
International Joint Commission
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Summary of the Remedial Action Plan

Forum

September 27 - 28, 1991
Traverse City, Michigan
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On September 27-28, 1991 a Remedial Action Plan (RAP) Forum was held in conjunction with the International Joint Commission's (IJC's) 1991 Biennial Meeting. The RAP Forum was organized to encourage information exchange, discuss pertinent RAP issues currently being encountered and develop recommendations on overcoming barriers facing RAP development and implementation. Issues discussed included: expectations for Stage 2 RAPs; quantifying benefits of RAPs; addressing human health through risk assessment; RAP implementation strategies; creative financing; listing/delisting guidelines; writing consistent permits/control orders for RAPs; the role of industry in RAPs; habitat protection and rehabilitation; and contaminated sediment remediation. The aforementioned issues were discussed in either panel discussions or breakout sessions. In addition, Trinity Theatre of Toronto, Ontario demonstrated through a theater-like presentation how effective community communication techniques can result in building trust among RAP stakeholders.

Over 260 participants attended the RAP Forum, including citizens, representatives of government, industry, municipalities and environmental organizations, academicians and other stakeholders. A brief summary of each issue discussed follows.
Expectations for Stage 2 RAPs

As many of the Areas of Concern are entering the Stage 2 RAP development phase (i.e. selection of remedial actions), the Parties and the International Joint Commission co-sponsored a workshop in April 1991 to discuss expectations for Stage 2 RAPs. The proceedings of this workshop were released in a report entitled, Remedial Action Plans: Content and Key Issues. Through the active involvement of the participants, an outline was produced to identify the essential information or content for a Stage 2 RAP and to give guidance to agencies and individuals involved in preparing the Stage 2 RAP document. The structure, level of detail and content may be altered to address each site-specific situation.

The workshop steering committee identified 12 key issues pertinent to developing Stage 2 RAP documents. These issues include:

- Defining the minimum content for a Stage 2 RAP
- Incorporating habitat
- Embodying the ecosystem approach
- Securing commitments
- Embodying virtual elimination of persistent toxic substances
- Establishing quantitative goals
- Linking RAPs to larger efforts
- Managing RAP implementation
- Selecting preferred actions
- Evaluating benefits
- Determining meaningful public participation
- Incorporating a technical document into public consultation.

Based on a review of the information and conclusions of the workshop, the IJC Stage 2 RAP Workshop Steering Committee recommended that:

- the IJC, Parties and jurisdictions periodically sponsor RAP workshops on specific topics of common interest (e.g. successful approaches to public participation, creative financing, explicit accounting for environment-economy linkages, benefit analysis, comparing successful approaches to Stage 2 RAP development and implementation);
- the IJC further identify expectations and elaborate on the Stage 2 RAP review guidelines to be used in the IJC RAP review process;
- the Parties provide more specific guidance to the jurisdictions, based on this workshop report, as to what is expected in Stage 2 RAPs and how Stage 2 RAPs could be developed -- efforts must be made to ensure binational consistency;
- the IJC recognize the iterative and dynamic nature of RAPs (including that RAP documents represent a "snapshot in time") in its review of the plans; and
- the Parties and jurisdictions use the example Stage 2 RAP outline presented in Table 1 of the workshop report as a basis to provide guidance on content requirements, while at the same time recognizing the unique circumstances of each Area of Concern.

A general expectation was expressed at the RAP Forum that completion and acceptance of Stage 2 RAPs will lead to increased appropriations. As awareness of environmental problems is achieved during Stage 1 (i.e. problem definition and causes within the Area of Concern), environmental coalitions must be established to remediate the problems and prevent further degradation of the ecosystem. The success of RAPs, at all stages, hinges on the interaction and cooperation among all stakeholders, government, public and industry alike. In the end, Stage 2 RAPs must be politically viable, socially acceptable and economically feasible in order to result in effective remediation.

