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# Contaminated Sediments: Are There Alternatives to Superfund?

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According to the United States Environmental Protection Agency (EPA), sediment contamination affects lakes, streams, rivers, and coastal resources in every region and state of the country. EPA defines contaminated sediments as “soils, sand, and organic matter or minerals that accumulate on the bottom of a water body and contain toxic or hazardous materials that may adversely affect human health or the environment.” USEPA Office of Water, *EPA’s Contaminated Sediment Management Strategy*, EPA-823-R-98-001 at 5 (Apr. 1998).

In the first National Sediment Quality Survey Report to Congress, EPA identified ninety-six different watersheds in which it concluded that contamination may threaten sediment-dwelling organisms, fish, and humans and wildlife who eat fish. *The Incidence and Severity of Sediment Contamination in Surface Waters of the United States* at 3-12 (Jan. 1997, EPA Office of Science and Technology, EPA-823-R-96-006) (now being updated). In 2000, 100 percent of the Great Lakes and their connecting waters and 71 percent of coastal waters of the contiguous forty-eight states were under advisories for fish consumption. Many of these advisories, according to EPA, may be linked to contaminated sediments. EPA also estimates that 24 percent of the Total Maximum Daily Loads (TMDLs) for the approximately 20,000 impaired waters listed in 1998 were for pollutants potentially originating, in part, from contaminated sediments.

Beyond their ecological impacts, contaminated sediments can pose a barrier to essential maintenance and construction projects in the country’s major ports and navigable waterways. The United States Army Corps of Engineers (Corps), the agency primarily responsible for maintaining federally designated navigation channels, dredges and disposes of several hundred million cubic yards of sediments each year under its congressionally authorized public works program. Contaminated sediments require special handling and disposal methods, which can result in prohibitive costs and protracted regulatory permitting proceedings. Dredging and disposal of contami-

nated sediments also may result in strict liability for releases of hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601 *et seq.* (CERCLA or Superfund). As a result of these constraints, many dredging projects necessary to maintain or expand commercial and recreational navigation channels have been denied or deferred indefinitely.

For years, EPA has acknowledged that management of contaminated sediments requires a comprehensive, multimedia response combining multiple programs, agencies, and resources with public and private support. Sediment contamination affects and reflects the entire balance of chemicals in a watershed. As part of a flowing environment, contaminated sediments move, resulting in widely varying and constantly changing patterns of contamination, potentially dispersed across hundreds of acres or miles of waterway. They reflect all past sources of pollution, and they continue to be affected by new discharges to the system. Continuing sources of contamination typically include “municipal sewage treatment plants, combined sewer overflows (CSOs), storm water discharges from municipal and industrial facilities, direct industrial discharges of process waste, runoff and leachate from hazardous and solid waste sites, agricultural runoff, runoff from mining operations, runoff from industrial manufacturing and storage sites, atmospheric deposition of contaminants, and contaminated groundwater discharges to surface water.” USEPA Office of Water, *EPA’s Contaminated Sediment Management Strategy*, EPA-823-R-98-001 at 5 (Apr. 1998).

Precisely because contaminated sediments are the expression of a continuously changing environment, any attempt to address the problem must be comprehensive to be successful. For example, remedying one portion of a river, without addressing all of the contaminated sediment that inevitably will migrate from upstream, would be of little benefit. Likewise, removing or capping all sediments in the river, without taking measures to prevent the flow of new contamination into the river, would provide a remedy that is temporary at best. The result is that remedial decisions often must address both sediments and contaminant sources unevenly distributed across miles of

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waterway within multiple jurisdictions subject to overlapping and sometimes inconsistent legal and administrative frameworks. The technical and political challenges inherent in managing thousands of cubic yards of contaminated sediments at such large sites, and the economic costs to design and implement such large remedies, can be enormous.

### *The Limitations of Superfund*

Although more than ten federal statutes authorize EPA to address the problem of contaminated sediments, the clear focus of EPA's efforts to address contaminated sediments and, as a result, of the public's attention, has been the use of Superfund program to achieve this goal. EPA has identified about four hundred sites on Superfund's National Priorities List (NPL) where the final remedy may include some work to address contaminated sediments. These include a number of very large contaminated sediment sites, such as the Hudson River and New Bedford Harbor, where remedies are expected to cost hundreds of millions of dollars.

