EPA MEGASITES

Superfund Basic Research Program Annual Meeting

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What Defines a Megasite?

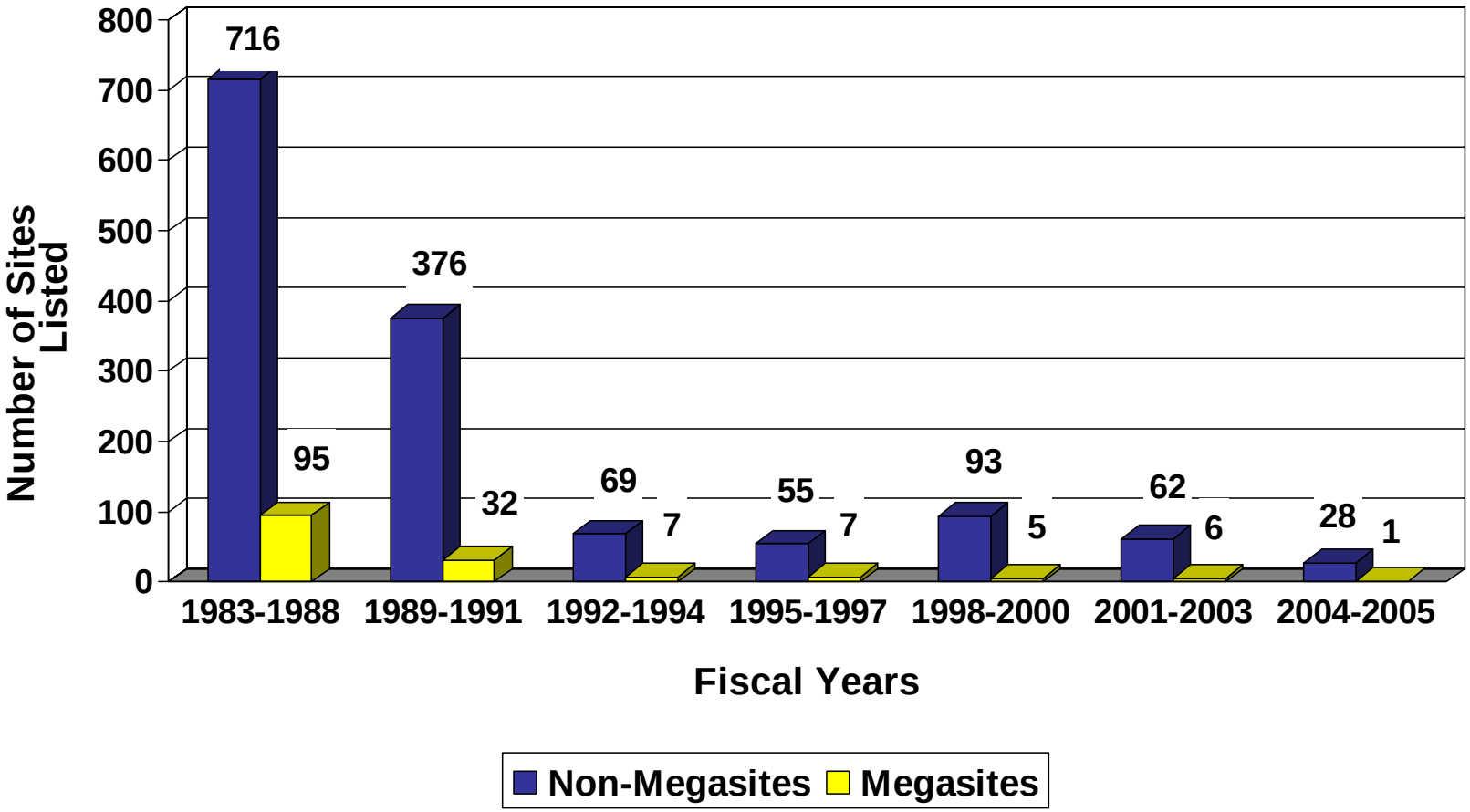
- **The combined extramural, actual and planned, removal and remedial action costs are greater than $50 million.**

Are Federal Facilities Counted as Megasites?