The power behind the development of a RAP is the public who volunteers its time, expertise and experience to develop the RAP in each Area of Concern. Therefore, the Stage 2 RAP process must be a useful and constructive use of people's time in order to sustain stakeholder involvement. Reporting milestones, making resources available — both human and financial — to carry out data collection, and giving the opportunity for the public to attend workshops will assist the expeditious development of RAPs.

Cooperation and good communication skills among all involved parties are needed to ensure innovative yet realistic remedial measures. RAPs have demonstrated through their institutional structures and resulting cleanup projects that they are a catalyst for change.
Quantifying Benefits of RAPs

To date, quantifying the benefits of RAPs has been only modestly pursued. Rather, the focus has been on costs associated with cleanup. A challenging task for RAP practitioners is to place an economic and social value on environmental improvements and benefits. Although economic analysis has its shortcomings, quantifying RAP benefits should be undertaken, to the extent possible, in every RAP process, because it can help move recommendations from the planning to implementation phase.

RAPs require a new way of thinking which analyzes the socio-economic and environmental implications of a decision. An economic analysis will normally examine the aggregate cost and benefits to society as a whole, yet it generally does not consider that the individuals who bear the costs may not be those who receive the benefits, or have the ability to pay the costs. It is important to involve the public to identify and weigh the costs and perceived benefits of a recommended remedial action.

Numerous methodologies are available, thus care must be taken to ensure that a given methodology (economic or scientific) is appropriate to the characteristics of the specific Area of Concern. In the future, all RAP coordination activities, at the IJC and at individual RAP team levels, should fully assess benefits received from the RAP process and ensure long-term financial support for RAP implementation, since the health of the environment is directly related to the socio-economic viability of an Area of Concern.

RAP Implementation Strategies

The management of RAP implementation requires the involvement of various stakeholders, including government, industry, technical/legal advisors and project managers who can ensure commitment at all levels. In all stages of the RAP process – public participation needs to be sustained, as the public creates the community will to implement the plan, and applies political pressure for funding and enforcement. The community must realize RAPs are a long-term commitment to ensuring a healthy environment in the future.

The following recommendations were developed at the RAP Forum regarding RAP implementation strategies.

1. The IJC should convene a workshop to explore methods to ensure RAP implementation, including new and existing laws and contractual agreements. The existing laws, regulations and standards should be reviewed and revised to ensure RAP implementation achieves its goals. Both the United States and Canada would benefit by seeking consistent standards, especially for the binational RAPs.

2. A Citizens’ Advisory Board to the IJC should be established to review and evaluate RAP implementation. In addition, local citizen advisory committees also should be established with the same role in each Area of Concern.

3. Each RAP should have a comprehensive education plan. Important components include: public outreach programs, “marketing” strategies, RAP information days, annual cleanup days, displays, newsletters, an information clearinghouse, and roundtable discussions that include reporting of milestones and success stories.

4. The IJC should clarify its standards for review of RAPs and be more specific on what it expects in RAPs.

Additional comments from participants included:

- RAPs should be incorporated into local decisionmaking, such as land use planning;
- an implementation strategy is essential for each RAP, and each recommendation should clearly outline the resources required, a time line and the responsible agencies; and
- information exchange between individual RAPs should be encouraged at the local level.
Creative Financing

As stated in the report, Review and Evaluation of the Great Lakes RAP Program, 1991, funding allocation for environmental issues appears rather volatile. Financing remedial actions is perceived as a major obstacle in RAP implementation and only a small number of RAP committees have explored financing strategies. The lack of such a strategy may be attributed to a lack of public understanding of financing mechanisms, the large amount of money needed, jurisdictional battles, and the size and financial health of communities.

Successful strategies worth noting are: Green Bay’s “quilt of funding,” where several financing mechanisms are integrated into one financing program; swapping fines for remediation using natural resource damage suits; and establishing watershed utilities/stormwater runoff fees for the use of a resource. Government and stakeholders need to be aware of financing mechanisms or a combination of mechanisms to secure sufficient funds required for remediation.

