

**WATERSHED-BASED PERMITTING UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES) PROGRAM:**

A SUMMARY OF RELATED BACKGROUND INFORMATION

Final Report

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SECTION 1: INTRODUCTION

The concept of watershed-based permitting is an innovative idea for better integrating the National Pollutant Discharge Elimination System (NPDES) Program into the watershed approach. It is not a new concept, however, and has been the topic of much discussion and research by EPA during the past decade. The 1994 NPDES Watershed Strategy reflects EPA's earliest support for this approach, with continued backing for the approach through the Watershed Framework (1996), Effluent Trading in Watersheds Policy (1996), and Draft Framework for Watershed-Based Trading (1996) and EPA's recently proposed Water Quality Trading Policy. As stated in the 1994 NPDES Watershed Strategy, "The NPDES program occupies a unique position within the overall water program, since it is both a key customer and an essential partner in supporting other Office of Water program activities and achieving many of our broader water quality goals."

In its latest effort to support this approach, EPA is reviewing the NPDES Watershed Strategy and other previous activities. Many of the lessons learned from previous research, pilot projects, and program implementation related to watershed management will help EPA to further promote watershed-based permitting. EPA intends to create a variety of resources (e.g., guidance documents, a compendium of watershed-based permitting examples, and an analysis of watershed organizations) that will educate stakeholders about the benefits of watershed-based permitting, facilitating stakeholder involvement to achieve buy-in, and moving from concept to implementation.

This report reflects EPA's recent efforts to better understand past research, discussion, policies, and guidance on the topic of watershed-based NPDES permitting. The goals of this report are as follows:

- To understand the technical and legal issues surrounding watershed-based permitting already researched and analyzed by EPA so new issues and areas can be addressed;

- To aid in the development of watershed-based permitting implementation and technical guidance documents that comprehensively addresses technical, regulatory, and administrative issues; and
- To glean information from past efforts on incentives and challenges to watershed-based permitting that could facilitate the development and issuance of watershed-based permits for future EPA pilot projects.

The remainder of this report provides a compilation and summary of background information relevant to watershed-based permitting. Information reviewed and summarized include EPA reports, strategies, policy memos, white papers, case studies, and meeting summaries that address aspects of watershed-based permitting and/or watershed management in general. A recent report on watershed strategies written by the National Research Council was also reviewed and summarized. This report, commissioned by Congress via several agencies, was developed to provide recommendations on watershed-based policy making and management.

This summary of existing watershed-based permitting information is organized as follows:

- **Section 2: Summary of Watershed-Based Permitting Background Information By Topic.** This section contains excerpts and summaries from documents compiled and annotated in Appendix A that directly relate to watershed-based permitting. General information on watershed management or other watershed approaches (e.g., water quality trading) are not contained in this section. Since EPA plans to use this information as it implements a comprehensive approach for promoting and facilitating watershed-based permitting, this section presents information by topics, including definition of watershed-based permitting, permit types, implementation issues, etc. Each excerpt and summary has a reference code that corresponds to the comprehensive list contained in Appendix A. This code allows for cross-referencing between the two sections.
- **Appendix A: Comprehensive Compilation of Watershed-Based Permitting Background Information.** For ease of use and reference, this report organizes information culled from these documents by category and by title. Appendix A contains a compilation of references, and excerpts related to watershed-based permitting, for all reviewed documents. This information is organized by the following categories:
 - A. NPDES and Watershed Permits
 - B. EPA Watershed Permitting Case Studies
 - C. Regulatory Issues
 - D. EPA Policy
 - E. Water Quality Trading

- F. Watershed Approach/Management
- G. Miscellaneous.

Each document within each category has a corresponding code (e.g., A5 is the fifth document under Category A, NPDES and Watershed Permits). This code is intended to facilitate cross-referencing between Appendix A and information contained in Section 2.

EPA may update this report with additional background information as research on watershed-based permitting continues.

SECTION 2: SUMMARY OF WATERSHED-BASED PERMITTING BACKGROUND INFORMATION BY TOPIC

This section provides excerpts and summaries of background information relevant to watershed-based permitting organized by the following topics:

- **Topic 1: Definition of Watershed-Based Permits**
 - Sub-Topic A: Characteristics
 - Sub-Topic B: Relationship to Effluent Trading
 - Sub-Topic C: Regulatory Flexibility

- **Topic 2: Watershed-Based Permit Types**
 - Sub-Topic A: Single Entity Watershed Permit
 - Sub-Topic B: Multi-Party Watershed Permit
 - Sub-Topic C: Common Condition Watershed Permit
 - Sub-Topic D: General Watershed Permit
 - Sub-Topic E: Other Permit Types

- **Topic 3: Implementation Issues**
 - Sub-Topic A: Basin-Wide Permit Synchronization
 - Sub-Topic B: Potential Transaction Costs
 - Sub-Topic C: Scope of Permit Coverage
 - Sub-Topic D: Flexibility in Wet Weather Permitting
 - Sub-Topic E: Permit Applications
 - Sub-Topic F: Multi-Media Considerations

- **Topic 4: Integration/Accountability of Nonpoint Sources**
 - Sub-Topic A: Participation Mechanisms
 - Sub-Topic B: Regulatory Considerations
 - Sub-Topic C: Potential Benefits/Incentives
 - Sub-Topic D: Enforcement
 - Sub-Topic E: State Approaches to Nonpoint Source Involvement

- **Topic 5: Benefits/Incentives**
 Sub-Topic A: Potential Benefits of Watershed-Based Permitting
 Sub-Topic B: Incentives for Participating in Watershed-Based Permitting
 Sub-Topic C: State Perspectives on Benefits of Watershed-Based Permitting
 Sub-Topic D: Benefits Related to General Watershed Management Approach

- **Topic 6: Challenges/Barriers**
 Sub-Topic A: Challenges with Using the NPDES Program to Promote the Watershed Approach
 Sub-Topic B: Challenges Associated with Staff and Resources
 Sub-Topic C: Challenges Associated with General Watershed Management
 Sub-Topic D: Challenges Associated with Measuring Success
 Sub-Topic E: Conflicts Between Watershed Management and Other Programmatic Goals
 Sub-Topic F: Challenges Related to Differences in Programmatic/Regulatory Schedules

- **Topic 7: Enforcement Issues**
 Sub-Topic A: Failure to Meet Water Quality Standards
 Sub-Topic B: Failure to Meet Permit Requirements
 Sub-Topic C: Reporting to Permit Compliance System
 Sub-Topic D: Defining Liability

- **Topic 8: Public Participation/Education/Outreach**
 Sub-Topic A: Role in General Watershed Management
 Sub-Topic B: Role in NPDES Permitting

- **Topic 9: Performance Measures/Indicators**

- **Topic 10: Integration with Other Water Programs and Watershed Management**
 Sub-Topic A: Total Maximum Daily Load (TMDL) Program
 Sub-Topic B: Other Programs

- **Topic 11: General Recommendations**
 Sub-Topic A: Policy and Guidance
 Sub-Topic B: Monitoring
 Sub-Topic C: Model Permits
 Sub-Topic D: Pilot Projects
 Sub-Topic E: Areas for Further Research

- **Topic 12: Potential Leads to Additional Information**

Background information contained under each topic is linked to the comprehensive information contained in Appendix A by category letter, document number and page number. Because information is in the form of excerpts from documents, much of the language is as it appears in the original document. Where duplicative information on a topic exists, language has been condensed and integrated to increase the usefulness of this report. Reference information provided at the end of a topic or sub-topic allows the user to identify the original language in Appendix A.

