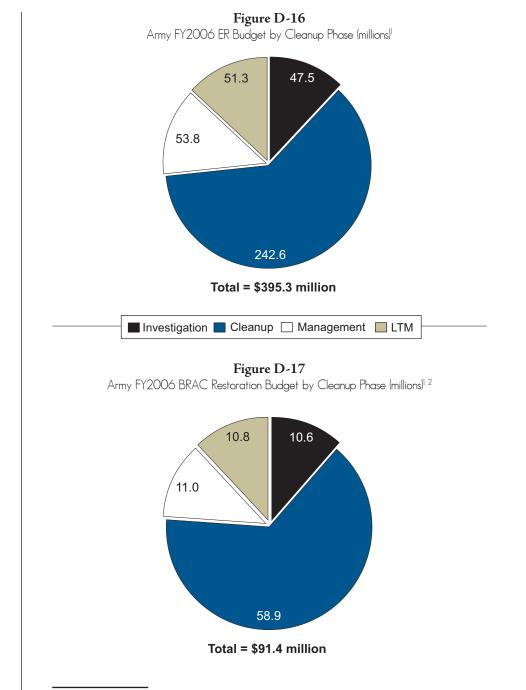
Army

In FY2006, the Army obligated \$486.6 million for restoration activities, a \$4.8 million increase from the FY2005 budget. Over 81 percent of funding, or \$395.3 million, was invested in restoration at active installations. The Army allocated \$378.8 million and \$16.4 million for IRP and MMRP activities at active installations, respectively. Funding for restoration at BRAC installations increased to \$91.4 million, compared to \$90.1 million in FY2005. Figure D-15 illustrates the Army's ER and BRAC restoration budget trends.

Of the overall Army ER budget, 61 percent of the funds were obligated for cleanup activities and 12 percent went toward investigation activities. The Army used the remaining funds for remedial action operations and LTM activities, as well as program management. The Army obligated an even greater proportion, 64 percent, of its BRAC restoration activities to cleanup activities. Army's ER and BRAC activities are profiled by cleanup phase in Figures D-16 and D-17.



Does not include BRAC 2005, planning, or compliance costs; does include land sale revenue where appropriate.

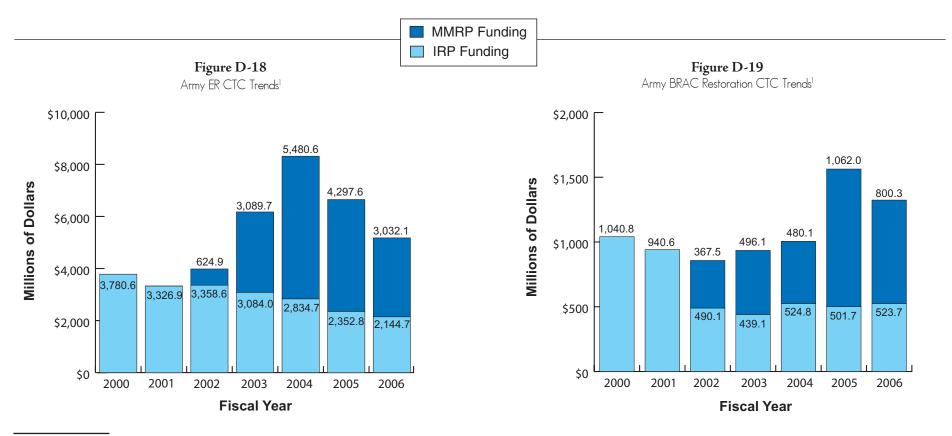


¹ Due to rounding, subtotals may not equal fiscal year totals.

² Does not include BRAC 2005, planning, or compliance costs of \$54.8 million.

The site-level CTC for restoration at Army's active installations, including IRP and MMRP, decreased from \$6.7 billion in FY2005, to \$5.2 billion in FY2006, as illustrated in Figure D-18. The IRP site-level CTC experienced a reduction of \$208.1 million, and the MMRP site-level CTC declined by \$1.3 billion. The Army's CTC for BRAC IRP and MMRP installations, decreased

from \$1.6 billion to \$1.3 billion, with the IRP component having increased from \$501.7 million to \$523.7 million. Similar to active installations, the MMRP site-level CTC for BRAC installations also decreased significantly from \$1.1 billion to \$800.3 million as a result of more complete site characterizations. Army's BRAC CTC trends are shown in Figure D-19.