The process of financing remediation is as important or more important than the result, as it leads to greater understanding and agreement among parties. No one single party should be identified to bear the cost of remediation, as RAPs are a shared responsibility. If the public is designated as a contributing funding source, a public opinion survey should be administered to determine "willingness to pay" and to specify exactly what result will occur with the added expense. A variety of funding sources should be pursued, and every effort should be made to maximize use of existing sources. In addition, RAP committees should involve influential people to ensure high level commitments to implementation.

Addressing Human Health Through Risk Assessment

To date, little guidance has been given to assist RAP teams in adequately addressing human health issues. Traditional methods to determine acceptable levels of exposure to contaminants are insufficient. Much emphasis is placed on cancer and physical birth defects, but the cause and effect linkage of cancer and pollution is difficult to demonstrate through statistics. Recent evidence has emerged of a wide range of subtle illnesses (multiple chemical sensitivities) and that leads to the generalization that everyone is at risk, although subpopulations may have higher risks (e.g. fetuses, cultural groups, plant workers).

To better address human health, it is suggested that RAPs:

- place more emphasis on defining subtle effects;
- recognize the importance of communication — all health surveys should involve the public from the outset, and progress and results must be communicated fully; and
- availability of data from risk assessment should not forestall action.

In addition, participants felt that, in the best interest of all people in the Great Lakes basin, RAPs should be implemented immediately and embody a "healthy communities approach" consistent with the ecosystem approach in the Great Lakes Water Quality Agreement. This approach should be based on a broad definition of health (i.e. the state of complete physical, mental and social well-being, not just the absence of disease or infirmity).

Furthermore, it was suggested that the IJC should recommend that the Parties immediately develop a protocol to address human health in Areas of Concern. As a minimum, it should include a list of health issues in Areas of Concern, an information checklist to assess human health, a mechanism to provide advice to RAP committees and writing teams, and standard procedures to monitor exposure and health before and after remediation.
Listing / Delisting Guidelines
For Areas of Concern

The intent of the listing/delisting guidelines is to serve as indicators of use impairment for Great Lakes Areas of Concern and assist the IJC and its Boards in making recommendations for new Areas of Concern and reviewing all stages of remedial action plans. The guidelines were approved by the IJC in February 1991; every effort was made to make sure the guidelines are scientifically defensible, sensitive to public concerns, and pragmatic. RAP Forum participants described them as the "goalposts for remediation." The guidelines provide a "level playing field" for both countries, and can be used as benchmarks and to set priorities, especially for data collection and remediation. The guidelines could also help solve conflicts in international Areas of Concern.

To help RAP practitioners maximize use of the guidelines, the IJC could prepare a practical handbook for assessment of these guidelines and how RAP teams may use the guidelines. It is further recommended that for international Areas of Concern, one country should not delist an area on their own. Rather, it must be a joint decision based on uniform guidelines and procedures. Forum participants felt that the listing/delisting guidelines were a significant breakthrough in defining "How clean is clean?" and encourage RAP committees to use them.

Writing Consistent Permits / Control Orders for RAPs

A key issue identified in the Stage 2 RAP Workshop was linking RAPs to larger efforts. RAPs should be complementary to larger programs and vice versa. The process of remediation will often be expedited if it can be linked to another program or plan because the more people and plans behind a remediation effort, the more support there will be. Examples of these larger efforts are the National Pollutant Discharge Elimination System (or State Pollutant Discharge Elimination System) permit program in the United States and the approval and control order process in Ontario (control orders are issued under the Environmental Protection Act and the Ontario Water Resources Act stating specific tasks and timelines for compliance with pollution control and preventative measures; certificates of approval (C of A) are issued under the Ontario Water Resources Act for installation of pollution control equipment for sewage works). These programs have similar goals to RAPs: pollution reduction and compliance with enforceable effluent requirements.