TOPIC 1: DEFINITION OF WATERSHED-BASED PERMITS

Sub-Topic A: Characteristics

A watershed permit has four distinguishing characteristics:

- It is voluntarily selected: watershed permitting enhances rather than replaces the existing NPDES regulatory framework and is applied in places that select a watershed approach to meeting water quality standards and other watershed objectives; point source dischargers covered under a watershed permit would continue to have individually determined technology-based requirements.
- It is geographically- or place-based: watershed permitting can be applied to an entire watershed, a sub-watershed, a county, or a community depending upon specific circumstances.
- It is enforceable: watershed permits are regulatory mechanisms that are enforceable by both federal and state authorities, but also may rely on local enforcement authorities for many nonpoint sources.
- It represents an "outside the box" approach to source control: watershed permitting moves EPA, states, and watershed communities beyond the current source-by-source permitting framework to facilitate consideration and management of all pollutant sources and stressors in a watershed, including multi-media sources such as air deposition to waterbodies.

Appendix A Reference: (A4, p. 2)

A watershed permit may take a variety of forms and could cover multiple municipal and industrial point source facilities and an array of nonpoint sources (e.g., runoff, air deposition) as selected by local stakeholders and the permittee(s) and identified in the permit. The ultimate objective of implementing a watershed permit is to enhance both the environmental and cost-effectiveness of watershed management by providing more options and greater flexibility to communities in meeting water quality standards and watershed goals.

Appendix A Reference: (A4, p. 2)

The watershed permit agreement must show that it is at least as protective as what EPA or the state would have required of the permit holders in the absence of the agreement. The equivalency test would be a key permit approval criterion for EPA.

Appendix A Reference: (B2, p. 17)

Sub-Topic B: Relationship to Effluent Trading

Under a watershed permit, "trading" could happen as part of the process/mechanism allocating responsibilities among participants, either before or after anyone actually received an allocation. So it might look more like a negotiated allocation than a trade, at least as envisioned under the current regulatory setting.

Appendix A Reference: (A8, p. 10)

Sub-Topic C: Regulatory Flexibility

What flexibility might states have to implement one or more version(s) of a watershed permit without any policy, regulatory, or statutory changes at the federal level? Use Massachusetts situation as an example (i.e., going for delegation, state legislative changes anyway, could integrate something like this).

Appendix A Reference: (A7)

TOPIC 2: WATERSHED-BASED PERMIT TYPES

Sub-Topic A: Single Entity Watershed Permit

Definition

In this model, a single entity (e.g., a municipality or multi-jurisdictional basin authority, or a newly created umbrella organization) is the permit holder and is the sole party legally responsible for complying with the terms of the permit. Permit requirements are oriented toward ambient results; thus, the permit holder becomes a "regulator" and must ensure that the participating sources take actions which will allow it to meet its permit requirements. The terms and conditions of the agreement between the permittee and participating sources should grant the entity authority over its members and specify enforcement powers and processes.

Appendix A Reference: (A4, p. 3; A6, p. 11)

Potential Benefits/Incentives

The benefit of this model is that it is a community-based environmental protection approach. This model provides the greatest flexibility for communities to achieve local goals for watershed protection.

Appendix A Reference: (A6, p. 12)

Potential Challenges/Barriers

If the entity that would serve as the permittee does not own or operate a point source discharge, a single-entity permit is more difficult to implement because the potential permittee is not subject to the NPDES regulations.

Appendix A Reference: (A6, p. 12)

Evaluating compliance and enforcing permit conditions against permittee in a manner that does not create overwhelming potential liability, and is equitable relative to the permittee's authority to control sources in the watershed is challenge associated with a single-entity permit.

Possible solutions include:

- Require permittee to have authority to enforce violations against dischargers (issues with establishing regulatory program structures need to be assessed).
- Maintain EPA authority to enforce directly.
- Develop effective enforcement policy.

Appendix A Reference: (A6, p.13)

The permittee would have to obtain the legal authority needed to impose and enforce pollution control requirements on all relevant sources within the watershed.

Appendix A Reference: (A6, p. 12)

One of the big arguments against a single allocation, and presumably a single entity watershed permit, is certainty. If you have an overall allocation there is the perception of a lack of certainty and if that allocation changes from year to year - well, you are constructing facilities, you're issuing bonds, you're doing financing - all that requires some certainty. In the past, it has been a somewhat political decision as to how allocations were done and who got much, so people are concerned about having to engage in that kind of process annually. There may need to be some kind of rules, some kind of baseline, to make people more comfortable.

Appendix A Reference: (B3, p. 4)

Applicability

This model could be used if an organization or entity has the authority or jurisdiction over the actions of multiple sources within a watershed or subwatershed.

Appendix A Reference: (A6, p. 12)

Regulatory Considerations

One statutory issue associated with use of this model is that a permitted entity would not necessarily be an NPDES discharger. EPA does not have explicit authority to issue NPDES permits to entities that are not direct dischargers.

Appendix A Reference: (A6, p. 13)

There is an issue that different sets of laws will come into play depending on what type of organization the entity is (e.g., public, private-for-profit, and/or private-not-for-profit).

Appendix A Reference: (A8, p. 8)

Implementation Considerations

EPA should have overfilling authority in "delegation" model. Could have entity (or individuals) post a performance bond in case there are problems. Through "deeming" EPA may be able to get to an individual source through a watershed permit issued to a single entity.

Appendix A Reference: (A8, p. 8)

Public involvement is important.

Appendix A Reference: (A8, p. 8)

Is financial stability of the Entity important? Fiscal analysis needed? Need to look like a municipal authority and be financially self sufficient? (Pretreatment and POTWs, MS4)
Appendix A Reference: (A8, p. 9)

Monitoring

EPA could dictate ambient monitoring requirements, but effluent monitoring is up to the entity permittee - what to do, which facility, etc. Should have an appropriate mix of source and ambient monitoring, and some modeling may be involved. Entity has to do, pay for, require, or otherwise get ambient monitoring results to EPA to show that the watershed is reaching its goals. Sources may do individual monitoring to report to Entity. Either way, public will still want to know about discharges and TRI and PCS are two places where they can still get information.
Appendix A Reference: (A8, p. 7)

Current Use By States

The Cherry Creek Basin Authority is definitely interested in handling phosphorus through a single entity watershed permit, but would consider broader coverage of other parameters as well (most likely, after trying it out with phosphorus only).
Appendix A Reference: (B3, p. 3)

Sub-Topic B: Multi-Party Watershed Permit

Definition

In this model, two or more discharges jointly hold a single permit. Some permit conditions may specify joint and several liability for compliance. Other provisions may be written to apply to a subset of signatories or an individual source.
Appendix A Reference: (A4, p. 3)

Two or more point source dischargers could jointly hold an NPDES permit with conditions derived in part from watershed-based concerns and in part from effluent limits or water quality standards applicable to the permittees.
Appendix A Reference: (A6, p. 7)

Specific multi-party watershed permit conditions may apply to one, some, or all of the permittees and cover one or more parameters relevant to the water quality in the watershed.
Appendix A Reference: (A6, p. 7 - 8)

Potential Benefits/Incentives

Benefits of this model include synchronization of permit issuance across a watershed for multiple parties, which allows coordinated monitoring, assessment and characterization, prioritization, planning, and implementation (including permitting).
Appendix A Reference: (A6, p. 8)

One advantage of this approach is that it could facilitate the development of a coordinated monitoring network, which would improve assessment of watershed health, while potentially reducing monitoring costs.

Appendix A Reference: (A6, p. 8)

Some of the administrative aspects of permitting could be streamlined under the multi-party model.