The Superfund program's sole mission is to respond to releases of hazardous substances from abandoned or uncontrolled hazardous waste sites. Under CERCLA, EPA may order all, a few, or any one of many liable parties to clean up a site. The statute imposes strict, categorical, and several liability. Categorically liable parties include the past and present owners and "operators" of sites from which there have been releases of hazardous substances, and entities that arranged for disposal of hazardous substances at such sites.

The Superfund program is ill-suited to serve as the primary vehicle for managing contaminated sediments. First, CERCLA's categorical liability standards are particularly inequitable when applied to one or a few parties charged with cleaning up acres or miles of waterways polluted as a result of thousands of discharges throughout generations of industrial and commercial development activities. Fundamentally, CERCLA's liability and allocation scheme does not fit the profile of large-scale sediment sites, where contaminant sources may be numerous, diffuse, difficult to identify and, ultimately, beyond CERCLA's control.

Second, CERCLA inevitably entails an adversarial process that is notorious for its cost, delay, and poor reception within the local community. As evidenced by media reports of opposition from Puget Sound to the Hudson River, local communities rarely favor having their waterways listed on the NPL, or their fate decided by federal bureaucrats. Likewise, the "polluter pays" principle may ring hollow for local businesses who, believing they have long com-

plied with all applicable laws, find themselves embroiled in years of CERCLA litigation.

Third, CERCLA is an enforcement, not a regulatory program. CERCLA authorizes EPA to undertake, or to compel responsible parties to undertake, response actions at discrete hazardous waste disposal sites. It is not uncommon for multiple parties to be engaged in state or federally mandated clean-ups at separate sites, using different technologies, to achieve inconsistent remediation goals, on or in the same water body. More generally, CERCLA does not provide a comprehensive framework for terminating or regulating ongoing discharges of pollution from point and non-point sources to a regional watershed. In the absence of measures to prevent recontamination from continuing sources, any remedy instituted under CERCLA may temporarily reduce the mass of contaminated sediment, but it cannot assure a permanent reduction in environmental risks. "If there are other environmental sources contaminating the site, site remediation might have little or no impact on total risks." *A Risk-Management Strategy for PCB-Contaminated Sediments* at 255 (National Research Council 2001) (*Risk Management Strategy*).

Fourth, the National Research Council (NRC), among others, has criticized CERCLA's specific statutory criteria as inappropriately narrow when applied to contaminated sediment sites. Section 121(b) of CERCLA establishes a general preference for remedies that include treatment, and that "permanently and significantly reduce the . . . toxicity or mobility of the hazardous substances, pollutants, and contaminants." 42 U.S.C. § 9621(b). In both its reports, NRC has singled out these statutory criteria for criticism. In *Contaminated Sediments in Ports and Waterways* (National Research Council 1997) (*Contaminated Sediments*), NRC stated that CERCLA fails "to consider fully the practicality of remedial alternatives, including their economic and technological viability." *Id.* at 47. NRC also criticized the "rigid criteria and procedures," *id.* at 50, established in CERCLA's implementing regulations (the National Contingency Plan, NCP), 40 C.F.R. Part 300. NRC further suggested that "it may be appropriate to consider changing Section 121(b) to clarify the circumstances under which (e.g., low- to intermediate-level contamination spread over large areas of aquatic bottoms) engineered capping would be considered a 'preferred' CERCLA remedy." *Id.* at 190.

Similarly, in its *Risk-Management Strategy*, NRC noted that "[r]emedy selection under Superfund places a preference on management approaches that remove contaminants from the environment." Other scientifically accepted remedies, such as natural attenuation or capping of contaminated sediments, frequently have been rejected because they have not been found to satisfy CERCLA's "permanence" and

“treatment” criteria. *Id.* at 246. NRC concluded that remedy selection should be determined based on “site-specific factors and conditions, such as sediment depth, currents, ecosystems, extent of contamination, and cocontaminants, as well as local social, legal, cultural, and economic considerations.” *Risk Management Strategy* at 13-14. NRC did not explain, however, how its selection criteria may be harmonized with the statutory criteria applicable to all remedies instituted under CERCLA.