- Generally, EPA has not tracked Federal Facility sites as Megasites.

- If the Megasite definition was more rigorously applied to Federal facilities, many sites would likely be classified as Megasites.

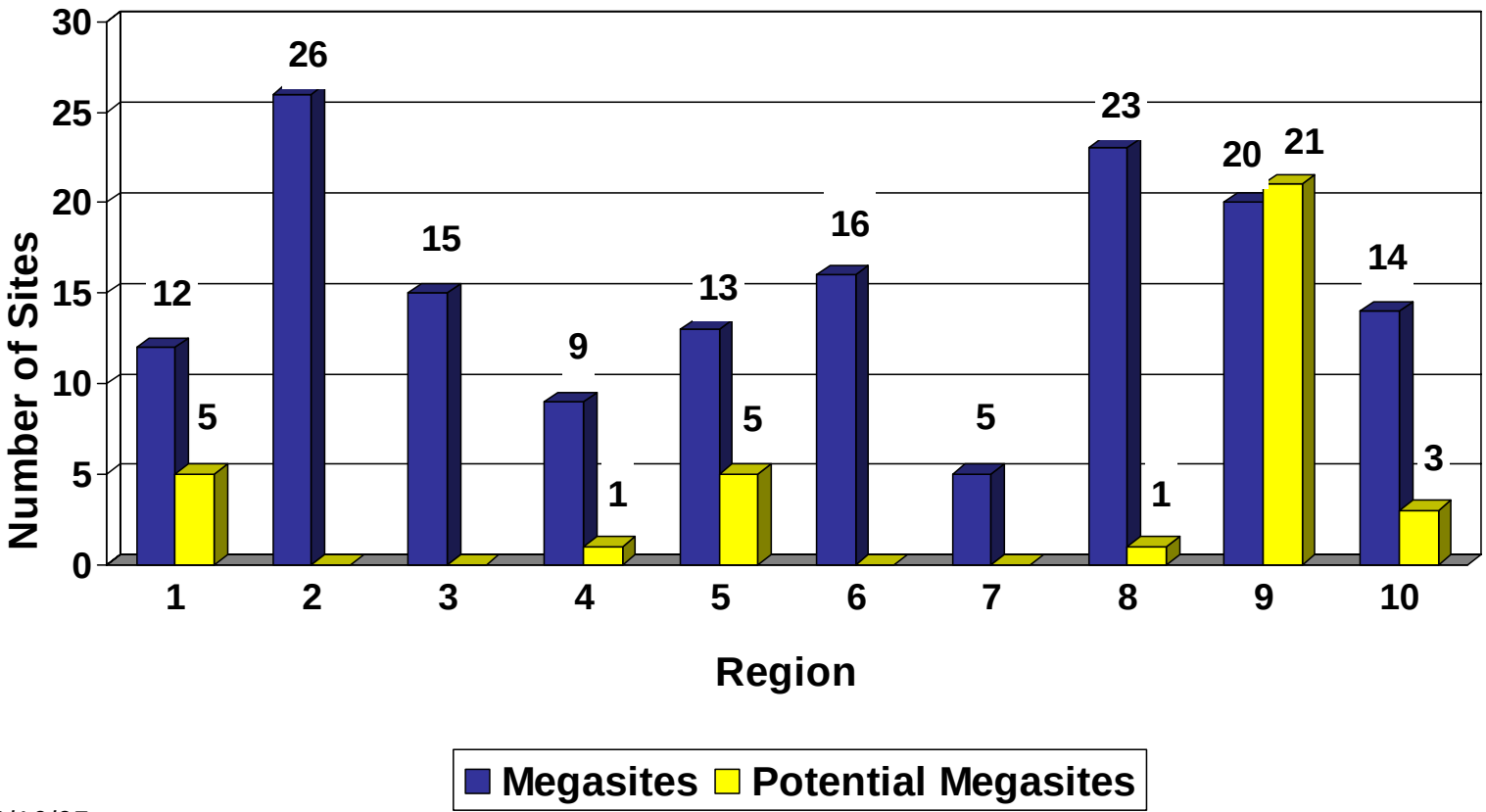
