

FUDS RESTORATION STATUS AND PROGRESS



The FUDS Program continues to make progress characterizing and cleaning up contamination related to the military's past activities. We are applying our best expertise and technology to protect public health, safety and the environment. I am especially proud of our progress in developing our inventory of munitions sites. The FUDS program can only be successful if we enhance our communication with regulatory agencies, tribes, and the public, and we're working to do just that through the statewide management action plan process and increasing public access to FUDS information.

— **Raymond J. Fatz, Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational Health**

The Department of Defense (DoD) is responsible for environmental restoration of properties that it formerly owned, leased, possessed, or operated. Such properties are known as Formerly Used Defense Sites (FUDS). The Army is the executive agent for the FUDS program, and the U.S. Army Corps of Engineers (USACE) is the program's executing agent and manager. Because DoD no longer owns or uses the FUDS properties, a USACE district commander serves as each property's installation commander, executing environmental restoration projects and fulfilling associated responsibilities.

The scope and magnitude of the FUDS program are significant, with 9,331 properties identified for potential inclusion in the program. Information about the origin and extent of contamination, land transfer issues, past and present property ownership, and program policies, must be evaluated before DoD considers a property eligible for the FUDS program. At eligible FUDS properties, environmental restoration procedures are similar to those at active DoD installations.

Organization and Management

DoD is responsible for developing overall FUDS program policy and budget guidance, developing and defending the budget, and reviewing program performance. The Secretary of the Army is the executive agent of the FUDS program and, through the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health (DASA(ESOH)), supplements DoD policies and oversees the program (reference FUDS Hierarchy Chart on page 184). The Director of Environmental Programs within the Office of the Assistant Chief of Staff for Installation Management establishes general program policy and guidance and, in concert with DASA(ESOH), approves the annual work plan and program priorities. USACE headquarters is responsible for FUDS program management and execution. The FUDS mission within USACE is executed by the field organization, which consists of seven geographic military divisions; 22 military districts, with necessary support from civil works districts; one hazardous, toxic, and radioactive waste (HTRW) center of expertise; and one ordnance and explosives center of expertise.

Goals and Priorities

The goal of the FUDS program is to reduce risk to human health, human safety, and the environment resulting from past DoD activities at FUDS properties. The pie charts on the following page illustrate project status. Meeting environmental restoration goals for FUDS properties depends on:

- ✦ Consistent communication and coordination
- ✦ Partnerships
- ✦ Community involvement.

USACE sets priorities for the FUDS program on the basis of an evaluation of relative risk and other factors, such as legal agreements, stakeholder concerns, and economic considerations.

Focus on the Facts 

FUDS

IN FISCAL YEAR 2002 (FY02)...

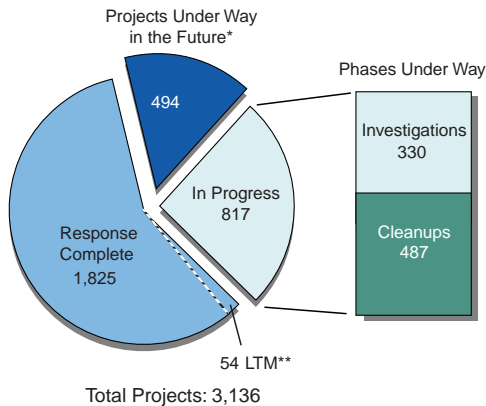
- ◆ The FUDS program experienced a net increase of 178 projects.
- ◆ Preliminary eligibility assessments were completed at eight properties.
- ◆ Remedy in place (RIP) or response complete (RC) status was achieved for 124 projects. RIP/RC attainment is projected in the bar chart on page 185.

THROUGH FY02...