Appendix A Reference: (A6, p. 10)

Potential Challenges/Barriers

Challenges associated with the multi-party model include:

- Simplifying the potential complexity and decreasing associated costs of administering a multi-party NPDES permit.
- Addressing nonpoint sources as parties potentially subject to the permit
- Determining the nature and extent of watershed monitoring and party responsible for such monitoring
- Identifying how noncompliance with permit conditions applicable to all permittees (e.g., total loading cap) would be determined and enforced.
- Implementing authority for multi-party permits is not clearly articulated.
- Providing for multi-party permit applications.
- Developing and issuing permit after watershed planning.
- Developing draft permit for multiple parties would be complicated process (but no more complicated than synchronized permit).
- Appealing a single provision of the permit would prevent issuance of entire permit.
- Revoking and reissuing reopens the entire permit, which would be unnecessarily complicated for a multi-party permit.
- Terminating a permit would apply to all parties to the permit, which may not be warranted where cause for termination exists for only one discharger.

Appendix A Reference: (A6, p. 10)

Possible solutions to challenges associated with the multi-party model include:

- Focus the scope of the permit to include only those pollutants or parameters that pose a problem within the watershed.
- Use state authority over nonpoint sources to include such sources in the permit
- Develop a coordinated monitoring network.
- Use traditional monitoring for permit conditions applied at point of discharge.
- Establish a monitoring consortium comprising federal, state, and local organizations.
- Expand NPDES authority for ambient monitoring.
- Require ambient loading standards to be calculated, applied and monitored at point of discharge.
- Investigate circumstances where a multi-party permit has been applied and the legal basis for its use.
- Promulgate group application provisions.
- Identify source, procedure, responsibility, and funding for obtaining watershed data.

- Use individual applications; however, no provisions require submission of data needed to characterize the watershed.
- Develop and provide guidance regarding the watershed planning procedure.
- Review permit development and issuance procedure to determine whether changes could be made to streamline development of multi-party watershed permits.
- Achieve consensus among permittees and stakeholders before proposing permit.
- Revise 40 CFR Section 124.5 to state that revocation and reissuance of multi-party permit only reopens permit conditions applicable to relevant dischargers.
- Address how trading/allocation of watershed-based loads would be incorporated into existing multi-party permits (e.g., minor modification subject to notice and approval).
- Revise 40 CFR Section 112.62 to allow for termination of a single party from multi-party permit and develop policy and procedure for implementing termination.

Appendix A Reference: (A6, p. 10)

Applicability

This approach is particularly appropriate for watersheds with an active watershed protection organization that includes a full range of stakeholders whose interests could be served or affected by watershed permitting. This type of watershed organization already brings together the potential co-permittees of the multi-party permit to work cooperatively under a single water pollution control mechanism.

Appendix A Reference: (A6, p. 8)

Multi-party watershed permits are most applicable to watersheds with a manageable number of point sources subject to NPDES permits or to a group of similar point sources.

Appendix A Reference: (A6, p. 8)

Regulatory Considerations

The multi-party watershed permit presents no obvious statutory issues.

Appendix A Reference: (A6, p. 9)

Current Use by States

Washington's TMDL General Permit concept is similar to EPA's "multi-party" watershed permit concept in that a single permit would cover more than one discharger, pertain to one or more pollutants, and pre-existing NPDES permits would continue to operate and cover non-TMDL parameters and requirements. One of the key features of the TMDL general permit is that it would allow the state to implement TMDLs without having to reopen every affected NPDES permit - an option that could offer considerable time and cost-savings. It also would enhance the potential for trading by naming all relevant dischargers and showing their wasteload allocation in one document (the general permit).

Appendix A Reference: (B4, p. 2)

Enforcement

Enforcing permit limits that address ambient conditions will prove much more challenging due to difficulties in determining the cause of permit violations. It may be more practical to use

ambient permit conditions as a feedback mechanism for identifying and addressing problems within the watershed rather than as enforceable conditions.

Appendix A Reference: (A6, p. 11)

Sub-Topic C: Common Conditions Watershed Permit

Definition

In this model, point sources would still hold individual NPDES permits, but all participating point sources would share a common or related set of condition, applicable to one or more parameters, that would be specified in their NPDES permits. Individual NPDES permits are the only regulatory mechanism that exists in this model. The individual sources may or may not have a MOU specifying any other agreements among them, or documenting any negotiations leading up to the permit conditions.

Appendix A Reference: (A4, p. 3)

Applicability

Most applicable to watersheds with numerous point source dischargers currently subject to NPDES permits that are the primary sources of water pollution or watershed degradation.

Appendix A Reference: (A6, p. 4)

This model could apply in watersheds in which point source dischargers face more stringent discharge limits because of a TMDL or the development of more stringent water quality standards.

Appendix A Reference: (A6, p. 4)

Regulatory Considerations

No obvious statutory impediments would prevent this model from being implemented. In addition, given the existing NPDES regulations, no major regulatory changes would be needed.

Appendix A Reference: (A6, p. 5)

Implementation Considerations

Common conditions could be implemented through a phased approach (i.e., amending permits as they expired or modifying them over a set period of time), but issues of equity (i.e., who goes first) among permittees could warrant synchronization.

Appendix A Reference: (A6, p. 4)

This model integrates watershed-based concerns into the NPDES permitting framework in the simplest and most direct manner possible, and is most consistent with the current NPDES permitting program.

Appendix A Reference: (A6, p. 4)

Current Use by States

Several states are currently using this approach.

Appendix A Reference: (A6, p. 3)

Washington State Department of Ecology has reorganized its wastewater permitting process around watersheds by synchronizing permits and establishing schedules for basin investigations, modeling, and evaluation. North Carolina and Massachusetts are implementing similar permit programs on a watershed basis.

Appendix A Reference: (A6, p. 3 - 4)

Nonpoint Source Participation

Specific challenges associated with implementing controls on nonpoint source pollution include ensuring adequacy of state Section 319 programs and addressing uncertainties associated with trading (e.g., providing reasonable assurance that nonpoint sources will comply with terms of trade, monitoring, and enforcing compliance).

Solutions:

- Support implementation of trading pilot projects under TMDL or equivalent analysis or remediation plan.
- Strengthen state Section 319 programs, including increasing watershed focus.
- Develop monitoring requirements for both point source and nonpoint sources.

Appendix A Reference: (A6, p. 6, in table)

Sub-Topic D: General Watershed Permit

Potential Barriers/Challenges

Potential challenges associated with a general watershed permit include:

- Expanding current limit of general permits beyond a single category of discharges or facilities.
- Obtaining coverage of nonpoint sources under general permits.
- Monitoring large numbers of covered permittees.
- Monitoring ambient conditions within the watershed.
- Enforcing against nonpoint sources.
- Using ambient data.

Appendix A Reference: (A6, p. 16)

Potential solutions to challenges associated with general watershed permits include:

- Amend general permit regulations to allow application to multiple categories of discharges within watershed.
- Amend general permit regulations to allow general permits to focus on pollutant or problem in watershed.
- Clarify application of multiple NPDES permits to single permittee/outfall.
- Draft general permits that address nonpoint source pollution and seek voluntary compliance.
- Use incentives to promote compliance and identify non-participants for more prescriptive approaches under state nonpoint source authority.
- Use available state authority to develop and issue general permits that address nonpoint source pollution.
- Impose self-monitoring or self-reporting requirements or rely on ambient monitoring only.

- Develop coordinated monitoring network, which could be conducted by state or regional authority and supported with federal funding.
 - Use noncompliance to trigger stipulated penalty and/or adjustment of permit conditions.
- Appendix A Reference: (A6, p. 16)

Applicability

EPA or states could use general permits to address a watershed dominated by a single category of point sources with similar discharges (e.g., CAFOs), particularly where controls similar to BMPs would be effective in addressing pollutants of concern to the entire watershed.