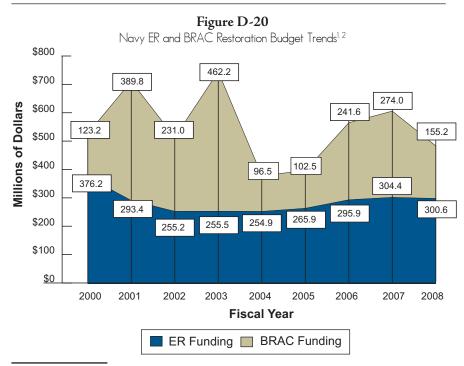


¹ Funding represents site-level data and does not include management and support or other miscellaneous costs not directly attributable to specific sites.

Navy

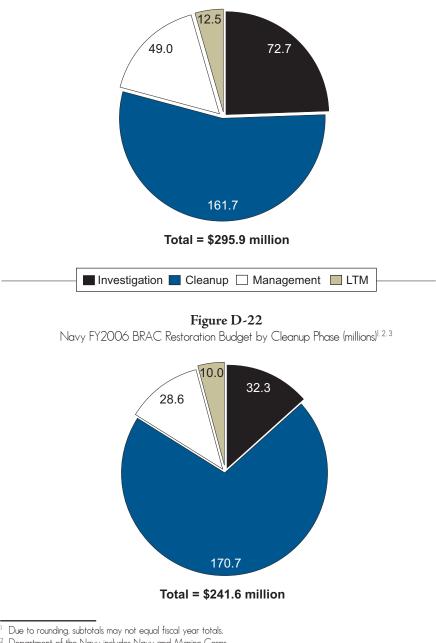
The Department of the Navy's (DON's) restoration budget, which includes ER and BRAC funds for the Navy and Marine Corps, totaled approximately \$537.5 million in FY2006. DON obligated \$295.9 million to ER installations in FY2006, \$253.3 million for IRP and \$42.6 million for MMRP. The FY2006 BRAC restoration budget was \$241.6 million. Historical and projected funding trends for FY2000 through FY2008 are depicted in Figure D-20.

Figures D-21 and D-22 illustrate DON's ER and BRAC funding distributions by CERCLA restoration phases and program management. Approximately 59 percent of active site-level costs in FY2006 were allocated to design work, interim or final cleanup actions, operations and maintenance, and LTM, while 25 percent of funding was spent on investigation activities. DON obligated \$170.7 million, or 71 percent, to cleanup activities at installations identified during BRAC rounds I-IV. In



Does not include BRAC 2005, planning, or compliance costs; does include land sale revenue where appropriate. ² Department of the Navy includes Navy and Marine Corps.

Figure D-21 Navy FY2006 ER Budget by Cleanup Phase (millions)^{1, 2}



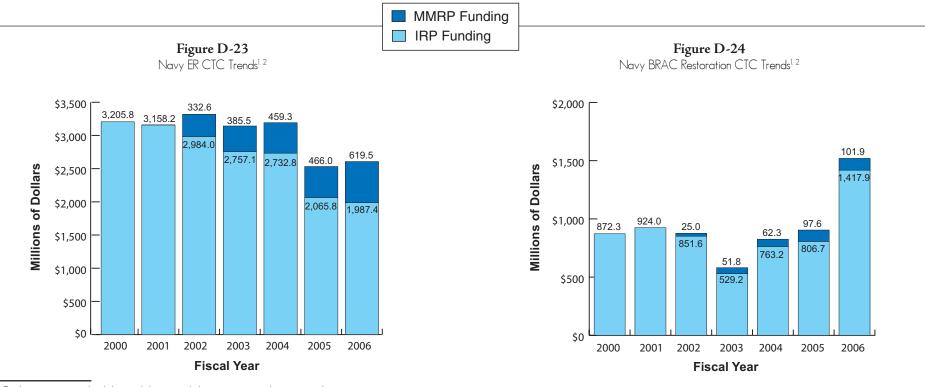
² Department of the Navy includes Navy and Marine Corps.