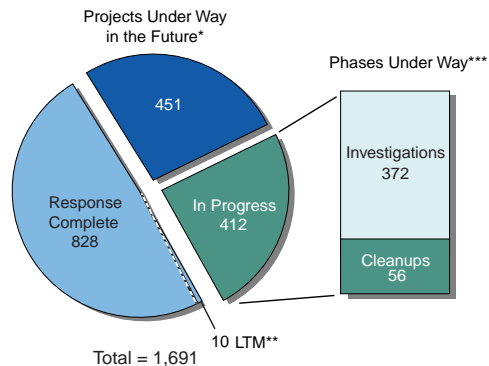
- ◆ 2,823 properties were identified as containing a hazard requiring an environmental response action.*
- ◆ 98 percent, or 9,127 of the 9,331 properties, have been evaluated through the preliminary eligibility assessment process.
- ◆ 4,827 potential cleanup projects (see pie charts below) have been identified on the 2,823 eligible properties, and 2,653 of these projects have been completed.
- ◆ The total cost for completing the remaining 2,174 projects is estimated at approximately \$14 billion.

*Note: Properties potentially identified as FUDS may not necessarily contain FUDS eligible projects (for instance, no hazards or DoD hazards may be determined to be at the property). Thus, not all identified potential properties are ultimately determined to be FUDS eligible properties. Of the initial 9,331 properties identified for potential inclusion in the program, current indications are that less than one-third will require DoD environmental response.

FUDS Project Status
(as of September 30, 2002)



FUDS MMRP Project Status
(as of September 30, 2002)