Trends in NPL Listing



Data as of : 12/16/05

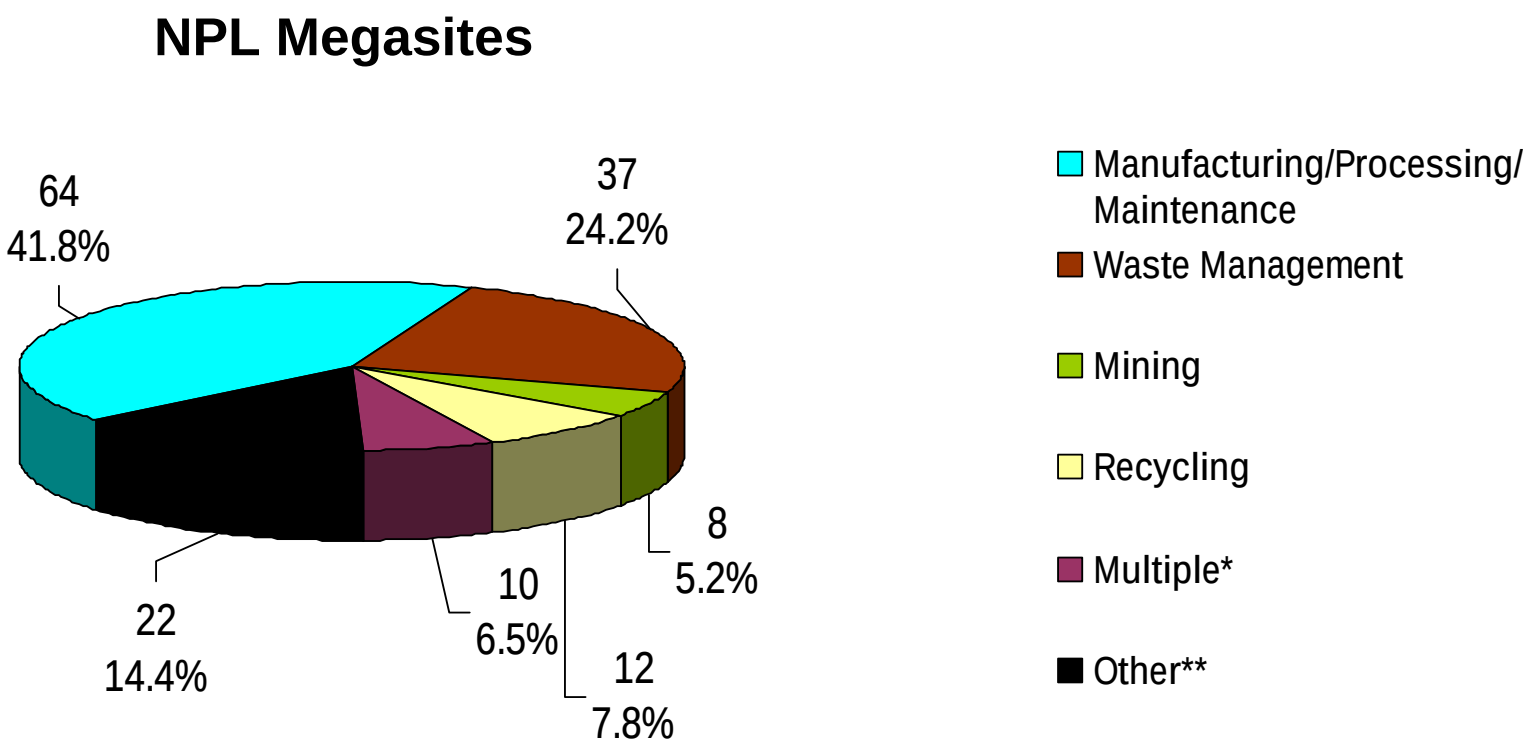
Megasites by Region

189 NPL Megasites and Potential Megasites



Data as of : 12/16/05

Comparison of NPL Megasites by Site Type