³ Does not include BRAC 2005, planning, or compliance costs of \$37.9 million.

FY2006, DON invested only 12 percent of its BRAC budget in management costs for those installations.

CTC estimates for both ER and BRAC sites increased to \$2.6 billion and \$1.5 billion, respectively, as shown in Figures D-23 and D-24. While the MMRP contributed to most of the rise in the CTC at active installations,

BRAC CTC estimates increased primarily as a result of IRP funding. The total CTC for the IRP at DON active and BRAC installations is estimated at \$3.4 billion, not including program management costs. Correspondingly, MMRP completion costs at active and BRAC installations for the DON are estimated at \$721.4 million, not including program management costs.



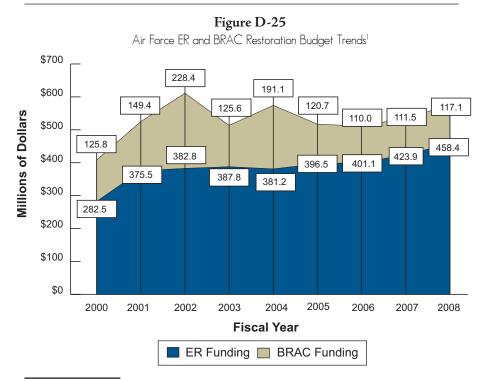
¹ Funding represents site-level data and does not include management and support or other miscellaneous costs not directly attributable to specific sites.

² Department of the Navy includes Navy and Marine Corps.

Air Force

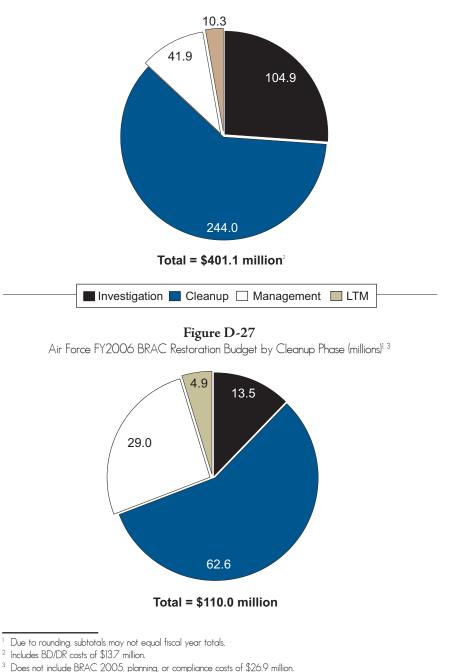
The Air Force obligated \$511.1 million for installation restoration activities in FY2006. Active obligated funds totaled \$401.1 million, while BRAC obligated funds totaled \$110.0 million. In FY2006, the Air Force invested \$387.9 million in IRP sites and \$13.1 million in MMRP sites at active installations. The Air Force plans to increase the ER budget annually through FY2008 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 break down of ER and BRAC funding by cleanup phase, respectively. Cleanup activities and LTM, constituted \$254.3 million of Air Force's budget at active installations. Of the overall BRAC budget, the Air Force allocated \$62.6 million, or 57 percent, to cleanup activities.

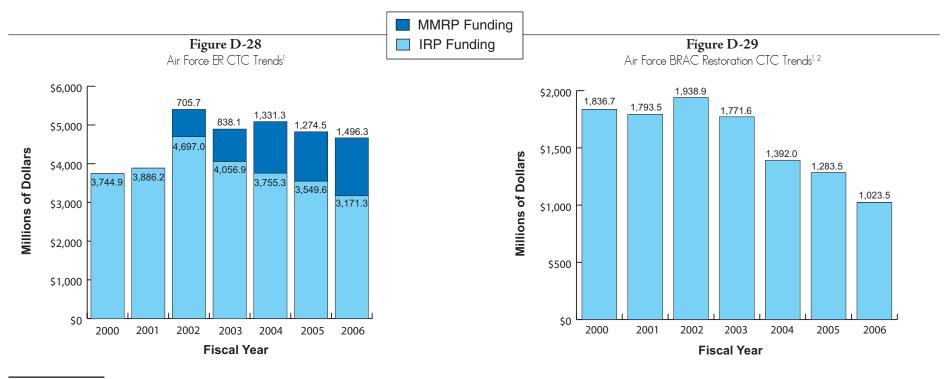


Does not include BRAC 2005, planning, or compliance costs; does include land sale revenue where appropriate.