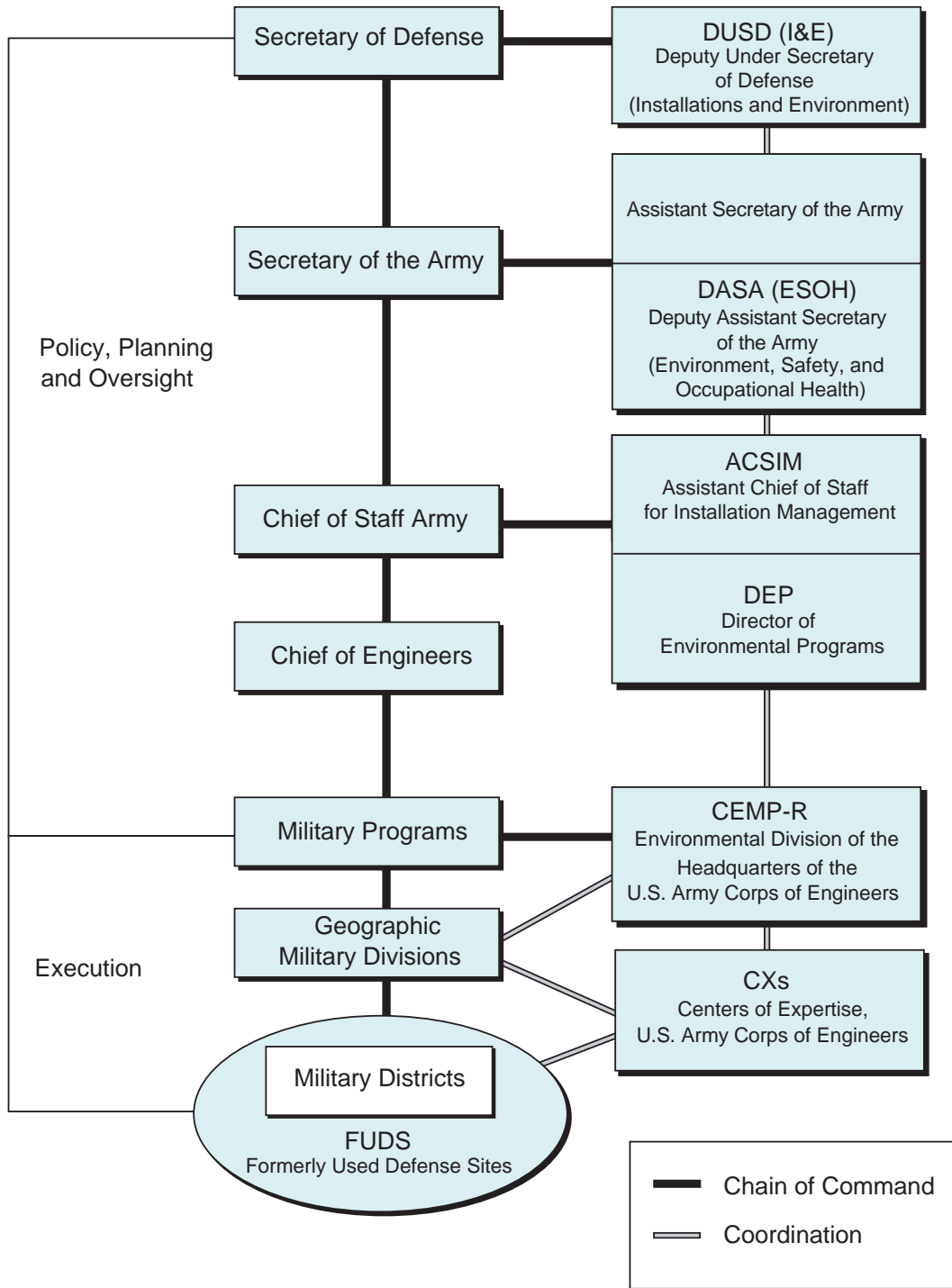


*Includes projects with future preliminary assessment starts planned and cleanup projects that are between phases.

**Long-term management (LTM) is a subset of response complete.

***Phases Under Way may not add up to Sites in Progress because some projects have multiple phases underway.

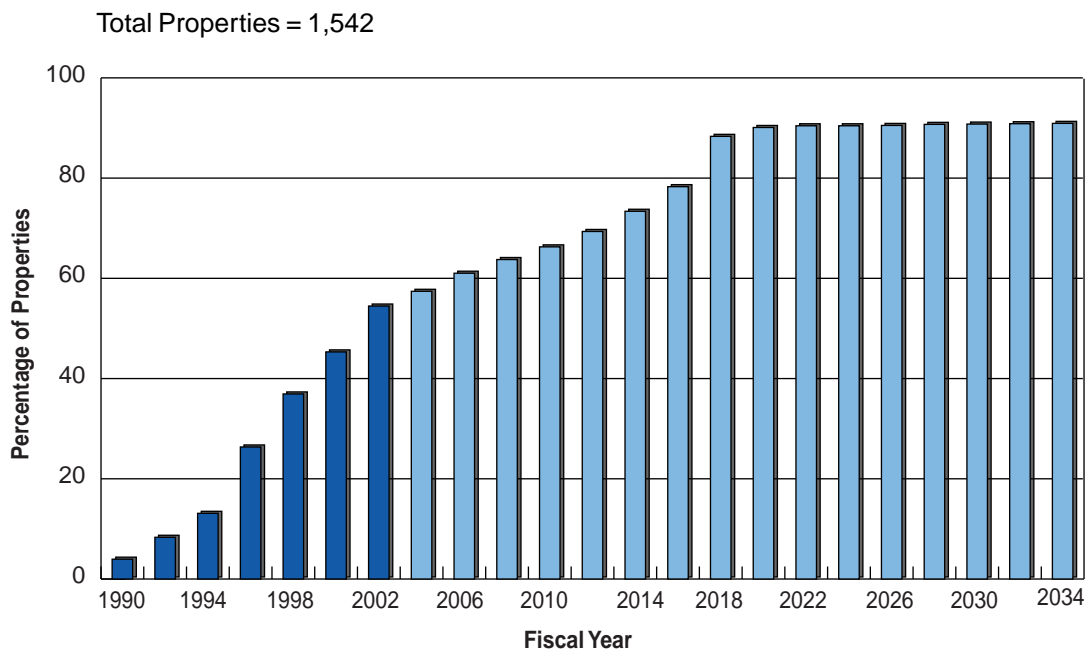
FUDS Program Hierarchy Chart



Program Accomplishments

USACE continues to emphasize executing projects, restoring FUDS properties, and ensuring that regulators and the public are active participants in the environmental restoration process. USACE continues to work toward evaluating potentially FUDS-eligible sites, as seen in the figures on the next page. Project execution figures for FY02 demonstrate that the FUDS program is making significant progress. 2,653 FUDS projects had reached the RC milestone as of September 30, 2002 (see bar chart next page). Cumulative interim actions are also illustrated in a bar chart on the following page.