Session discussants and the audience agreed on several areas that would make the permit/control order/C of A process more consistent with RAP goals from simple improvements in the existing process to changes in the administrative and legal system.

Improvements to the current system to make permits/control orders/C of A more consistent with the goals of RAPs are as follows:

- citizens need a better connection to the permit/control order/C of A process. Suggestions include:
  - have the permit/control order/C of A writers meet with the RAP public advisory committees;
  - inform interested parties when permits/control orders/C of A in the Areas of Concern are expiring so that they may comment on the new permits/control orders/C of A;
  - make permits/control orders/C of A shorter in duration;
  - have all permits/control orders/C of A expire at the same time within an Area of Concern; and
  - ensure that the permits/control orders/C of A are consistent with the goals of virtual elimination and/or zero discharge.

- the units (mg/L, ug/L, or ng/L) for monitoring requirements and effluent limits need to be made consistent throughout Areas of Concern.
The Role of Industry in RAPs

Industry has an important role in the RAP process, as a community member and as stewards of resource investments and technology. As a RAP participant, industry can share expertise, provide insight into operations, assist in developing consensus on RAP issues, provide data and concerns, and work to integrate and implement remedial actions. In the current RAP program, industry has identified the need for: (1) better communication; (2) greater flexibility in RAP teams; (3) more active involvement by industry, including developing consensus on planning and cleanup; (4) broader stakeholder involvement; (5) a more open, cooperative atmosphere; and (6) demonstrating improvements by industry.

The Lambton Industrial Society in Sarnia, Ontario is a model for industrial involvement in the RAP program. Activities of this environmental cooperative include sponsoring research and public outreach programs, monitoring ambient air and water quality, and providing data on emissions to the public and the government. Lambton Industrial Society’s programs demonstrate the value and necessity for a high level of cooperation and trust among the government, public and industry, which is essential for the success of the RAP program.

Recommendations put forth by industry to encourage RAP implementation include:

1. encourage voluntary pollution prevention by industry - it is less costly and can be more effective than regulatory approaches, since this approach is a positive motivator;
2. work cooperatively with industry to solve the problems instead of mandating action;
3. create a level playing field, including uniform liability;
4. ensure that economic competitiveness is addressed to meet the needs of small plants with limited resources where regulatory approaches to pollution prevention are enforced;
5. explore voluntary agreements and cooperative approaches as mechanisms to address specific RAP concerns, and use the RAPs to publicize milestones;
6. obtain better pollutant loadings and economic data;
7. increase industry participation in Stage 2 planning where financing, timelines and actions are addressed;
8. provide assistance to small industries that lack resources (e.g. networking with industrial associations, workshops);
9. distinguish between local and truly national policy issues, and ensure industry input is sought; and
10. take opportunities to raise local issues to the national level, where appropriate.
Habitat Protection and Rehabilitation

Habitat is generally defined as specific locations where physical, chemical and biological factors provide life support conditions for a given species. Physical habitat should be emphasized in RAP development since degraded plant and animal communities cannot be restored without the necessary quantity and quality of physical habitat.

Historically, embayments, harbours, connecting channels and river mouths that constitute the 43 Areas of Concern have contained diverse terrestrial, wetland and aquatic habitats that supported the vast majority of Great Lakes fish and wildlife diversity and productivity. Decades of municipal and industrial development have caused severe destruction to these habitat areas.

The listing/delisting guidelines address this specific issue through loss of fish and wildlife habitat as a use impairment, and six other impairments refer to the health and productivity of plant and animal communities. In recent years, many Areas of Concern have experienced redevelopment and a shift from heavy industry towards diverse waterfront uses. Therefore, Great Lakes communities should capitalize on the opportunity of waterfront redevelopment to protect and improve terrestrial, wetland and aquatic habitat. Further, RAP habitat protection and rehabilitation should "piggy back" on other local regional planning and development initiatives.