 $\label{eq:Figure D-26} Figure \ D-26$ Air Force FY2006 ER Budget by Cleanup Phase (millions) $^{1.2}$



As of the end of FY2006, the active Air Force's site-level CTC was approximately \$4.7 billion, with \$3.2 billion for IRP sites and \$1.5 billion for MMRP sites. This \$156.5 million decrease from FY2005 was due to continued cleanup progress at IRP sites. In addition, the Air Force reduced the BRAC site-level CTC to \$1.0 billion in FY2006. The BRAC CTC reductions are attributable both to cleanup progress made in FY2006, resulting in fewer open sites, and significant progress made in reducing costs. This trend will encounter new challenges with emerging contaminants of concern and tighter regulatory standards anticipated in the future. The CTC trends for active and BRAC installations are shown in Figures D-28 and D-29, respectively.



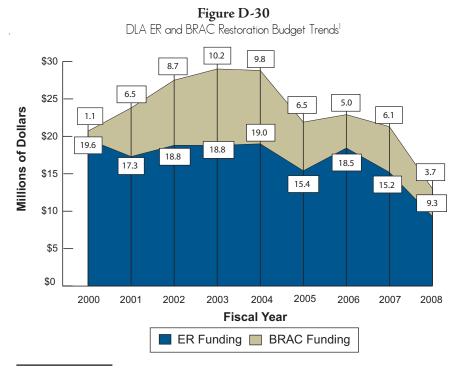
¹ Funding represents site-level data and does not include management and support or other miscellaneous costs not directly attributable to specific sites.

² Department of the Air Force's BRAC IRP budget includes MMRP costs. Future reporting will separate BRAC IRP and MMRP funds.

DLA

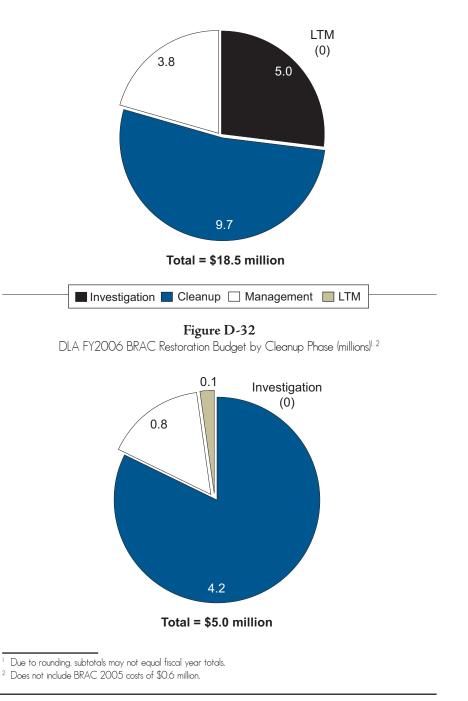
Over the past seven years, the Defense Logistics Agency (DLA) has continued to receive stable funding for both active and BRAC restoration. During FY2006, DLA obligated \$24.1 million for restoration activities, 10 percent more funding than FY2005. DLA experienced a brief reduction in funding during FY2005 because the Restoration Program was delayed to allow for remedial process optimization. The FY2006 budget included \$18.5 million for active installation restoration and \$5.0 million for BRAC restoration activities. However, projections for FY2007 and FY2008 suggest budget reductions to \$21.2 million and \$13.0 million, respectively, and are due to DLA's progress towards restoration goals and reducing the amount of cleanup necessary. 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 \$18.5 million



¹ Does not include BRAC 2005, planning, or compliance costs; does include land sale revenue where appropriate.