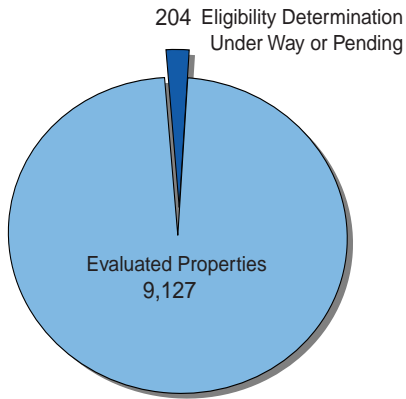
FUDS Properties Achieving Final Remedy in Place or Response Complete
(cumulative and projected, FY90 through completion)*



*This graph does not show FUDS properties as reaching 100 percent remedy in place or response complete because completion dates have not been determined for some properties. This graph does not include military munitions response, building demolition and debris removal, potentially responsible party, or No DoD Action Indicated properties or projects.

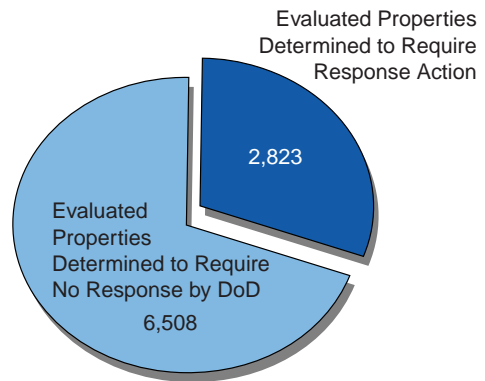
FUDS Program Eligibility Status of Potential FUDS Properties

(as of September 30, 2002)

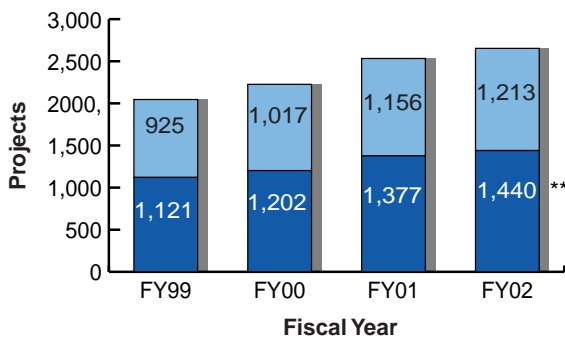


Response Action Status at Evaluated FUDS Properties

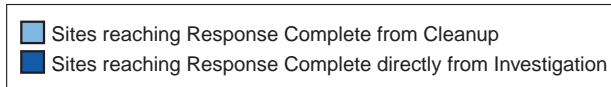
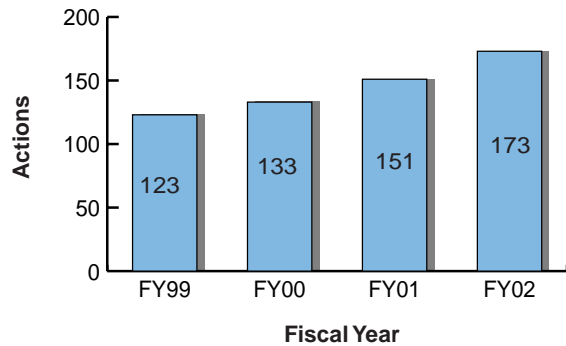
(as of September 30, 2002)



FUDS Projects with Response Complete*



Cumulative Interim Actions Completed at FUDS*



* FY99 through FY01 totals have been updated since the previous Annual Report to reflect new and revised data as of FY02.

**Includes 12 sites that had IRAs conducted prior to the completion of the studies.

Management Initiatives and Improvements

In order to address regulatory and community concerns more effectively, the FUDS Improvement Working group has established several management initiatives. One initiative that continued during FY02 has been the development of state-wide Management Action Plans (MAPs). In FY02, nine states began the MAP process, including Alaska, Arizona, Massachusetts, Missouri, North Carolina, South Carolina, Texas, Virginia, and Wyoming. Alaska, Arizona, Missouri, and Wyoming all completed their state-wide MAPs in FY02.