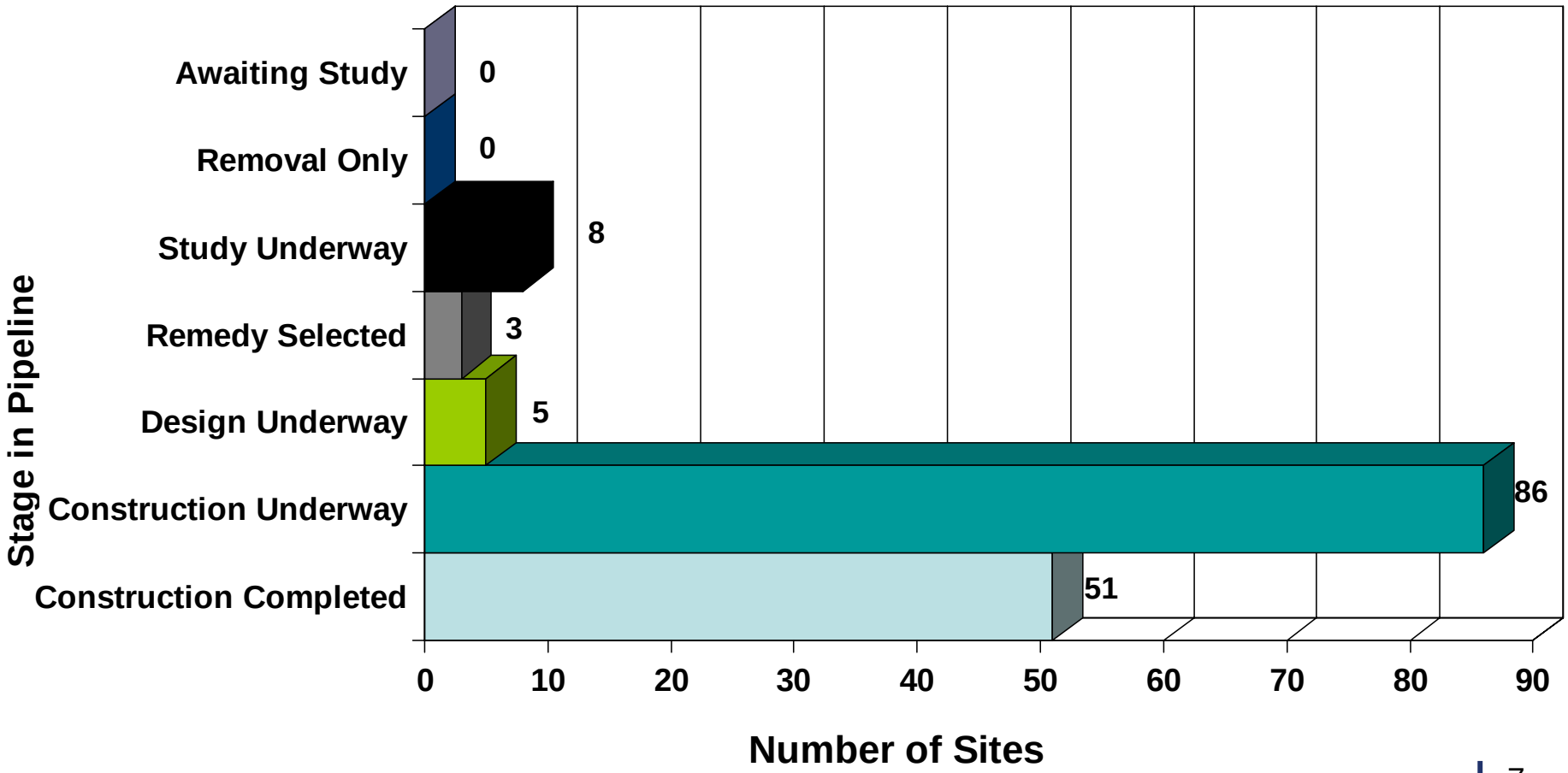
***Multiple:** Sites that fall in more than one site type

****Other:** Includes categories such as ground water plume; military; research, development, and testing facilities; transportation, etc.