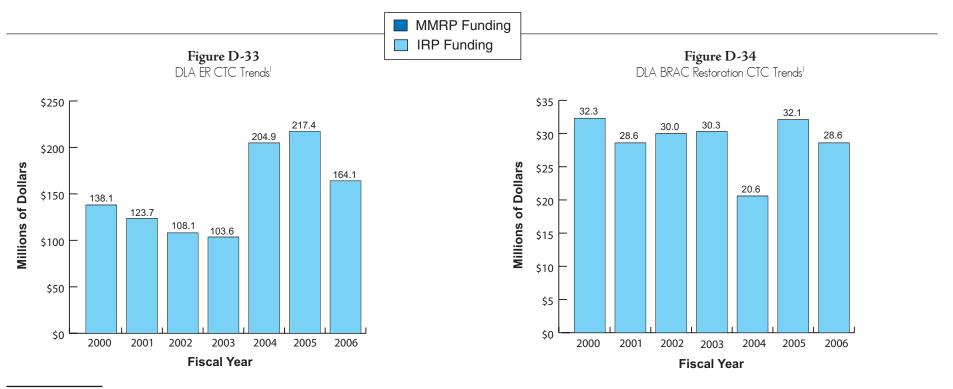
Figure D-31 DLA FY2006 ER Budget by Cleanup Phase (millions)¹



obligated to active installations, DLA allocated \$9.7 million, or 52 percent, for cleanup activities and \$5.0 million, or 27 percent, for site investigations. The remaining funds were obligated for LTM and program management. For the BRAC program, DLA obligated \$4.2 million, or 84 percent, for cleanup activities. Figures D-31 and D-32 show the allotment of funding for the ER and BRAC programs by cleanup phase.

IRP CTC estimates, as displayed in Figures D-33 and D-34, indicate that additional funding will be needed at active and BRAC installations. While

the CTC projection at active sites for FY2006 is \$53.3 million less than the previous year, it remains higher than FY2003 levels at \$164.1 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 also declined to \$28.6 million. At BRAC installations, a lack of funding would extend cleanup time requirements and inhibit property transfer for reuse, slowing job creation and economic recovery in the areas most affected by base closings.

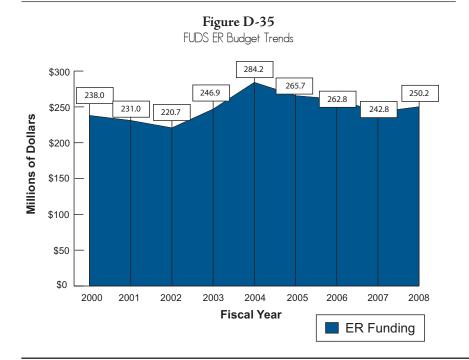


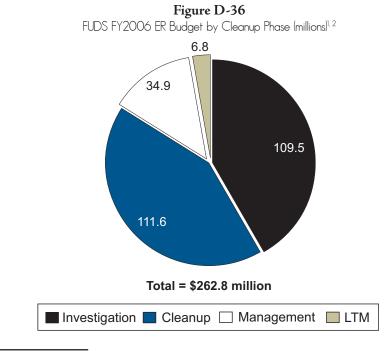
¹ Funding represents site-level data and does not include management and support or other miscellaneous costs not directly attributable to specific sites.

In FY2006, the U.S. Army Corps of Engineers (USACE), which overseas the FUDS program, obligated \$262.8 million for restoration activities at FUDS properties; \$162.1 million and \$100.6 million for IRP and MMRP sites, respectively. USACE plans to invest \$242.8 million for restoration activities in FY2007 and request \$250.2 million in FY2008. Figure D-35 illustrates the FUDS ER funding levels for FY2000 through FY2008.

USACE designated 84 percent of its ER budget for investigations and cleanup actions, as shown in Figure D-36. The significant amount of 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. 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 all MMRP sites reside on FUDS properties. Therefore, the CTC estimate for these sites remains over \$12.6 billion. USACE expects remaining cleanup costs at IRP sites to be approximately \$3.4 billion, and continue to decrease.





Due to rounding, subtotals may not equal fiscal year totals.
Includes BD/DR costs of \$2,9 million.