Appendix A Reference: (A6, p. 14)

Implementation Considerations

One way to make general permit requirements more amenable to watershed permitting is to allow issuance of general permits targeted at controlling specific pollutants, regardless of the category of their point sources. If such a change were made, EPA or a state could issue a general permit for an entire watershed that could focus on nutrient control. For example, Arizona law takes a similar approach by providing for the development of agricultural general permits for "regulated agricultural activities," which are defined as the application of nitrogen fertilizer or CAFOs. Similarly, Washington State Department of Ecology staff have discussed the concept of a TMDL general permit, which would focus on a TMDL parameter(s) of concern, cover multiple dischargers, and apply in addition to the non-TMDL requirements in existing NPDES permits.

Current Use by States

At this time, the use of watershed specific general permits is relatively rare, however, several states are exploring their use.

Appendix A Reference: (A11, p. 8)

Massachusetts plans to use industry-specific general permits for most minor permits. Currently there is an NPDES general permit for non-contact cooling water and three other general permits are being drafted (construction site dewatering, water treatment plant backwash, and ground water recovery). As each watershed enters its management cycle, an inventory of all minors in the watershed will be developed using a PCS search. General permits will be issued to those facilities where the appropriate general permit exists.

Appendix A Reference: (A11, p. 8)

Ecology is developing basin-wide general permits whereby permit conditions can be set for groups of similar dischargers in a watershed to specifically address the water quality needs of a given area.

Appendix A Reference: (A11, p. 9)

Sub-Topic E: Other Permit Types

Permit by Rule

This mechanism could be used to establish a watershed or statewide or regional cap, regulations to govern trading under the cap and obviate the need to obtain a permit for every trade. This approach would be easier to enforce, rules vs. permits (no contested case/judicial reviews, just direct enforcement of rules). This would also minimize side bar contracts and agreements thereby minimizing transaction/administrative costs. This is the concept that Michigan is looking into.

Appendix A Reference: (B4, attachment)

Branch Model: Co-Permittees or General Permittee.

If enforcement is direct, how would you ever get nonpoint sources to sign up in this model?

If you determine a compliance failure exists, who do you go after?

How is this different from trading? Under a watershed permit, "trading" could happen as part of the process/mechanism allocating responsibilities among participants, either before or after anyone actually received an allocation. So it might look more like a negotiated allocation than a trade, at least as envisioned under the current regulatory setting.

Appendix A Reference: (A8, p. 9-10)

TOPIC 4: IMPLEMENTATION ISSUES

Sub-Topic A: Basin-Wide Permit Synchronization

Adjusting Permit Terms

Sometimes adjustments have to be made to basin and/or permitting schedules in order to meet the 5 year time frames. State efforts to address this problem have included primarily two approaches: prioritizing permit issuance and/or adjusting permit terms as needed. For example, North Carolina developed an expedited permit renewal prioritization process whereby permits within a basin were given a point value based on the complexity and average amount of time it would take to issue the permit. Other states have issued short term permits, as needed, to keep to the 5 year basin schedule. Some states have issued 3 or 4-year permits if permits were issued later than the schedule required (e.g., development of new nutrient criteria), and let some permits expire when there was only one or two years left until the scheduled basin permitting date. Finally, a few states split up the NPDES cycle in some basins and make adjustments so that permits within the basin are not issued all together. When permits come up for reissuance before or after a cycle, a state will issue administrative approvals for off year permits with a public notice. Almost all states agreed that the CWA and EPA rules should be amended to allow states the flexibility to issue permits for longer than five year terms (e.g., 7, 8, and 10 years permits were discussed).

Appendix A Reference: (F1, p. 36)

EPA and states have basically three choices in addressing the basin scheduling problem:

First, states could abandon attempts at establishing management schedules within basins and instead conduct program activities according to each programs priorities. States argued against this idea, however, and asserted that experience shows that the lack of a schedule turns the management process into a “black box” where participants no longer know when a focus of activities will be occurring. This results in inefficient use of resources, lack of coordination, and disengagement by stakeholders from the management process. The advantage of the five year planning cycle is that it allows all participants to know far in advance when certain activities will be occurring and identifies opportunities for leveraging and sharing of resources.

A second approach would be to amend the Clean Water Act to synchronize all programmatic and reporting schedules on a 5 year cycle. EPA headquarters staff argued that it would not be feasible at this time nor even desirable to open up the CWA re-authorization process for a wholesale revision. In addition, some program activities (triennial review for standards, biennial reporting on state water quality) are best done within a shorter time frame to keep up with technological and environmental changes. On the other hand, EPA and states should work together to streamline program and reporting requirements wherever appropriate to synchronize them with basin schedules.

The third and more practical approach to resolving the perceived conflict between the basin cycle and programmatic requirements would be for states to recognize the limits of the 5 year rotating basin cycle and its relative importance to the watershed approach. Many states appear to be taking the cycle more seriously than was originally intended. *It is not an end in itself nor should it be viewed as the most important criterion for a state’s adherence to the watershed approach. The rotating basin approach should be viewed as merely one possible means or tool for focusing state resources and organizing collective and coordinated efforts where it makes sense to do so across state agencies at the basin or watershed level.* It should be viewed as a dynamic and ongoing process that when used wisely is adaptable to changes in resource demands and environmental events. For example, states that complain that they cannot complete implementation or other management activities within the 1-2 year time frame of a five year cycle need to recognize that activities need only be initiated within these time frames and not completed. Implementation is ongoing and should be periodically reshaped and adapted as needed when basin plans are updated or modified. In fact, states should consider their implementation of the rotating basin approach successful if they are able to focus up to 70% to 80% of their resources and activities according to the basin cycle. States need to identify and find appropriate ways to manage those water program activities - such as nonpoint source controls - that may not fit five year cycle approach.

Appendix A Reference: (F1, pp. 41-42)

Benefits/Incentives

State permitting managers suggested that basin-wide permitting has had a number of positive impacts:

- (1) Basin-wide planning process provides an effective organizing function for all stakeholders to focus on a myriad of water quality issues. It provides communities within a basin with a process and a timeline to address water quality issues. For example, Ohio's effort to integrate basinwide planning with the NPDES permit process has helped gain community support for implementation issues and it causes dischargers to consider the entire watershed.
- (2) Basin-wide public hearings for groups of permits enhances program efficiency and public participation. State permit managers maintain that it is more efficient to have one large, longer meeting for a subwatershed rather than numerous smaller hearings on individual permits. Public meetings for groups of permits helps focus the public and permitting groups' resources on addressing the most important water quality issues within the basin or watershed.
- (3) Basin-wide permitting encourages dischargers to work together to develop more effective and equitable permit limits. The basin planning process allows permittees to compare their permits with other dischargers in the same area and this helps set permit limits that are more equitable. For example, in North Carolina the process has facilitated the formation of NPDES discharger coalitions to determine the most equitable approach to reducing loadings. In several states, NPDES permits have been written so that dischargers must cooperate in finding the causes of impairment in a watershed.
- (4) Basin-wide permitting has made the permitting program more strategic and planning oriented. *First*, permit writers often work as part of a team and consult regularly with other water quality staff. By assigning permit writers coordination roles for basins, it has helped make them more knowledgeable and involved in all aspects within a basin (i.e., other dischargers and permit limits, monitoring data, sources of impairment, etc.) *Second*, the basin-wide monitoring and assessment process has resulted in better and more comprehensive wasteload models which results in better and more effective limits for permits. More stringent standards and limits can be put in place for basins that are deemed to be under severe stress. It has also helped to recognize the importance of other stressors, like non-point sources, in contributing to water quality problems. As a result, permits are being evaluated more holistically in terms of the watershed. Some state permit managers hope that this could lead to watershed-based permits in the future. *Third*, before the basin cycle approach, NPDES minors were more or less ignored in some states. In some basins, however, minors were suspected of having worse impact. Under the basin approach, several states are now able to monitor minor dischargers more often and there is a better knowledge of their condition.