CERCLIS Data as of: 12/20/05

Megasites in the Pipeline

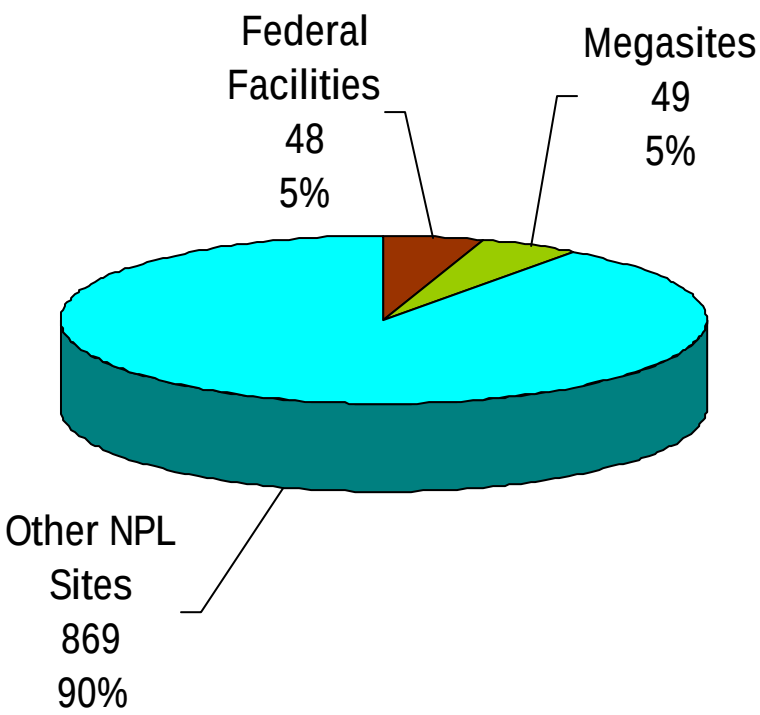
NPL Megasites by Pipeline Stages



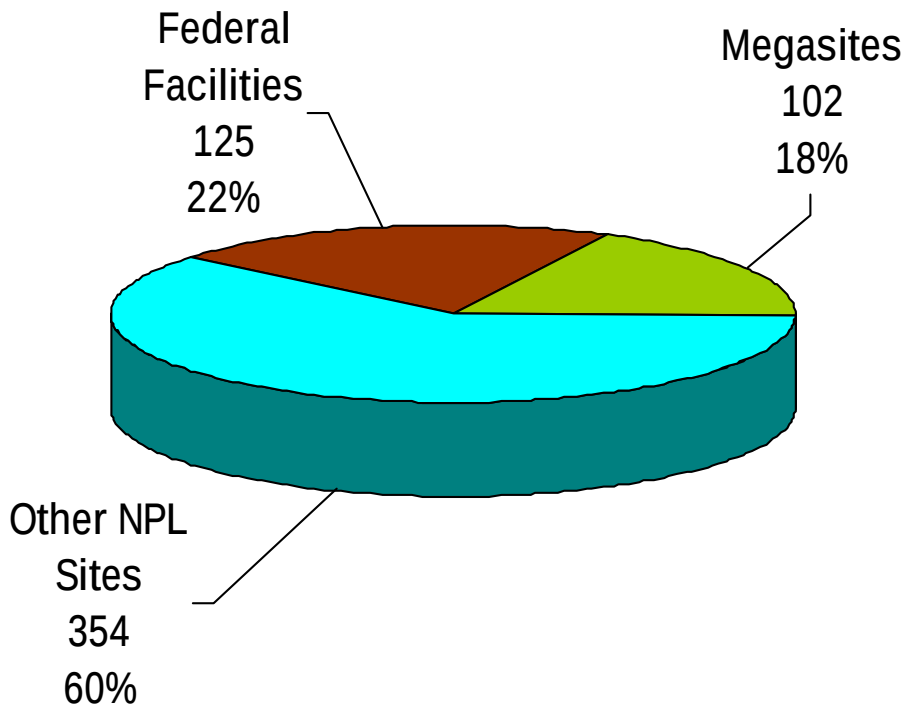
Data as of : 12/16/05

Remaining NPL Sites are More Complex than Construction Complete Sites

966 Construction Complete Sites

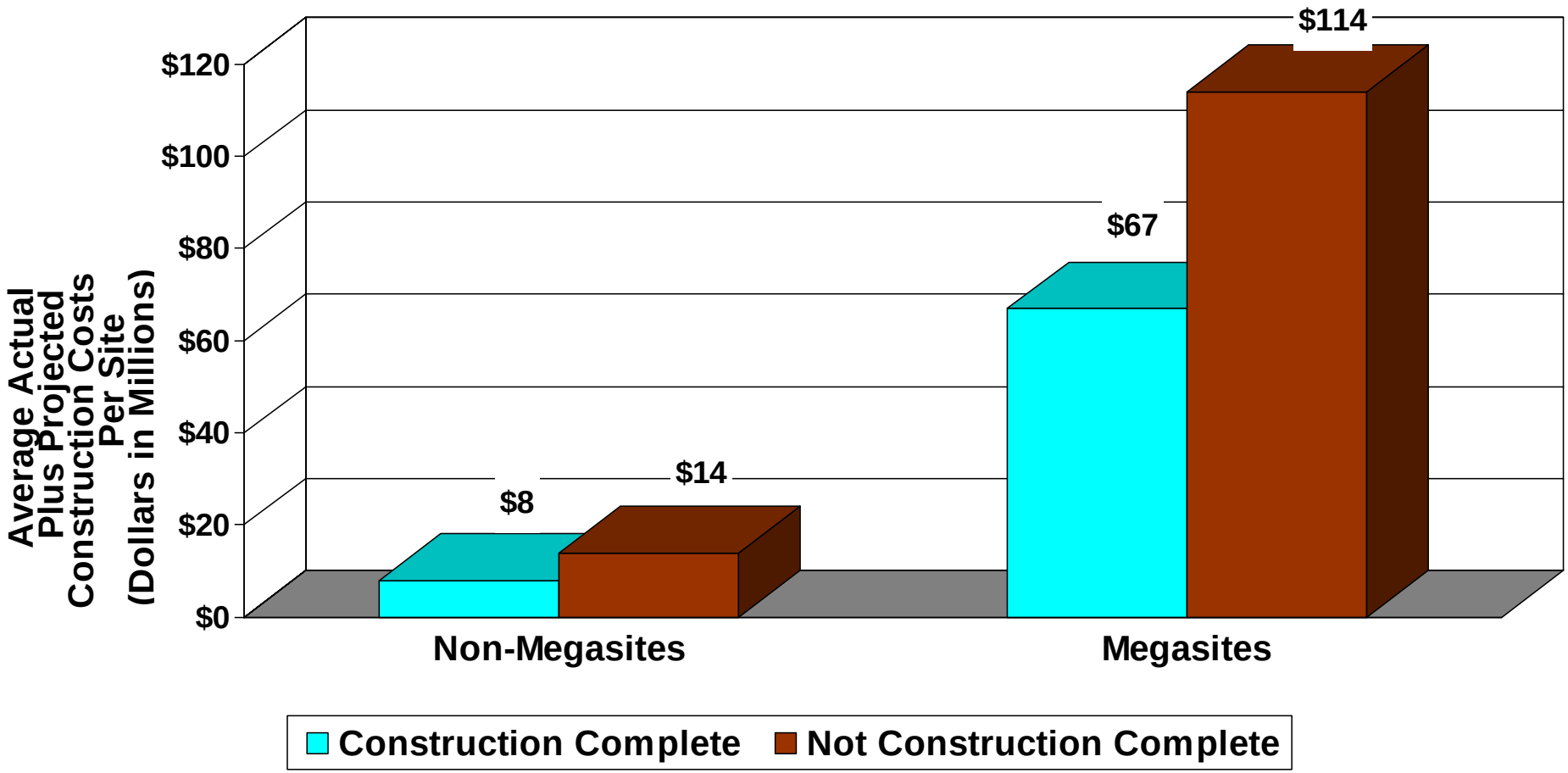


581 Non-Construction Complete Sites



End of FY 2005 CERCLIS data for Final and Deleted NPL sites

Remaining Fund-lead Sites are More Costly than Construction Complete Sites



End of FY 2005 CERCLIS data for Final and Deleted NPL Sites

Prolonging Construction Increases Costs

New Bedford Harbor

Given:

- Volume 880,000 cubic yards
- 2004 unit cost of dredging is $300/cubic yard

Assumption:

- Inflation at 3% per year to 2004 unit cost

Annual Funding	Years to Complete	Cost to Complete
$30 M	**11**	**$330 M**
$20 M	**18**	**$360 M**
$15 M	**26**	**$395 M**

What Does the Future Look Like?

From the Environmental Law Institute Study, "An Analysis of State Superfund Programs: 50-State Study, 2001 Update"

1. States have identified ~ 63,000 known and suspected sites.

2. States have identified ~ 23,000 sites as needing attention.