In direct response to NRC’s criticisms, EPA drafted new guidance for selection of remedies at contaminated sediment sites. USEPA Office of Solid Waste and Emergency Response, *Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites*, OSWER 9285.6-08 (Feb. 12, 2002) (*Sediment Principles*); USEPA Office of Solid Waste and Emergency Response, *Contaminated Sediment Remediation Guidance for Hazardous Waste Sites* (Draft), OSWER 9355.0-85 (Nov. 2002). EPA’s new guidance explicitly endorses the NRC’s conclusion that “mass removal” should not be considered a “presumptive remedy” (i.e., that management techniques that remove contaminated sediments from the environment should not be presumed to be the best remedy at every site). The guidance requires managers not only to consider each of the three major cleanup methods (monitored natural recovery, capping, and removal through dredging or excavation), but also to consider combining methods as dictated by different conditions within the same site. Like NRC, in its guidance EPA also has been careful to acknowledge, without any attempt to reconcile, CERCLA’s conflicting mandate for “permanence” and “treatment.” *See, e.g., Sediment Principles* at 6.

As of 2001, EPA selected a remedy under Superfund for contaminated sediments at approximately 140 sites. Of the sites for which EPA has data, it selected removal—through excavation or dredging—as the remedy at the vast majority of those sites. USEPA Office of Emergency and Remedial Response, *Contaminated Sediment at Superfund Sites: What We Know So Far* (April 2003) (presentation by Leah Evison at Workshop on Environmental Stability of Chemicals in Sediment). Notwithstanding its guidance, records of decision that EPA issued after the NRC’s *Risk Management Strategy* at two of the nation’s largest sediment sites, the Hudson and Fox Rivers, suggest that the “permanence” and “treatment” criteria still exert disproportionate influence over remedial decisions. At both sites, EPA selected alternatives that incorporated

dredging as the principal remedial technology. EPA rejected capping and monitored natural attenuation without substantial dredging because these processes did not reduce the toxicity or volume of PCBs, and they did not meet CERCLA’s preference for permanence. Although acknowledging that dredging would have measurable short-term impacts, EPA determined that the degree of impact would be minimal when compared to the long-term benefits of mass removal.

### *The “Civil Works” Model for Sediment Projects*

Among the key findings in NRC’s *Risk-Management Strategy* was the need to “involve the community as a respected partner.” By contrast, NRC observed that the prevailing practice at CERCLA sites is to ask the public to ratify an agency decision rather than to invite the public’s input in characterizing the site or evaluating possible remedial alternatives. *Id.* at 84. NRC stated that the better approach is to provide for participation of all affected interests, so that the chosen remedy fits best with specific local concerns, including health, ecological, societal, cultural, and economic benefits and risks. *See id.* at 251.

Given these findings, it should not be surprising that Congress has established, and in fact has been asked to expand, programs for undertaking sediment clean-ups and ecological restoration as civil improvement projects funded in partnership with “non-federal sponsors.” Following the model of the civil works program implemented through the Corps, these alternative programs rely on community consensus, local investment, and direct legislative appropriations to scope and fund sediment remediation projects. In contrast to response actions conducted under CERCLA, these projects are initiated voluntarily, to achieve locally determined environmental and economic objectives, subject to federal approval processes based on measuring and creating value rather than meeting specific statutory criteria.

The partnership model for funding water resources projects can be traced to at least 1986. In the Water Resources Development Act (WRDA) of 1986, Pub. L. No. 99-662, 106 Stat. 4082 (1986), Congress substantially reformed the Corps’ civil works program by establishing a comprehensive cost-sharing scheme for allocating predesign, design, construction, and operation and maintenance costs for water resource de-

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velopment projects between the federal government and local communities, referred to as “non-federal sponsors.” One commentator noted that these reforms were the culmination of a long trend away from projects determined and controlled by federal agencies to those initiated, primarily through lobbyists, in Congress. *The Federal Role in Water Resources Management: Administrative Politics in a Federalist State*, available at [usace.army.mil/net/usace-docs/misc/91-ps-1/c-1.pdf](http://usace.army.mil/net/usace-docs/misc/91-ps-1/c-1.pdf). In turn, this trend may be traced back to President Eisenhower who, in his 1953 State of the Union Address, underlined the need for a “partnership” based not on the “scientific management” principles of the New Deal but, instead, on local responsibility and operational efficiency. “The best natural resources program will not result from exclusive dependence on the Federal bureaucracy,” he said. “It will involve a partnership of the States and local communities, private citizens and the Federal Government, all working together.” *Id.* at 24.