Appendix A Reference: (F1, pp. 34-35)

States felt that synchronizing the issuance of NPDES permits according to basins has improved modeling and analyses of effluent discharge impacts, receiving waters' assimilative capacity, and cumulative effects on aquatic systems. In addition, many states noted that addressing all permits

in a basin at the same time helped to focus permitting activities, reduced travel time for monitoring and inspections, and allowed more time for inspecting smaller dischargers that had escaped scrutiny in the past. In one state, basin-wide permitting has improved the state's ability to issue permits that support watershed-based TMDLs.

Appendix A Reference: (F1, p. 14)

Barriers/Challenges

States that have points sources grouped unevenly around the state often find it difficult if not infeasible to synchronize the issuing of NPDES permits or conduct inspections at wastewater facilities according to an established 5 year basin-wide schedule. In addition, NPDES permits might need to be reissued outside of the basin cycle because a plant wants to expand or the state may need more time to address unusually complex permitting issues. Special monitoring efforts are sometimes needed to address citizen complaints or gather more data for TMDL development. Other programs (e.g., wetland permitting, groundwater permitting) require staff to respond to violations despite regular scheduled activities.

Appendix A Reference: (F1, p. 16)

Basin-wide permitting has resulted to some extent in an increase in expired permits in some states as they attempted to adjust their permitting programs to the 5 year cycle. This is especially the case during the first 5 year or "transition" cycle of the approach. Key barriers and challenges that prevent states from implementing their NPDES permitting programs according to the 5 year cycle are:

- (1) Uneven permitting workload across basins. Dischargers are not distributed evenly across most states. Some basins have no point sources while other may have a large number.

- (2) Special federal initiatives and new programs divert resources from basin permitting cycle. For example, up until 1997, most of Ohio's permits were on the 5 year cycle. In 1998, the Great Lakes Initiative took time and money out of the normal permitting process and, as a result, some Ohio River and Lake Erie permits - representing about 10-20 percent of the total permits in the state - do not follow the 5 year schedule.

- (3) EPA and court-imposed TMDL schedules and review process. The TMDL process is causing some problems with issuing permits according to the 5 year basin schedule in some states (e.g., Ohio). States now have the additional task of recalculating permit limits to fit the TMDL process. Some states are finding that this often cannot be done within the 1-2 year time frame allowed for implementation within the basin cycle. For a state like Oregon where the watershed approach is TMDL driven, permit reissuance is based entirely on the TMDL schedule. It has been a year and a half since the schedule was developed but following it has

been spotty. Some permits are up for renewal in watersheds where TMDLs will not be done any time soon. Since there are not many TMDLs done yet, this has resulted in a serious backlog in permit reissuance.

- (4) State laws limiting permit terms. Texas has a law that prohibits its NPDES permitting agency from issuing permits with terms less than two years. This makes it more difficult to bring permits into sync with the basin cycle because the state is restricted in using short-term (one year) permits as a means to coordinate permit re-issuance with the cycle..

- (5) Pressure from regulated community to address permitting issues when needed. In Texas, despite a state law that requires all permits within basins be issued in each basin within the same year, some permittees have been unwilling to “wait their turn.” State permitting staff find that major dischargers are unwilling to postpone facility expansions or alterations so that their permits will be in sync with other permits within the basin. Such requests are usually dealt with on an “as needed” basis. As a result, major dischargers, unlike minor industrial facilities and municipalities, are less likely to be on cycle as their applications are given priority for processing and they tend to expand more often than minors. State managers estimated that about 50-70 percent of permits have expiration dates that corresponds to the basin cycle plan.

Appendix A Reference: (F1, pp. 35 - 36)

When Ecology staff went around the state at the beginning of its conversion to basin permitting, a lot of people were initially nervous about the idea of "watershed permitting" before finding out that basin permitting meant only that permits would be synchronized, and not altered in any other way.

Appendix A Reference: (B4, p. 3)

Sub-Topic B: Potential Transaction Costs

Watershed analysis, trading, and watershed permit development may impose significant burdens on permit writers and permittees. These costs will take the form of data collection requirements (for identifying current loadings and ensuring the performance of BMPs), additional analysis on the part of the permit writer, and additional administrative requirements associated with writing pollutant trading into NPDES permits, tracking pollutant trading, enforcing more complex permits, etc. An effective watershed permitting framework will identify ways to minimize these transaction costs and keep permit backlog to a minimum.

Appendix A Reference: (A2, pp. 6 - 7)

Ecology (Washington State) has a relatively sophisticated time-keeping system because it must document the cost of the "services" it provides to secure sufficient funds from the legislature to support its programs. It would be possible to select a TMDL that will be implemented and carefully track activities and level of effort to determine its "cost."

Appendix A Reference: (B4, p. 3)

While the approaches are moving in the right direction, it seems that we are still in the permit box. I do not think the additional "flexibility" will outweigh the increased costs of duplicative permitting and contracts of the options presented.

Appendix A Reference: (B4, Email from Dave Batchelor of MI state water quality program)

Sub-Topic C: Scope of Permit Coverage

Identifying Appropriate Watershed Scale

Watershed permits should be developed by selected subwatersheds, not the entire Charles River Watershed. Subwatersheds vary dramatically throughout the watershed in terms of hydrology, demographics, water resource stressors, and infrastructure arrangements, and in terms of the strength and role of local watershed associations. Therefore, to be workable, the watershed permit should be developed at a subwatershed scale and in a manner that recognizes these differences. Since focus on the subwatershed might eliminate effective solutions to address watershed-wide issues, mechanisms should be developed and allowed for agreements between entities of different subwatersheds.

Appendix A Reference: (B2, p. 17)

Failing to match the scale of decisionmaking to the scale of the watershed can lead to two problems. If the decisionmaking body has authority over an area that is smaller than the watershed at issue, its policies will probably fail to take into account the impact that local decisions can have downstream. Those who benefit from such narrow decisions may not bear their true economic or environmental costs. If, on the other hand, a decisionmaking body has authority over an area that is too large or is dominated by federal interests, it will likely fail to take into account local interests that in the end must bear many of the ramifications of the decisions. Matching the decisionmaking authority with the watershed in question according to scale and geographic area thus helps resolve the question of who benefits and who pays for watershed resources, including goods and services, and makes it easier to reach compromises.

Appendix A Reference: (F4, p. 201)

Specific watershed problems must be approached in distinctive ways, and determining the appropriate scale for the resolution of any problem is an essential first step. Both the structure of the watershed management organizations and the nature of the activities undertaken should be matched to the scale of the watershed. The range of stakeholders varies with scale and must be clearly defined so that the costs and benefits associated with any plan are fully taken into account. Watershed approaches are easiest to implement at the local level; they can be most difficult to implement at large scales where the political, institutional, and funding decision-making grows especially complex.

Appendix A Reference: (F4, p. 274)

The watershed permit should define its own geographic area.

Appendix A Reference: (A8, p. 2 - 3)

Identifying Priority Facilities

Conduct a "sweep" of each priority watershed, as necessary, using traditional enforcement authorities (e.g., 308 letters or inspections) to identify all facilities which will be required to have a permit under the watershed program.

Appendix A Reference: (A28, p. 2)

Sub-Topic D: Flexibility in Wet Weather Permitting

EPA's Urban Wet Weather Flows Advisory Committee is developing recommendations on how to address the water quality impacts associated with urban wet weather discharges on a watershed basis. Among the watershed-related issues that the Committee is considering are:

- **Flexibility:** Flexibility would include allowing a phased approach to implementation of wet weather discharge controls. For an urban watershed approach to be most effective, federal, state, and local stakeholders would work to reduce and eliminate the institutional and regulatory barriers to addressing wet weather discharges in a coordinated and comprehensive manner, including the identification of sensitive areas, monitoring, and watershed assessment. Additional flexibility can be achieved through the use of non-regulatory tools, including pollution prevention and incentive-based mechanisms, to address the impacts of wet weather flows.

