

Act (RCRA) facilities, and other sites or facilities where a hazardous substance has been released into the environment. The program will advance the development, evaluation, application, and maintenance of computational methodologies and decision support systems for estimating exposure-dose relations from contaminated environmental media and hazardous substances.

A critical aspect of assessing human health effects associated with hazardous waste sites is the evaluation of past, current, and future human exposures to hazardous substances. In order to accurately and meaningfully evaluate such exposures, more sensitive, media specific, and integrated methods must be developed through a program of research coordinated across multiple relevant, intra-related environmental, geochemical, and biomedical disciplines. No human subjects are involved.

Hazardous waste sites present a number of unique circumstances and problems for ATSDR's public health assessment process. Chief among these is the widespread occurrence of a number of hazardous chemicals and mixed hazardous chemical compounds. In addition, some of the more complex hazardous waste sites may contain multiple waste disposal areas within a single site. Thus, the health assessor may be confronted with the need to evaluate exposures to widely varying contaminant concentrations, exposure frequencies, and exposure durations, with widely varying geochemical and toxicological characteristics. More novel, reliable, and expedient exposure-dose assessment methods must be developed in order to adequately address site-specific issues.

Measurable outcomes of the program will be in alignment with the following performance goal for ATSDR: evaluate the human health risk from toxic sites and releases.

C. Eligible Applicants

Applications may be submitted by:

- State and local governments or their bona fide agents (this includes the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau).

- Political subdivisions of states (in consultation with states), which may include state universities, state colleges, and state research institutions.

Note: Title 2 of the United States Code section 1611 states that an organization described in section 501(c)(4) of the Internal Revenue Code that engages in lobbying activities is not eligible to receive Federal funds constituting an award, grant or loan.

D. Funding

Availability of Funds

Approximately \$300,000 is available in FY 2003 to fund one award. It is expected that the award will begin on or about September 15, 2003, and will be made for a 12-month budget period within a project period of up to 5 years. Funding estimates may change.

Continuation awards within an approved project period will be made on the basis of satisfactory progress as evidenced by required reports and the availability of funds.

Use of Funds

Funds may be expended for reasonable program purposes, such as personnel, travel, supplies and services. Funds for contractual services may be requested. However, the awardee, as the direct and primary recipient of ATSDR cooperative agreement funds, must perform a substantive role in carrying out project activities and not merely serve as a conduit for an award to another party or provide funds to an ineligible party. If contractors are proposed, justification must be provided along with the following: (1) Name of contractor; (2) method of selection; (3) period of performance; (4) detailed budget; (5) justification for use of contractor; and (6) assurance of non-conflict of interest.

Equipment may be purchased with cooperative agreement funds. However, the equipment proposed should be appropriate and reasonable for the activity to be conducted. The applicant, as part of the application process, should provide: (1) A justification for the need to acquire the equipment; (2) the description of the equipment; (3) the intended use of the equipment; and (4) the advantages/disadvantages of purchase versus lease of the equipment (if applicable). Requests for equipment purchases will be reviewed and approved only under the following conditions: (1) ATSDR retains the right to request return of all equipment purchased (in operable condition) with cooperative agreement funds at the conclusion of the project period, and (2) equipment purchased must be compatible with CDC/ATSDR hardware.

Recipient Financial Participation

Matching funds are not required for this program.

E. Program Requirements

In conducting activities to achieve the purpose of this program, the recipient will be responsible for the activities under 1. Recipient Activities, and ATSDR will be responsible for the activities listed under 2. ATSDR Activities.

1. Recipient Activities

a. Identify, pursue, and enhance where appropriate, emerging technical advances in exposure-dose reconstruction to encompass reconstruction of exposure histories and determination of biologically effective doses. These advances should include, but are not limited to, assessment of methods such as: (1) Environmental multi-media exposure (including such pathways as groundwater, surface water, air, soil, and biota); (2) assessment of exposure and dose through bioavailability, accumulation, and transformation; (3) delivery of past, current, or potential future exposure and related dose through water-distribution systems; (4) kinetic networks; (5) genetic algorithms; (6) dose reconstruction; and (7) spatial analysis techniques integrated with (1) through (6) above, as a means to bridge the gap between the release of hazardous substances into the environment, potential dose (exposure), and resulting health effects.

b. Reconstruct exposure and potential dose histories and determine potential for future exposure resulting from hazardous substances in the environment for populations in the environs around hazardous waste sites by use of methodology driven environmental assessment tools. These tools must include, at a minimum, simulators such as: (a) Analytical contaminant transport analysis system (ACTS); (b) steady flow in layered aquifer media and spatial analysis interface (SLAM-GIS); (c) contaminant transport in layered aquifer media and spatial analysis interface (CLAM-GIS); and (d) water distribution system network hydraulic and water-quality simulators integrated with spatial analysis interface and progressive optimality genetic algorithm (POGA) optimization. These tools must be compatible with the desktop computing devices and operating systems currently in use by the agency and its exposure-dose reconstruction computational laboratory. The generalized description of the theory of these assessment tools can be found in the public domain literature.

c. Identify, characterize, and integrate uncertainty analysis techniques, such as