Congress has reenacted WRDA essentially every two years since 1986, each time reauthorizing or adding particular navigation, flood control and other water resources projects, and tinkering with the cost-sharing formulas for eligible projects. Beginning in 1990, Congress started to experiment with WRDA as a vehicle for funding contaminated sediment projects, providing statutory authority for the Corps to conduct “environmental dredging” and “aquatic ecosystem restoration” projects. See Pub. L. No. 101-640, 104 Stat. 4604 (1990), codified at 33 U.S.C. § 1272. Congress also adopted specific study authorities, providing direct appropriations for environmental projects in the Passaic River in New Jersey and the Willamette River in Oregon. Although the Great Lakes Legacy Act was enacted in 2002 as a separate statute, its provisions, too, were copied largely from language in WRDA specifically to fund Areas of Concern in the Great Lakes. See Pub. L. No. 107-303, 116 Stat. 2355, codified at 33 U.S.C. § 1268.

WRDA contains two general grants of authority for cost-sharing between local sponsors and the federal government to address contaminated sediments and to restore aquatic habitat. Section 206, WRDA 1996, as amended, authorizes the Corps to carry out aquatic ecosystem restoration and protection projects, similar to natural resource damages restoration or rehabilitation actions under CERCLA. 33 U.S.C. § 2330. The purpose of a Section 206 project is “to restore significant ecosystem function, structure, and dynamic processes that have been degraded.” U.S. Army Corps of Engineers, *Civil Works Ecosystem Restoration Policy*, ER 1165-2-501 (Sept. 30, 1999). Typical projects would include manipulation of surface elevations and hydrology in and along bodies of water, including wetland and riparian areas, to restore the natural flow of water or to recreate wetland or

benthic habitat. Section 206 provides 65 percent federal matching funds to nonfederal sponsors for preconstruction and implementation costs, but not for operations, maintenance, and repairs after construction. Proposals for ecosystem restoration projects are evaluated based on their monetary and nonmonetary benefits but, unlike other civil works projects, they need not exhibit net national economic development (NED) benefits. Significantly, Section 206 may not be used to fund projects with a primary purpose of removing contaminated sediments. The statute contains no explicit prohibition, however, against funding projects to “restore, replace, or acquire the equivalent of natural resources” damaged as a result of sediment contamination, a remedy otherwise provided under CERCLA. 42 U.S.C. § 9607(f)(1).

In the 1990 WRDA, Section 312 entitled “Environmental Dredging,” provides the Corps with two distinct authorizations for removal of contaminated sediments from navigable waterways. Pub. L. No. 101-640, 104 Stat. 4604 (1990). Section 312(a), as amended, authorizes the Corps to remove contaminated sediments outside federal navigation boundaries as part of operation and maintenance for a navigation project. 33 U.S.C. § 1272. A feasibility-level study must be completed demonstrating that dredging outside the channel is justified to prevent future mixing of contaminated sediments and migration into the channel. Justification may be based on savings in future operation and maintenance costs and on nonmonetary environmental benefits. Cost-sharing for Section 312(a) activities is determined as it is for other navigation projects. In general, the percentage of the nonfederal contribution ranges from 10 percent to 50 percent depending on the depth of the project. See generally *Implementation Guidance for Section 312 of the Water Resources Development Act of 1990 (WRDA 90)*, *Environmental Dredging, as amended by Section 224 of the Water Resources Development Act of 1999 (WRDA 99)* USACE CECW-P/CECW-O (Apr. 25, 2001) (*Implementation Guidance*).