Appendix A Reference: (A12, pp. 4 - 5)

EPA's Urban Wet Weather Flows Advisory Committee is developing recommendations on how to address the water quality impacts associated with urban wet weather discharges on a watershed basis. Among the watershed-related issues that the Committee is considering are:

Performance and Accountability: The public and others should have the opportunity to understand the benefits for which they are paying. Opportunities exist to coordinate monitoring guidance and program requirements to ensure that monitoring addresses impacts on a watershed basis and in the most cost-effective way, as well as establish a clear set of monitoring priorities for all wet weather source categories.

Appendix A Reference: (A12, pp. 4 - 5)

Sub-Topic E: Permit Application

Proposed regulations and preamble for forms 2A/2S have been revised to include a description of the watershed approach and specific questions to obtain information that will facilitate NPDES permitting on a watershed basis.

Appendix A Reference: (A14, p. 2)

Sub-Topic F: Multi-Media Considerations

Multi-media issues: for example, atmospheric deposition. Four states have tried to address multi-media permitting, each is different but the focus has been on specific industries in the state. So far, not a lot to learn yet from what's been done. Recommend focusing on one media first. If watershed permitting is flexible enough, locals can decide if they want to tackle multi-media issues, especially if atmospheric deposition is a major source of pollution for an area.

Appendix A Reference: (A8, p. 6)

TOPIC 4: INTEGRATION/ACCOUNTABILITY OF NONPOINT SOURCES

Sub-Topic A: Participation Mechanisms

Reasonable Assurance

An effective watershed permitting framework, however, must identify mechanisms to ensure nonpoint source participation in environmental protection. Whatever mechanisms are used should provide "reasonable assurance" that cited reductions in nonpoint source pollution will, in fact, be attained. It will be important to quantify the impacts of best management practices (BMPs) and define equivalencies between point and nonpoint source loadings for purposes of watershed plan implementation and trading. The goal of nonpoint source participation is to assure progress toward attaining water quality standards and watershed goals or to prevent degradation of high quality waters.

Appendix A Reference: (A2, p. 6 - 7)

EPA should identify mechanisms to ensure nonpoint source participation in environmental protection.

Appendix A Reference: (A3)

Regulatory Approach

Permittees may take a *regulatory* approach to nonpoint source control through an umbrella organization's enabling legislation or operating agreements or through individual dischargers' authorities. For example, many counties and cities exercise zoning powers and other enforceable controls over land use through a variety of ordinances and codes. Also, many regional organizations, such as basin authorities, have their own powers over nonpoint sources or require that their member jurisdictions implement and enforce certain controls through local regulations and ordinances. In some cases, a state may have nonpoint source regulatory authorities that can be considered in the watershed permit as well.

Appendix A Reference: (A4, Attachment A; A8, p. 3)

Contractual Approach

Permittees would take a *contractual* approach to nonpoint source control when an umbrella organization or individual discharger does not have regulatory authority over land uses (e.g., when the watershed permit primarily involves industrial point sources). Covered dischargers could enter into memoranda of understanding or legally binding agreements with nonpoint sources to implement additional nonpoint source controls and best management practices (BMPs). Permitting authorities must have "reasonable assurance" that nonpoint source enforcement can and will occur when necessary, and they must be able to modify permits to redirect individual requirements and enforcement to point sources where nonpoint source enforcement fails.

Appendix A Reference: (A4, Attachment A; A8, p. 3)

Either approach may be a viable option under a Single Entity scenario, but permittees under a Multi-Party or Common Watershed Conditions model likely will have to rely largely on

contractual approaches to establish accountability and enforceability for participating nonpoint sources.

Appendix A Reference: (A4, Attachment A)

Water Quality Trading

At a minimum, nonpoint sources could be named, en masse, in the general permit in conjunction with one or more load allocations (LAs). Under this approach, point sources receiving wasteload allocations could easily "see" the other pieces of the "loading pie" and go after those reductions if they were more cost-effective and as-or-more environmentally effective. Such a process could resemble a negotiated allocation or re-allocation process, or involve outright trading.

Appendix A Reference: (B4, p. 2)

Watershed Water Quality Standards

Reduce pollution sources by developing watershed water quality standards, such as using the concept of total maximum daily loads to control nonpoint source pollutants.

Appendix A Reference: (F4, p. 270)

Education and Outreach

Communication between point and nonpoint source programs is essential.

Appendix A Reference: (A20, p. 6)

Building relationships with partners is essential to nonpoint progress.

Appendix A Reference: (B4, Watershed '96 paper, p.344)

Sub-Topic B: Regulatory Considerations

Leveraging the participation of nonpoint sources through offsets will require flexibility in existing regulatory requirements. This may take the form of variances to new sources (as has been discussed in the TMDL rule development) or alternative permitting mechanisms (such as watershed permits).

Appendix A Reference: (A3)

Sub-Topic C: Potential Benefits/Incentives

Nonpoint sources may be compensated or receive some other benefit, such as technical assistance, from taking actions not required of them now.

Appendix A Reference: (A4, p. 4)

Financial support systems are key and critical to a strong nonpoint effort

Appendix A Reference: (B4, Watershed '96 paper, p. 344)

Incorporating nonpoint source requirements into grants, low interest loans and conservation subsidy programs establishes additional economic incentives for compliance. EPA supports the use of payback and multiplier provisions to provide even greater economic incentives for compliance.

Appendix A Reference: (D1, p. 16)

Sub-Topic D: Enforcement

Establishing appropriate and adequate accountability and enforcement mechanisms for both point and nonpoint sources will be key to the acceptance and successful implementation of watershed permits.

Appendix A Reference: (A4, Attachment A)

Neither the regulatory nor the contractual approach give a state or EPA a direct enforcement line to a nonpoint source (beyond what a state may already have).

Appendix A Reference: (A8, p. 3)

Enforcement is a key, albeit not the only, driver for water quality trading. EPA recognizes and supports several different approaches for making nonpoint source trading requirements enforceable. These include but are not limited to the following:

Incorporating nonpoint source requirements into point source NPDES permits. This approach provides a basis for federal enforcement and citizen suits under the CWA to compel compliance with the permit.

- Enacting local, State or Tribal laws and regulations that establish trading program requirements and provisions for direct nonpoint source accountability.
- Establishing nonpoint source requirements into grants, low interest loans and tax incentive programs administered by local, State and Tribal authorities.
- Establishing nonpoint source requirements into Section 319 project grants.
- Incorporating nonpoint source requirements into conservation subsidy programs.

Appendix A Reference: (D1, p. 16)

Sub-Topic E: State Approaches to Nonpoint Source Involvement

In the Charles River Watershed Permitting Case Study Report, participants of the focus group meeting developed a revised approach for watershed permits for the state of Massachusetts.

Topics covered in the meeting included legal details on cosignatories for basin plan and WRM plans, and legal methods to bind obligations.

Appendix A Reference: (B2, pp.14 - 15)

In 1988, the Cherry Creek Basin Authority successfully sponsored House Bill 1029, which created the Cherry Creek Basin Water Quality Authority. The Authority is a quasi-municipal corporation and political subdivision of the State, which is empowered to levy a limited tax on watershed residents, charge recreationists using the Reservoir, and collect fees from wastewater treatment facilities and nonpoint sources. The Authority has constructed four major nonpoint source projects in the basin, providing phosphorus for trade credits to basin dischargers (these projects are owned, managed, and monitored by the Authority). Each of the nonpoint source projects detains and filters base-flows, stabilizes the stream corridor, and enhances the riparian zone with wetlands. Prior to constructing these projects, the Authority estimated their phosphorus removal efficiencies. Since their construction, the Authority has regularly monitored each project to determine actual removal rates.