Physical, chemical and biological components must be addressed in order for physical habitat to support healthy, diverse and sustainable biological communities. In addition, the water level control boards must recognize the importance of water level fluctuations to the health and vitality of physical habitat as a life support system in the Areas of Concern.

Policy and institutional constraints also were discussed. Physical habitat often "falls between the cracks" and does not receive adequate attention in traditionally separate water quality management and fish and wildlife management programs. Agencies such as the Canadian Coast Guard and the U.S. Army Corps of Engineers have the authority and responsibility for shoreline development matters, but rarely are concerned with habitat quantity and quality. Moreover, there is often difficulty in translating international and national policy on habitat protection (e.g. net gain or no net loss of habitat) into local implementation where authority exists for land use controls. It is recommended that ways and means be explored to improve institutional arrangements and procedures for addressing habitat quantity and quality in the Areas of Concern.

It is recognized that habitat has been drastically lost or degraded in many of the Areas of Concern. Therefore, protecting and conserving existing habitats is recommended to receive highest priority. It is also strongly recommended that broad consensus be reached on habitat goals based on ecosystem integrity and humans living in harmony with nature. Physical habitat has largely been ignored or treated only superficially in most RAPs to date. Consequently, a step-wise approach for addressing physical habitat in RAPs was recommended, which:

1. defines geographic extent;
2. classifies and inventories existing habitat;
3. compares present habitat with previously existing habitat using all available historical documentation;
4. identifies and gives priority to critically important habitat needs;
5. reaches consensus on goals for habitat protection, mitigation, restoration and rehabilitation;
6. evaluates alternatives and selects strategies and techniques to achieve habitat goals;
7. addresses policy issues or other obstacles requiring resolution to implement strategies and techniques;
8. develops and implements an evaluation plan to assess the strategies and techniques to meet habitat goals; and
9. uses evaluation results to modify strategies and techniques as necessary to achieve habitat goals.
Concluding Remarks

As U.S. Chairman Gordon K. Durnil of the IJC noted in his introductory remarks,

**RAPs have pushed existing programs further and faster than otherwise could have been expected.** RAPs are serving as a catalyst for the implementation of existing programs and a planning mechanism to identify additional measures to fully restore impaired beneficial uses. In order to sustain the RAP process we must continue to place emphasis on: sustaining the RAP stakeholder groups, citizens’ advisory committees, and public advisory committees; encouraging public participation; seeking agreement among stakeholders at key points in the decisionmaking process, such as on the nature and scope of the problems; accounting for the interrelationships of RAPs to other planning and development efforts; assessing the consequences of any proposed actions; and building a record of success.

To the IJC, it is suggested that the new RAP review process be clarified and adequately communicated. Further, the IJC’s RAP review documents must be clear, honest, consistent and timely, and must clearly state whether or not Stage 1, 2, or 3 requirements are met.

To the Parties and jurisdictions, there is a need to clarify the role of government. Is it control? Will decisionmaking power be shared among stakeholders? Ideally, participants felt that the role of the government is not to control the RAP process, but to facilitate and manage it. Although the Parties and jurisdictions are primarily responsible for preparing RAPs, they are not solely responsible for implementing them. The mandate of lead government agencies should not restrict the RAP planning effort from properly addressing relevant issues such as habitat. It is very important that governments continue to provide the leadership and resources to sustain RAPs. Emphasis must be placed on prevention of conflict, however, conflict resolution may be required. It must be remembered that consensus is not always required and that minority opinions are acceptable. Over the next two years, the Parties and jurisdictions should place higher priority on connecting channel RAPs.

To business, industry, concerned citizens, and other stakeholders, their role is partnership in RAP development and implementation, from setting goals to monitoring use restoration. All community stakeholders must be active participants and inform the broader community of the RAP’s goals and initiatives. The substantial contribution of stakeholders demonstrates the significant role they have played thus far in the RAP program, and will continue to play in the future.