Section 312(b) of the 1990 WRDA, as amended, provides for the removal of contaminated sediments solely for the purpose of environmental enhancement and water quality improvement. 33 U.S.C. § 1272(b). In contrast to Section 312(a), Section 312(b) applies to any portion of a navigable waterway outside the federal channel, and it does not require any showing of a relationship to existing or future navigation projects. Justification for use of Section 312(b) authority must be established through an ecosystem-based analysis, demonstrating measurable monetary and nonmonetary environmental benefits that will accrue from the project. As under Section 206, the project need not exhibit NED benefits. Section 312(b) has its own cost-sharing provisions; that is, the cost-shar-

ing requirements generally applicable to navigation projects do not apply. *Compare* WRDA 1986 § 101, Pub. L. No. 99-662 (1986) *with* § 312(b). Federal matching funds are available for 65 percent of the costs of construction, including removal, remediation, and transport of material. Disposal costs, including real estate related costs, are shared as costs of construction. 33 U.S.C. § 1272(d); *see generally Implementation Guidance*.

The environmental dredging and ecological restoration provisions of WRDA appear on their face to offer attractive alternatives to sediment remediation and resource restoration projects conducted under CERCLA. WRDA promises federal funding for a majority of project costs, delegates responsibility to the proponent to determine remedial project objectives and scope, employs value and utility as metrics for project approval, and enlists the federal government as a partner rather than as an adversary. In addition to cost-sharing, WRDA may provide cost efficiencies because navigation, environmental dredging, and ecological restoration projects may be authorized and implemented together, as part of one comprehensive waterway improvement project.

To date however, significant legal, political, and institutional barriers have prevented projects from proceeding to completion under Section 312 or Section 206. Most importantly, WRDA does not provide a clear detour around the obstacles of CERCLA. Section 312 specifically states that it shall not be construed to affect the rights and responsibilities of any person under CERCLA, and the Corps discourages use of Section 312 as a means for attempting to avoid the “polluter pays’ principles of CERCLA.” *Implementation Guidance* at 5. Corps guidance requires that responsible parties be identified if possible, and joined as participants or pursued through cost-recovery actions. Notably, however, the Corps has indicated it may approve of projects involving large urban waterways where the diversity of contaminant sources and the size of the watershed make joinder of responsible parties under CERCLA impractical, or where Section 312 projects are proposed as part of “brownfields” or other urban revitalization initiatives.

Section 312(c) explicitly prohibits the Corps from removing or remediating contaminated sediments under Section 312(b) without first preparing a joint plan with EPA and other state and local resource agencies. Procedurally, the Corps requires completion of environmental reconnaissance and feasibility studies, analogous to EPA’s remedial investigation and feasibility studies, culminating in a record of decision approved by the assistant Secretary of the Army (Civil Works). The Corps also requires preparation of an environmental impact statement or, if

minimal impact is likely, a less detailed environmental assessment for most “major” projects. *Procedures for Implementing NEPA*, USACE ER 200-2-2 at 2 (Mar. 4, 1988). WRDA does not provide any of its own clean-up criteria. As a result, the scope of the studies and the extent of the cleanup must be determined through consensus, subject to the cost-benefit limitations provided in WRDA and the Corps’ implementing regulations.

The Corps has proposed that its own dredged material tiered-testing procedures, including sediment bioassays and bioaccumulation tests, be adopted as a uniform standard for determining an acceptable level of risk for contaminated sediments left exposed to the environment after completion of a project (i.e., it would not prevent material from being capped, or isolated, for example, in a subaqueous containment cell). Even though the requirements of NCP do not directly govern WRDA projects, EPA and state environmental agencies typically insist that ecological and human health risks be identified and reduced to a degree generally consistent with what would be achieved under CERCLA. Likewise, to obtain a covenant not to sue and contribution protection against future CERCLA liability, a project sponsor (and any PRPs ultimately providing the nonfederal share of funds necessary to complete the project) will need to enter a settlement approved in accordance with CERCLA § 122 which, in turn, may require the response action to comply substantially with applicable requirements of the NCP.