Appendix A Reference: (B3, p. 2 - attachment)

TOPIC 5: BENEFITS/INCENTIVES

Sub-Topic A: Potential Benefits of Watershed-Based Permitting

General Benefits

Why Watershed Permitting?

- Bring regulated and non-regulated sources to the table at the same time to work together
- Create incentives to address sources and stressors through a single environmental management mechanism
- Integrate point source regulatory controls with locally enforceable nonpoint source controls for greater chance at environmental gains

Appendix A Reference: (A5, p. 8)

Benefits of the Watershed Approach to the NPDES program:

- Develop permits based on a holistic assessment of water quality
- Assign equitable wasteload allocations among point sources
- Improve quantification of nonpoint source contribution
- Address equity between point and nonpoint source controls
- Collect data (e.g., TMDL) necessary to pursue point and nonpoint trading
- Establish forums for negotiating trades to meet ultimate objectives

Appendix A Reference: (A6, p. 1)

Benefits of issuing NPDES permits under the WPA:

- Gains in efficiency
- Increased effectiveness of management strategies
- Consistency and continuity among permits

Appendix A Reference: (A11, p. 1)

Sub-Topic B: Incentives for Participating in Watershed-Based Permitting

General Incentives

Specific incentives to hold or be a signatory to a watershed permit will vary depending on the local political, economic, regulatory, and water quality conditions, as well as with respect to the model selected. Some benefits include the following:

- A watershed community can bring many sources under one umbrella and increase opportunities to achieve water quality objectives - reaching the same goal for less money, reaching a higher quality for the same money, or getting improvements that might not have otherwise been possible without a broad, ecological, "watershed" approach.
- An entity currently holding several NPDES permits can use a watershed permit to capture cost-savings by consolidating permit application and implementation activities, at a minimum streamlining administrative functions, but, perhaps, streamlining planning and control activities as well.
- Some dischargers could gain a degree of control or influence over other sources that might not be subject to the same regulatory scrutiny and control under the current implementation approach.
- Some point source dischargers end up with less stringent effluent limits with the same or

better environmental result than they otherwise would have had under the current implementation approach. [how does anti-backsliding regs fit into this?]

- Nonpoint sources may be compensated or receive some other benefit, such as technical assistance, from taking actions not required of them now.
- In sum: cost savings; expanded coverage; control or influence; better chance at environmental improvement.

Appendix A Reference: (A4, p. 3 - 4; A8, p. 4 - 5)

Potential Cost Savings

States and EPA incentives to offer and issue watershed permits are cost-effectiveness in control costs and administrative and oversight costs. Developing a watershed permit might require an initial additional resource investment, but that investment could be recouped through administrative cost-savings achieved over the duration of the permit. Watershed permits can provide flexibility for point sources and extension of enforceable controls to nonpoint sources under a regulatory framework. As a result, implementation of a watershed permit may achieve ambient standards and watershed goals where previous efforts have not. Where these opportunities exist, states and EPA may well be interested in pursuing such successes.

Appendix A Reference: (A4, p. 4)

What reasons would an Entity have for coming together for a watershed permit beyond administrative cost savings? Municipal Entities might otherwise have to go to a lot higher expenditures for more sophisticated treatment technologies - so they want to have some control/influence over other sources. For example, Louisville is being pushed to advanced wastewater treatment (AWT) for phosphorus, but they are 2 percent of the problem. They are ready to spend the money that they otherwise would/could be made to spend on AWT on nonpoint source controls instead. We can't allow flexibility, however, if we end up with local water quality problems.

Appendix A Reference: (A8, p. 5)

Sub-Topic C: State Perspective on Benefits of Watershed-Based Permitting

The Nebraska Dept. of Environmental Quality (NDEQ) noted increased efficiency due to:

- Reduction in travel time and cost for water quality monitoring programs, intensive field surveys, can be reduced by concentrating on limited regions
- Consolidation of modeling studies to reduce overall costs
- Better coordination of compliant response to allow personnel from different programs to assist each other in responding to complaints
- Consolidation of NPDES permit notices by basin or sub-basin, if permit synchronization has occurred.

NDEQ noted increased effectiveness due to:

- Increased reliability of monitoring data
- Improved quality of assessments
- Better identification of management priorities

- Better established TMDL implementation criteria (WLAs/LAs)
- Improved management solutions

Appendix A Reference: (A11, pp. 1-2)

The State of Michigan realized gains in efficiency as the backlog of major permits has been reduced from 63 percent to 2 percent since the NPDES 5-year Basin Plan was implemented in 1983. Additionally, the implementation of the basin plans resulted in eliminating redundancy in cross-program activities (e.g., coordinated monitoring plans for each basin).

Appendix A Reference: (A11, p. 2)

The Focus Group members Charles River Watershed Permitting Case Study Report listed the following potential benefits to implementing watershed permitting:

- Opportunities for real discussion
- Clarification of what we need to do (expressed by local representative)
- Objectives stated up-front (in basin plan)
- A path to plan with
- Promotes regionalism
- Identifies common goals and needs
- Potential to save money
- Provides opportunity for trading
- If we try it, we have nothing to lose and will likely achieve more
- Promotes innovation
- The complexity (of our approach) offers more opportunities

Appendix A Reference: (B2, pp. 27 - 28)

The benefit of watershed permitting is that the Cherry Creek Basin Water Quality Authority and its members "understand the basin and its dynamics better as a group than the Water Quality Control Division does - they have the whole state to deal with and I see the watershed permit idea as helping them do their job, making their job easier, and reducing their staff loads.

Appendix A Reference: (B3, p. 6)

Comments from Mr. Dan Wrye, Acting Manager, Permit Management Section, Water Quality Program:

- States are grappling with how to make a dent in their Section 303(d) lists and watershed permitting may be a mechanism to help develop and implement TMDLs more efficiently and effectively.
- Can see the attractiveness in applying state regulations in concert with local regulations in a process or mechanism where water quality and ecological conditions can be examined and then stakeholders can decide how to most effectively use their individual authorities collectively. It may be necessary to develop contractual arrangements among and between participating agencies and sources to implement individual and joint responsibilities.

Appendix A Reference: (B4, p. 1-2)

Sub-Topic D: Benefits Related to General Watershed Management Approach

The State of North Carolina has issued approved basin management plans for the Neuse, Lumber, Tar-Pamlico, and Catawba River Basins. The state expects to complete the first iteration of basin management plans for all 17 basins by June 1998. Permitting for each basin begins in the implementation phase, shortly after basin plan approval. North Carolina cites improved efficiency in use of program resources, increased effectiveness of management actions, consistency in decisionmaking, and equitable treatment of pollutant sources as benefits of statewide watershed management.

Appendix A Reference: (A13)

States noted that although considerable effort is required to develop and initially implement a watershed approach, most said that overall agency's efficiency and effectiveness had improved after the approaches were operational.

Appendix A Reference: (F1, p. 14)

Almost all state managers stated that the statewide watershed approach has resulted in a significant increase in the amount of monitoring data. For example, North Carolina reported 30 percent more monitoring information has been collected using the same resources due to less travel and more partnerships with other entities. Partnerships with other agencies involved in watershed monitoring (e.g., U.S. Fish and Wildlife Service, U.S. Geological Survey, National Marine Fisheries Service, state conservation and agricultural agencies, water/wastewater utilities) has helped improve the coordination, integration, and use of existing data in watershed assessments.

Appendix A Reference: (F1, p. 14)

States that develop basin plans noted the plans can be useful tools for involving stakeholders in helping make decisions on what actions are needed for maintaining and restoring water quality. For example, North Carolina water resource agency staff noted an open and inclusive basin planning process provides a good venue for raising public awareness about TMDLs, providing education on possible management strategies, and discussing implementation approaches.

Appendix A Reference: (F1, p. 14)

State agencies are collectively applying their resources more effectively to watershed assessment, planning, and management.

