

be disposed of at landfills or by incineration. The Committee also identified a need to update the scientific basis of part 503 to ensure that the current chemical and microbial standards are supported by current scientific data and risk assessment methods. They also recommended that the EPA demonstrate effective enforcement of part 503 and validate the effectiveness of sewage sludge management practices.

The NRC report contains four overarching recommendations: (1) Use improved risk assessment methods to better establish standards for chemicals and pathogens, (2) conduct a new national survey of chemicals and pathogens in biosolids, (3) establish an approach to human health investigations, and (4) increase the resources devoted to EPA's biosolids program. These four overarching recommendations are discussed in detail and supplemented by around 56 individual recommendations contained in Chapters 2–6 of the NRC report. The April 9, 2003 notice (68 FR 17379) contains additional details regarding these findings.

VI. What Process Did EPA Use To Address the NRC Recommendations?

The April 9, 2003, **Federal Register** notice (68 FR 17379) contains details concerning this process. To summarize, upon release of the NRC report, EPA established a committee to respond to the recommendations in the report. The committee includes EPA representatives from a cross-section of offices that are involved or interested in the sewage sludge program. The committee identified and prioritized each NRC recommendation, and developed a preliminary strategy to carry out the activities identified in response to the NRC recommendations. In section VII of the April 9, 2003, **Federal Register** notice (68 FR 17384), EPA presented its preliminary strategy for responding to the NRC recommendations. The section presented three main objectives for attaining a better understanding of sewage sludge and reducing the potential for, or reducing the uncertainty related to, human health impact: (1) Update the scientific basis of part 503 by conducting research in priority areas, (2) strengthen the biosolids program by evaluating results of completed, ongoing, or planned studies both within and outside EPA, and (3) continue ongoing activities for enhancing communications with outside associations and with the public.

EPA then presented responses to the NRC recommendations and a planned

strategy by specific categories: (1) Survey; (2) exposure; (3) risk assessment; (4) methods development; (5) pathogens; (6) human health studies; (7) regulatory activities; and (8) biosolids management. See section VIII of the April 9 notice, 68 FR 17384–17393.

The format of today's notice differs from the April 9, 2003, notice. In today's notice, EPA is presenting a final action plan that includes specific projects that are an outgrowth of the categories presented in the April 9, 2003, notice, in response to many comments that the Agency was too vague in its presentation of preliminary strategies. EPA weighed several factors in determining its final action plan: (1) Major concerns presented in public comments received on the April 9, 2003, notice; (2) the findings of the Water Environment Research Foundation (WERF) Research Summit in July 2003; (3) EPA's existing research commitments in response to areas in the NRC report; and (4) feasibility of responding to specific areas given available resources.

VII. EPA's Final Action Plan To Address NRC Recommendations

A. Background

On April 9, 2003, EPA published a preliminary strategy in the **Federal Register** (68 FR 17379) to prioritize projects to respond to the NRC recommendations and to add value to the Agency's sewage sludge program. The notice summarized the NRC recommendations by category and presented EPA's evaluation of the recommendations and planned responses, and requested public comments. EPA received nearly 100 comments from States, citizens, the sewage treatment and land application industries, environmental groups, and academia. Comments ranged from support for Agency commitments and its preliminary response strategy to seeking a complete overhaul of EPA's sewage sludge program as well as for EPA to implement all of the NRC's recommendations. All comments and the Agency responses are included in the docket in a separate *Response to Public Comments Document* (USEPA, 2003d).

In the time since the NRC issued its report in 2002, EPA has taken steps to enhance its research program to improve the sewage sludge program and to begin implementing recommendations by the NRC. Much of EPA's research complements work being done by others outside the Agency, such as the research projects and the research

issues identified at the July 2003 Biosolids Research Summit sponsored by the Water Environment Research Foundation (WERF). EPA plans to participate in and/or use, as appropriate, outside research, in conjunction with EPA-specific research, in order to make the most of the Agency's limited resources and to enhance the part 503 program. EPA's research program includes projects that will be initiated or completed in the near term (*i.e.*, through 2005).

The Agency does not have sufficient resources to implement all of the NRC recommendations, but we do agree that certain projects can help reduce the persistent uncertainty related to exposure to sewage sludge. EPA plans to review and evaluate completed research projects, both inside and outside EPA, as well as complete or begin other projects, to improve the basis for conducting risk assessments and upgrading the basis for the part 503 regulations or improving management practices. Therefore, EPA has developed this final action plan in response to the NRC recommendations with consideration of public comments on the April 9, 2003, preliminary strategy, information gathered from broad stakeholder input received through the WERF Research Summit, and Agency priorities and resource availability. This final action plan is based on fiscal year (FY) 2004 estimated resources. For planning purposes, the Agency has assumed the same level of funding (*i.e.*, at the estimated FY 2004 level) for future years; however, EPA recognizes that funding for FY 2005 and thereafter is subject to final appropriations.

There are two projects in the Agency's preliminary strategy (68 FR 17379), re-evaluation of the risk assessment used for pollutants regulated or evaluated in Round One and a molecular pathogen tracking exposure study, that EPA has decided not to do given all ongoing studies presented in this action plan, changing priorities, and limited resources. In addition, the latter project was intended to focus on individuals who have received medical attention and who suspect that they have been affected by sewage sludge application practices to potentially isolate causative agents. The Agency believes that such a study may still have merit, but in order to respond to reported incidences of human illnesses and adverse health effects alleged to have been caused by land application of sewage sludge, EPA believes that it should include various stakeholders who have had experiences with incidences related to sewage sludge, stakeholders who may be interested in participating, and those