The WRDA process imposes other challenges. Each WRDA project must have a nonfederal sponsor (defined as a “legally constituted public body,” such as a municipal redevelopment or port authority), with legal and financial powers to raise money and pay damages. The statute does not preclude, and the Corps does not discourage, private parties from making arrangements with an eligible nonfederal sponsor, if one can be found, to front a project. The sponsor (or its backers in the private sector) must invest substantial legal and technical resources to negotiate project studies and plans acceptable to EPA, state agencies, the Corps, and other stakeholders, and it must advance its share of preconstruction costs before it can be sure the project will be approved for funding. The sponsor also must enter a series of agreements with the Corps, including indemnification of the Corps for any losses arising from the project not caused by the Corps’ negligence. The indemnification agreement covers any liability the Corps may incur under CERCLA as a result of its dredging and disposal activities. Such a broad indemnity is problematic, because the sponsor has no direct control over the activities of the Corps and its contractors. Moreover, lawsuits against the Corps under CERCLA for historical

dredging and disposal activities are not unusual. Finally, even if all of these obstacles can be surmounted, private parties considering funding a WRDA project should know that, while they are working to reach community consensus, the project could grow so much in scope that the nonfederal share alone could exceed the entire cost of a CERCLA clean-up.

### *Coordinated Approaches to Restoring Urban Rivers*

Acknowledging the inadequacies of the current fragmented regulatory framework, the Corps and EPA announced initiatives for undertaking a more coordinated approach to restoring degraded urban rivers. See *High Performance Water Management, The Chief of Engineers Recommendations for the Army Civil Works Legislative Program for 2002*. In a legislative program for 2002, the chief of engineers for Army Civil Works proposed an Urban River Restoration Initiative to replace EPA's programs under CERCLA and the Clean Water Act. "In the case of multiple sources of contamination and pollution, traditional regulatory approaches, at best, have limited opportunities for success because of their lack of comprehensiveness in planning and implementation. The Corps civil works project planning framework avoids these problems." *Id.* at 20–21. The Corps maintained that the civil works program provides a unique platform for systematic evaluation and comprehensive planning to address all factors contributing to ecosystem degradation and loss of economic use values. *Id.* at 21.

The Corps' proposal asked Congress to approve funding for comprehensive feasibility studies for urban rivers as specific study authorities unencumbered by the limitations of Section 312. These studies would be conducted in partnership with EPA, but they would be budgeted through the Corps. The Corps sees these studies as comprehensive, including, for example, wastewater treatment and related facilities, combined sewer and sanitary sewer overflow and other stormwater management measures, removal or remediation of contaminated sediments, creation or restoration of habitat, and other ecological values. The studies would culminate in recommended plans, to be approved and funded as specific project author-

ities under WRDA, for management programs for each watershed, including site-specific allocations of costs to public and private-sector participants (including parties responsible under CERCLA).

To date, the Corps' Urban Rivers Restoration Initiative has not resulted in any new legislation, although the Corps and EPA have succeeded in framing pilot studies on a more modest scale. On July 2, 2002, the Corps and EPA entered a Memorandum of Understanding (MOU) concerning "Restoration of Degraded Urban Rivers." The MOU acknowledges that programs under CERCLA, the Clean Water Act, and WRDA can lead to piecemeal projects in the same reaches of contaminated urban rivers. Rather than proposing to reform the existing statutory

framework however, the MOU announces a plan to coordinate "EPA's remediation and water quality activities and the USACE's environmental restoration, navigation and waterways maintenance activities." MOU at 2. The MOU states that EPA and the Corps will enter into watershed-specific agreements on eight urban rivers as pilot projects. To date, four rivers have been selected as pilots: Anacostia River, District of Columbia and Maryland; Elizabeth River, Virginia; Blackstone-Woonasquetucket River, Massachusetts and Rhode Island; and Tres Rios, Arizona.

In 2002, Congress enacted the Great Lakes Legacy Act. See Pub. L. No. 107-303, 116 Stat.