What EPA is Doing Now to Address Megasites

- Address human health risks first.
- Review remedies and annual progress; provide advice to site managers on the largest or most complex contaminated sediment sites where a remedy has not yet been selected (EPA Contaminated Sediments Technical Advisory Group).
- Implement Hard Rock mining site strategy.
- Conduct demonstration pilot projects for urban river cleanup and restoration.

How Does Research Fit Into Megasite Work?

EPA Superfund Research Needs for Mining, Sediment, Groundwater Sites

Mining Sites

- Site characterization tools for acid mine drainage.
- Understanding of bioavailability and bioaccessibility of arsenic in soil.
- Innovative and cost-effective remediation technologies for mining wastes, including uranium and asbestos-containing mine tailings.

How Does Research Fit Into Megasite Work? (cont'd)

Groundwater

- Economical detection methods for emerging contaminants in groundwater, such as perchlorate and 1,4-dioxane.
- Real-time and cost-effective field characterization and monitoring methods for ground water contaminants.
- Characterization tools for evaluating vapor intrusion pathways from groundwater.
- Remediation technologies for DNAPL chlorinated solvents.

How Does Research Fit Into Megasite Work? (cont'd)

Sediment Sites

- Validation of surface water/sediment fate and transport and food chain models.
- Methods to accurately evaluate releases from upland sources and recontamination of sediments.
- In-situ treatment and innovative containment technologies for contaminated sediment.
- Method for evaluating impacts on ecological and human health risk from contaminant releases and sediment residuals from dredging.

How Does Research Fit Into Megasite Work? (cont'd)

Chemical Specific Needs

- Toxicity information for toxaphene congeners and their degradation products and associated information for human health.
- Analytical methods to determine speciation of arsenic, chromium, and mercury in soils, sediments, water and biota.
- Asbestos toxicity, sampling and analytical methods.

Closing

- Megasites have become the main focus for EPA's Superfund Program.
- Prolonging construction completion results in greater total cleanup costs.
- EPA encourages the SBRP to translate research findings quickly into methods and technologies that improve the efficiency of site characterization, remediation and achievement of cleanup goals.