Developing state-wide MAPs brings together the FUDS project managers with not only state and federal regulators, but also tribal governments, other interested property owners, and community members. These MAPs include detailed information for each active FUDS property in that state as well as current status, future activities, prioritization, and budget workplans. Providing this information helps ensure that regulatory agencies and interested parties are included in the project prioritization process within those states. Building upon the success of this process, six additional states will work with USACE in developing MAPs in FY03.

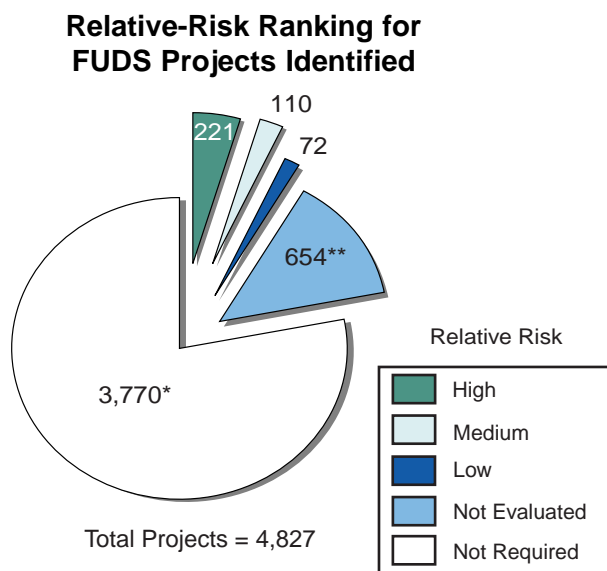
Another initiative has been the revision of the Formerly Used Defense Sites Program Policy (also known as the FUDS Program Manual) and its conversion to an Engineer Regulation. The Engineer Regulation (ER 200-3-1: FUDS Program Policy) will incorporate new DoD policy guidance, comments provided by the U.S. Environmental Protection Agency, the Association of State and Territorial Solid Waste Management Officials, and new program policies developed by the FUDS Improvement Working group. USACE received and reviewed more than 2,500 comments on the ER, many of which were incorporated into the new document. Also included in the new ER are recommendations received as a result of General Accounting Office audits of the FUDS Program. USACE expects the new ER to be released in FY03.

Relative-Risk Implementation

New projects are continually being discovered and added to the FUDS program. USACE strives to evaluate as many HTRW projects as possible for assessing the relative risk to human health and the environment. USACE uses ratings of relative risk to human health, human safety, and the environment for HTRW and MMRP projects, along with other management factors, such as stakeholder concerns, to aid in sequencing work during FUDS planning, programming, budgeting, and project execution. At the end of FY02, 43 percent of the 1,145 total Installation Restoration program (IRP) projects no longer required relative-risk evaluation because they had achieved either RIP or RC status. Another 35 percent of the eligible IRP projects had relative-risk ratings. The remaining 22 percent of the eligible IRP projects that are ready for site inspection require future funding for data collection and relative-risk evaluation. The adjacent relative-risk ranking figure summarizes the number of sites in each category. For containerized HTRW (CON/HTRW) projects, removal of abandoned underground storage tanks, transformers, and 55-gallon drums have proven to be the most appropriate and cost-effective response. USACE has completed response actions for 69 percent of the 1,312 eligible CON/HTRW projects. The remaining 31 percent of

CON/HTRW projects have removal responses under way or require future funding for necessary removal responses.

USACE also evaluates Military Munitions Response program (MMRP) projects for relative risk to human safety. MMRP assessments consist of a hazard severity assessment and a hazard probability assessment. Both are based on the best available information from record searches, reports of explosive ordnance disposal teams, field observations,



*Includes building demolition/debris removal, ordnance and explosives waste, and potentially responsible parties/HTRW projects.