2355 (2002), codified in part at 33 U.S.C. § 1268. This statute attempts to integrate the Corps' civil works project planning framework with EPA's sediment clean-up efforts, and the law charges EPA's Great Lakes National Program Office (GLNPO), rather than the Corps, with implementing the Act. 33 U.S.C. § 1268(c)(12). The Legacy Act provides federal matching funds for up to 65 percent of total costs, exclusive of operations and maintenance costs, for "eligible projects." *Id.* Eligible projects must be located in a Great Lakes Area of Concern, and must include plans to monitor, evaluate, remediate, or prevent further or renewed sediment contamination. A remediation project for which a Remedial Action Plan already has been submitted and is ready to be implemented generally will be given priority for funding. The statute prohibits conducting a sediment remediation project unless continuing sources that may cause recontamination of sediment after completion of the project are eliminated. A further prerequisite is

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the completion of a remedial alternatives analysis, including a review of short-term and long-term effects of the alternatives on human health and the environment. *Id.*

The Legacy Act does not mandate that procedures applicable to clean-ups under NCP, CERCLA and the Clean Water Act be followed, it does not specify that any particular clean-up criteria must be achieved and, unlike Section 312(c), WRDA 1990, as amended, it does not contain a savings clause against any implicit amendment to CERCLA. Nor does the Legacy Act incorporate any of the statutory or procedural limitations that have hampered implementation of environmental dredging projects under WRDA, such as eligibility and indemnification requirements for nonfederal sponsors. Further, in the Legacy Act, Congress did not direct EPA to adopt formal regulations, leaving the Act's implementation almost entirely to GLNPO's discretion. That said, because the program has been delegated to EPA, it is likely that remediation projects (if any) conducted under the Legacy Act will be made to fit within the lines drawn under CERCLA by Region V, where the Fox River, and other mass removal remedies, serve as prominent precedents.

EPA, the Corps, and Congress are struggling to define and control federal policy on remediation of contaminated sediments. Notwithstanding long-standing hostility to CERCLA in Congress, EPA is investing substantial resources in creating new guidance, science plans, technical advisory panels, and interagency working groups, all apparently in hopes of defending EPA's claim to contaminated sediment sites as property of the CERCLA program. The Corps has been hampered by CERCLA in carrying out its primary mission, maintaining navigation in ports and waterways, and it has issued clear guidance against disturbing contaminated sediments absent adequate contractual protection against CERCLA liability. The Corps' proposal that Congress expand the civil works program through specific project authorities for urban rivers, and that it put the Corps in charge of implementing comprehensive watershed management solutions, constitutes an attempt to bring CERCLA under WRDA's yoke. In the absence of any clear legislative initiative to grapple with the problem, the Corps and EPA have signed a temporary truce. Projects are moving forward, both under WRDA and as pilot projects under the MOU.

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These projects may result in dredging thousands of tons of contaminated sediments from rivers and harbors in the southwest, in the Great Lakes, and on the East Coast.

The result is something of a paradox. In 1997, Congress became so concerned that EPA would implement "mass removal" as the "presumptive remedy" for remediating contaminated sediments in the nation's waterways that it enjoined EPA from doing any environmental dredging until a panel of experts had opined on whether such a policy had any scientific justification. In 2001, that panel concluded that there is no one preferred remedy, and it criticized CERCLA to the extent that it may lead to such a presumptive result. Following that report, Congress not only left CERCLA's remedial selection criteria intact—it also expanded public funding for environmental dredging.

More than four years ago, authors in this magazine observed that environmental issues have become too complex, and too politically charged, for large-scale congressional action and they predicted that this was likely to remain true no matter who won the next presidential election. Ann R. Klee and Ernie Rosenberg, *The Moribund State of CERCLA Reauthorization*, 13 NAT. RESOURCES & ENV'T 451 (Winter 1999).

The debate is no longer about how to control significant discrete points of pollutant releases (point sources), reduce smokestack emissions from relatively large sources, or prescribe detailed limits for smaller units contained within larger industrial complexes. Instead, the debate now revolves around such issues as preserving ecosystems, controlling nonpoint sources from family farms and cities, reducing the cumulative impact of personal behavior or releases from large numbers of small sources (particularly those associated with smaller businesses), and preventing global climate change.

*Id.* at 455. The administration has changed, and the prediction remains true. NRC, EPA, and the Corps agree that contaminated sediments represent the next great frontier for environmental restoration, and that the nation needs to apply a watershed management approach in that effort. Unfortunately, EPA and USACE may be doomed to piecemeal solutions, prominently featuring dredging as a preferred remedy, unless and until congressional leaders develop the statesmanship and find the courage necessary to reform CERCLA or to expand WRDA. 