



Public participation in watershed management and the TMDL process: evaluation and improvement

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Background

Two steps in TMDL development:

1. Establishment of the maximum allowable pollution loading a water body can receive and still meet water quality standards
2. Development of an Implementation Plan (IP) to provide a framework for restoring water quality:
 - Define load reduction strategies
 - Set timeline for meeting water quality standards and address revisions if progress is not made
 - Estimate associated costs, benefits, and environmental impacts of reduction strategies
 - Define possible sources of funding

Public involvement in the IP development process is valuable due to:

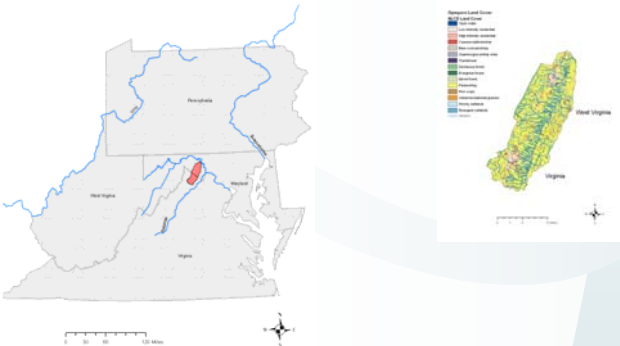
- importance of the water impairment issue and the need for successful abatement/restoration strategy;
 - existing uncertainties about pollution sources and their contributions; the effect of pollution on ecosystems, and the efficiency of preventive actions;
 - importance of acceptance of IP; and
 - diversity of interests of the affected parties
- Public involvement has the potential to raise the quality of IP, improve its acceptance and foster commitment to the implementation strategies decided.

Current TMDL IP development status:

- Most TMDL programs are at the stage of estimating allowable pollution loadings
- A few case studies are available to judge efficiency of IP development process and outcome.

Target Watershed: Opequon

- designated use: swimming
- listed as impaired in both Virginia (VA) and West Virginia (WV)
- bacteria water quality standard violation (VA, WV), benthic impairments (VA) and biological impairment (WV)
- VA part: TMDL is approved, IP is under development
- WV part: TMDL is under development and is scheduled for implementation in 2006.



Abstract

Based on existing examples and a survey of the literature, we review alternative forms of public participation in the development of a Total Maximum Daily Load Implementation Plan (TMDL IP). This is a first stage of research focused on developing a road map for public involvement for TMDL development and implementation. The research outcomes will be tested in TMDL IP development and implementation in the Opequon watershed, Virginia.

Objectives

- Facilitate public involvement in the TMDL development process in general, and the VA Opequon watershed in particular;
- Summarize the experience and develop a "road map" for public involvement in TMDL IP development process to use in the WV part of the watershed and in other states
- Facilitate an information exchange between VA and WV TMDL development teams.

Methods

- Analysis of public involvement into environmental decision-making based on published studies including approved/developing TMDL IP and case studies of other environmental planning decisions.
- Participation in public meetings related to water quality management in the target region, collaboration with WV Potomac watershed coordinator, and VA TMDL IP development team

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References: will be provided upon request

Summary of findings

Advantages of public participation:

- Gives multiple interests a chance to voice their needs and concerns,
- Broadens the range of potential decisions, increasing the opportunities for mutual gains among parties,
- Encourages the sharing of information and knowledge,
- Establishes community support for implementation,
- Builds trust among diverse interests,
- Allows power and responsibility to be shared,
- Increases a community's capacity to deal with future problems

Potential disadvantages of public participation in IP development:

- public involvement process can delay making final decisions. Citizen working groups may require assistance for assessing their own progress and identifying strategies for performance improvement
- if stakeholders' interests conflict, public involvement could lead to escalation of conflicts if discussions are not properly facilitated
- public participation in decision-making process does not always lead to public approval of the final decisions

Potential stakeholders

local, state, and federal agencies, local organizations, concerned citizens, point and non-point sources, public and private sectors, business and non-profit entities

Forms of public participation

- Public meetings
- Steering committees
- Working groups and focus groups
- Mailing questionnaires or self-addressed surveys attached to the draft of an IP to acquire feed-back
- On-site surveys
- A web-page with updated information, schedule of meetings and contact information for public comments

Determinants of success of public participation in the decision-making process [Landre and Knuth 1993]:

- degree of conflict of interests among affected parties
- opportunity for personal benefits
- personal values and environmental attitudes
- socio-economic environment (e.g., population change, mean household income, unemployment rate, labor force by industry sectors, percent change in employment by industry sectors)
- compatibility of local economic and environmental objectives

Possible measures of success of public involvement into the decision-making process [Landre and Knuth 1993]:

- degree of satisfaction with the process
- degree of satisfaction with the outcomes
- degree of involvement and ownership for resulting decisions
- participants' perception about their personal changes/learning experience through their involvement in planning process

Conclusions

- the approaches to public participation in development of TMDL IP varies; however, no link has been found between specific features of TMDL program (e.g., types of pollution sources, degree of impairment) and the level of public involvement
- no assessment of efficiency of public involvement in TMDL IP development process was found