**Includes CON/HTRW projects.

Focus on the Field**FUDS****One for the Books: Former Schenectady Army Depot Cleanup Paves Way for Construction of School Bus Garage**

When the Guilderland Central School District of Guilderland, New York, began constructing a new school bus garage on land that was once a part of the former Schenectady Army Depot, construction workers soon discovered buried discarded Army materiel during the excavation. Although historical files and aerial photographs did not indicate that the former depot conducted operations in its Voorheesville Area, school district officials, concerned about the potential danger of the items as well as the potential delay in the progress of the bus garage's construction, notified the proper authorities right away.

The U. S. Army Corps of Engineers (USACE) team responded to the site within 24 hours. The New York State Departments of Environmental Conservation and Health and Guilderland School District representatives were on-site to discuss how to proceed with the cleanup operation. After the initial evaluation, the team was expanded to include the New York USACE District Project Manager, the USACE Omaha District, the USACE Technical Escort Unit, and the U.S. Army Center for Health Promotion and Preventative Medicine. Shortly thereafter, USACE began remediation efforts and conducted additional investigative work to ensure that no other Army items would be found on the school district's property. The team also coordinated the removal effort so that construction of the garage could continue during site remediation.

To make sure that the public was aware of project, the site team consulted the community co-chair of the local Restoration Advisory Board (RAB) regarding the team's findings and plans. Local newspapers were also notified that USACE would take responsibility for the removal of the items.

Completed in November 2002, the prompt execution of this project kept the Guilderland School District from encountering costly construction delays or canceling the school bus garage project. The partnering efforts established with the RAB, state regulatory agencies, and other U. S. Army support organizations will serve to benefit future investigation and remediation efforts planned for the former depot and at other New York State formerly used defense sites.

interviews, and actual measurements. Of the 1,691 eligible MMRP projects in the FUDS program, 828 have reached RC status. Risk assessment codes have been assigned for 840 of the remaining 863 MMRP projects to indicate their potential impact on human safety.

MMRP Highlights

In FY02, USACE continued its inventory and cost estimating activities for MMRP sites on those FUDS properties currently identified as potentially containing unexploded ordnance (UXO), discarded military munitions, or munitions constituents. USACE began the inventory in FY00, pursuant to the Army's Range Inventory Program, and has been collecting site-specific data needed to ascertain the scope of the MMRP challenge on FUDS. During FY02, USACE completed most of the outstanding Archives Search Reports on MMRP properties, collecting detailed site-specific historical information to incorporate into the range inventory data.

USACE has reported the results of its initial MMRP inventory data (see Appendix C) and has used the data to calculate a site-level cost-to-complete estimate for each MMRP property. Many of the FUDS projects reported as MMRP sites have reached RC status, having been reviewed and found to pose a negligible ordnance and explosive threat (e.g., the ranges were never used or they were only used for small arms practice). Cost estimates were prepared centrally by one of USACE's Centers of Expertise, which consistently applied assumptions about various cleanup scenarios based on USACE's ordnance cleanup experience. Costs were calculated using the accredited, parametric cost model *Remedial Action Cost Engineering and Requirements (RACER)*. During FY02, USACE modified its environmental data reporting system to accommodate newly-required MMRP data fields and began collecting the data, in accordance with the September 2001 *Management Guidance for the Defense Environmental Response Program*.

With more than 1150 properties (some of which contain multiple ranges), the initial FUDS MMRP inventory represents a daunting financial and community involvement requirement. USACE's next steps in further developing the FUDS MMRP include identifying additional FUDS properties not included in the initial inventory that need to be added; initiating a process to develop consensus with regulatory agencies and tribes regarding MMRP projects that have been determined to require no DoD action (about 50 percent of the sites); and developing plans for implementing DoD's MMRP site prioritization protocol.

Focus on the Field



FUDS

Getting the Lead Out—Army Led Effort to Remove Lead-contaminated Soil Results in a Savings of \$1.6 million

During the expansion project for the Point Vicente Interpretative Center, a popular public environmental education and recreation site located in Rancho Palos Verdes, California, workers discovered elevated levels of lead in the soil. The grounds where the contaminated soil was found once served as an Army rifle range.



Point Vicente Interpretive Center.

Although environmental concerns such as the discovery of the endangered blue butterfly arose during the site remediation, the remediation project was completed ahead of schedule and under budget. According to the U.S. Army Corps of Engineers' project manager Tawny Tran, "The major reason for the project's success thus far has been the close partnership among the federal, state and local agencies, designers, and cleanup contractors during the planning and execution phases of the remediation."

To encourage public awareness of the remediation project before it began, the project manager briefed the city council. Additionally the project team participated in "Whale of a Day," an annual event marking the beginning of whale-watching season, providing a presentation booth, displays, information for distribution, and newspaper and television interviews.

As an education and recreational resource, the Point Vicente Interpretative Center is an important part of the community. A point that was not lost by Rancho Palos Verdes Mayor John McTaggart, when he stated, it is "the most valuable asset the city owns."

Joan Barry, president of Docents of Los Serenos de Point Vicente, noted, "A lot of our visitors are kids from the inner city, some of whom have literally never seen the ocean before. Their visit here is their first time."

Innovative Technology

USACE established an Environmental Innovative Technology Program as described in ER 200-1-1, "Policy and General Requirements for the Environmental Innovative Technology Program", dated May 30, 2000. In continued support of this policy, Innovative Technology Advocates (ITAs) were identified at the HTRW Center of Expertise, Omaha, Nebraska; 18 USACE districts; Engineering, Research and

Development Center, Vicksburg, Mississippi; and the Huntsville Engineering and Design Center. The ITA mission is to inform, encourage, promote, and support the use and development of innovative technology for environmental investigation and remediation. Specifically, the ITAs collaborate at three levels—interagency (nation-wide), intra-agency (USACE-wide), and locally (District) to facilitate the transfer of innovative technology information to potential technology users and developers. During FY02, the ITAs focused their efforts on training and guidance for innovative site characterization utilizing the “Triad Approach,” which consists of systematic planning, real time analytical techniques, and dynamic workplans. In addition, the ITAs compiled information regarding the characterization, environmental fate and transport, and remediation of explosive residues resulting from the production, handling, and use of ordnance.

An example of USACE’s continued efforts in developing innovative technology was the multi-sensor towed geophysical array. USACE and its contractor teamed to successfully develop a multi-sensor towed geophysical array that deploys both total field magnetometers and EM-61 coils on a common nonmetallic platform. The EM-61 is a standard geophysical instrument widely used to detect military munitions and other metallic objects. It uses different principles from those of a magnetometer (a different kind of geophysical instrument also used to detect military munitions and other metallic items). This newly developed technology uses electronics that interleave the data, sampling the magnetometers only when the EM pulse has died down. For the first time, this allows the magnetometer and EM-61 data to be collected on a single towed platform in a single survey pass without the noise and degradation usually associated with magnetometers operating in close proximity to EM-61 coils. Software allows both streams of data to be viewed and analyzed simultaneously, rather than forcing the user to choose only one data stream. With this new platform both can be used simultaneously, providing two data sets for the price of one, and a higher quality geophysical survey.

The system was recently demonstrated at the Standard UXO Technology Demonstration Site at Aberdeen Proving Ground, Maryland. The project was jointly funded by FUDS Ordnance and Explosives (OE) Innovative Technology for process evaluation and transfer aspects and DoD’s Environmental Security Technology Certification Program for the actual performance of the field work.

Outreach

In FY02, USACE continued its community relations efforts, ensuring that the public was made aware of the FUDS program and of opportunities to participate in the environmental restoration process.

USACE continues to make every effort to establish Restoration Advisory Boards (RABs) at FUDS properties where there is sufficient community interest, but it recognizes that establishing RABs is not always feasible for every property or project. USACE uses a variety of other communication tools, including—Web sites, newsletters, fact sheets, and open houses, to ensure public involvement at those properties where RABs are not feasible.

The FUDS program currently has 41 active RABs. During FY02, two new RABs were established and none were disbanded.

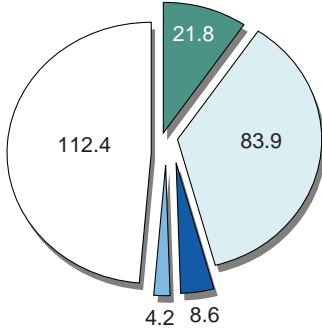
Funding

In FY02, USACE obligated \$220.7 million for environmental restoration activities at FUDS properties. The FUDS Environmental Restoration Funding Profile charts on the following page illustrate funding levels for FY01 through FY04. Cost-to-complete funding trends are illustrated in the accompanying bar chart. The decreases on many large MMRP properties are due to the military munitions response model update of RACER 2001. The large acreage projects that were previously estimated assuming a constant density of military munitions over the entire cleanup area created significantly inflated costs for these properties. The RACER model has been modified and now does not assume a constant density over the entire response area. Therefore, projects with large cleanup areas have decreased accordingly.

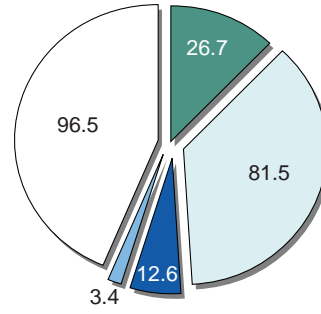
USACE management and support costs for the FUDS program were approximately 12.1 percent of total program costs, meaning that 87.9 percent of the environmental program's dollars went directly toward project execution at USACE districts.

FUDS Environmental Restoration Funding Profile
(in millions of dollars)

FY01 FUDS Funds Obligated
Total = \$231.0 million

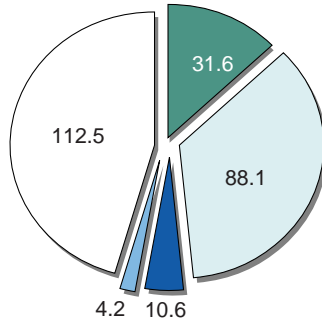


FY02 FUDS Funds Obligated
Total = \$220.7 million

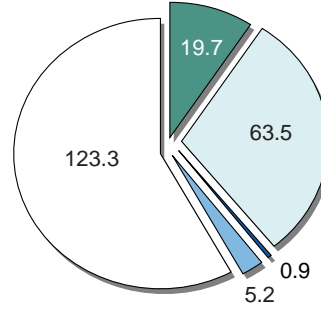


■ Management
■ Investigation
Cleanup Categories
■ Interim Action
■ Design
■ Cleanup*
*Includes estimated LTM costs, PRP, and BD/DR costs

FY03 FUDS Execution Planned
Total = \$246.9 million

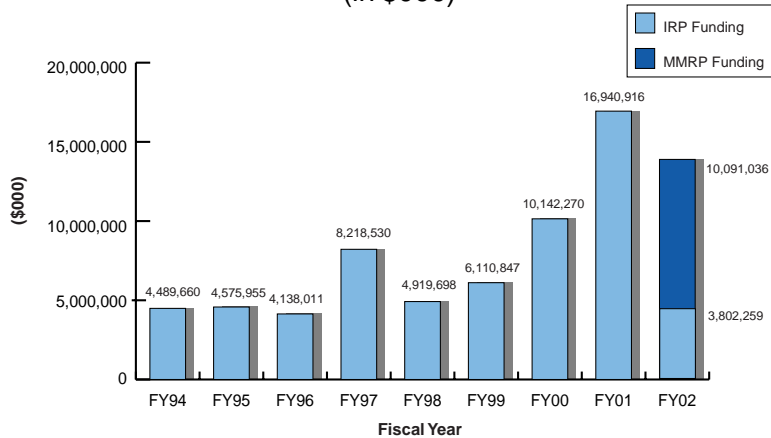


FY04 FUDS Planning Estimate
Total = \$212.6 million



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

FUDS Cost-to-Complete Trends
(in \$000)



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