Appendix A Reference: (F1, p. 14)

In sum, states' experiences with the statewide watershed approach demonstrates the importance that improved water quality monitoring programs can have on the effectiveness of the overall water program: Better data leads to more accurate assessments, which creates better quality TMDLs, that can produce more effective permit limits and non-point source controls.

Appendix A Reference: (F1, p. 14)

Many states initiated their statewide watershed management approaches in an effort to make their NPDES permitting programs more efficient and better integrated with their monitoring programs.

In fact, some states developed basin management boundaries partly based on the location, re-issuance cycles, and relative workload of point sources or NPDES permits within their states. Appendix A Reference: (F1, p. 33)

TOPIC 6: CHALLENGES/BARRIERS

Sub-Topic A: Challenges with Using the NPDES Program to Promote the Watershed Approach

- Accessibility and quality of watershed assessment data
- Ability of models to accurately predict impacts from multiple sources over the entire watershed
- Uncertainty regarding ability to address equity among point and nonpoint sources
- Ability to overcome institutional and programmatic inertia
- Availability of sufficient incentives for implementing innovative permit models
- Lack of authority to impose enforceable requirements on nonpoint sources
- Availability of resources

Appendix A Reference: (A5, p. 2)

Remove impediments by integrating grants, developing common reporting requirements, and issuing 10-year permits.

Appendix A Reference: (A20, p. 6)

Obstacles/Challenges:

- Requires clear and further articulation of goals
- Getting EPA, state, and municipalities to agree on goals
- Goals have to be neutral (not one person's or one group's bias)
- Getting communities to the table and to agree
- Making allocations (will be politically difficult)
- Science and planning are key to underpin the permits and agreements; numbers must be technically justifiable; essentially requires doing TMDL before doing permit
- Getting the data
- Must be boiled down to segments of the river
- Keeping it simple and focused enough initially to be doable (e.g., focus on single parameter in three communities)
- Trying to achieve a balance between something enforceable and moving ahead
- Cost of implementation
- Accountability: how to track transfers of money
- Establishing the equivalency test: how to show watershed permit is as protective as standard permit

Appendix A Reference: (B2, pp. 27 - 28)

Opposition to the concept of consolidating discharges under one regulatory umbrella stems mainly from a "property rights" view of the allocations, in contrast to proponents' "commodity" framework. [relates to imposed site allocations for phosphorus]

Appendix A Reference: (B3, p. 3)

Sub-Topic B: Challenges Associated with Staff and Resources

Comments from Mr. Dan Wrye, Acting Manager, Permit Management Section, Water Quality Program (Washington State):

Watershed permitting is a good idea - in concept - but is concerned about the level of staff resources that would be necessary to put a watershed permit or permit program together. In addition to administrative time, analysis time would be involved, and while the state might be able to do something short of a TMDL in many cases, it would need to conduct sufficient environmental assessments, as well as provide opportunities for citizen involvement (which involve significant effort and resources).

Appendix A Reference: (B4, p. 1)

Sub-Topic C: Challenges Associated with General Watershed Management

Despite the enormous investments some states have made in the watershed approach, changes in political leadership can affect senior level commitment to the approach. For example, the Massachusetts Watershed Initiative relies heavily on the Secretary's office for resources and staffing support. Although support for the Initiative has been strong up to now, state managers are concerned that it could diminish with a shift in leadership. Some states, however, have managed to institutionalize their watershed approaches through legislation or formal rule making (see Figure 3) in order to reduce the impact from changes in government leadership.

Appendix A Reference: (F1, p. 17)

Some communities are seeking greater opportunities to implement water resource management actions through a watershed approach - but they have:

- Difficulty in coordinating multiple jurisdictions and agencies
- Serial or parallel rather than integrated controls
- Sources with loading contributions and no control responsibilities

Appendix A Reference: (A5, p. 7)

Watershed management can proceed more smoothly and more equitably if it includes some mechanisms to compensate those who suffer significant losses from management decisions. It is important to address the costs incurred by some stakeholders in the watershed management process, because they may serve as disincentives to action.

Appendix A Reference: (F4, p. 251)

Sub-Topic D: Challenges Associated with Measuring Success

State managers identified several reasons for not evaluating or documenting lessons learned from their experiences with statewide watershed management: (1) states had neither the time nor the resources to devote to evaluating the effectiveness of their approach; (2) it would be too difficult to attribute gains in ambient water quality to any management efforts over the long term due to changes in sampling methodologies over time, different locations of sampling stations, and shifts in 303(d) stream assessment priorities; and, (3) some states are still in the early stage of their statewide watershed management approach and they did not have enough experience to make

evaluation efforts worthwhile; and, (4) almost all states agreed that developing measures of success has been difficult. More initiative by states and help from EPA, however, is needed to develop effective metrics to measure trends over time.

Appendix A Reference: (F1, p. 17)

What types of effluent requirements, pollutant loading requirements (nonpoint and point source), ambient water quality requirements, monitoring requirements, technology requirements, and reporting requirement should be included in the watershed permit to establish an effective accounting and accountability system? Although this system needs to be defensible, if there are too many requirements, the cost to permittees may outweigh any cost savings or efficiencies sought through watershed permitting.

Appendix A Reference: (B2, p. 18)

Sub-Topic E: Conflicts Between Watershed Management and Programmatic Goals

Although EPA policies push for environmental “progress” and long-term management, states claim the agency’s regulations and approach to oversight stay focused on short-term priorities such as what is on or off the 303(d) list or what are the “correct” effluent limits for point sources. States maintain that statewide watershed management is not a program-centered approach, and EPA needs to reduce its emphasis on program-by-program management and establish a more holistic, results-driven approach to water quality management. Several states suggested that EPA should de-emphasize tracking specific program activities, and focus instead on results-based management activities (e.g., increased acres of waters restored) within the state and indicators (e.g., attaining water quality standards) within whole watersheds. . . One example of an EPA policy that was frequently criticized by states as representing a serious barrier to statewide watershed approach was the agency’s policy on reducing the states’ backlog of expired NPDES permits. Some states thought that the goals and timelines for reducing the permit backlog needed to be revised or made more flexible to fit their resource constraints and basin cycles. EPA’s backlog reduction strategy, they argue, has diverted resources away from other areas of the watershed approach. One state manager suggested EPA should allow states that have adopted the rotating basin approach to deal with their permit backlog according to their five year schedule. Under this approach, expired permits would be reissued when program implementation (management step 4, year 4) is scheduled within each basin.

Appendix A Reference: (F1, p. 18)

Sub-Topic F: Challenges Related to Differences in Programmatic/Regulatory Schedules

The five-year planning and management cycle adopted by some states was envisioned as a catalyst for organizing and synchronizing state water quality programs, but schedule variations under the Clean Water Act mitigate against synchronizing program schedules and management actions. For example, NPDES permits are issued on a five year cycle, water quality standards reviews and revisions occur over a three-year cycle, and 305(b) reports are issued biennially. . . The multiple and staggered deadlines under the Act often make it difficult for states to effectively meet their statutory requirements and manage their water quality programs according to a regular schedule on a basin or watershed basis. As a result, program requirements go unmet or become meaningless. For example, NPDES permits will sometimes expire before a basin’s

implementation phase is reached which may temporarily result in a backlog; or, the state may submit water quality inventory or 305(b) reports to EPA that only include water quality data for a subset of a state's waters. EPA headquarters staff recognized the difficulty states face, but argued there was very little EPA could do about it since most of the deadlines are set by statute. Appendix A Reference: (F1, p. 21)

TOPIC 7: ENFORCEMENT ISSUES

Sub-Topic A: Failure to Meet Water Quality Standards

Determining what actions are required in response to failure to achieve ambient water quality standards.

Solutions:

- Include common condition allowing permits to be reopened if watershed goals are not achieved. [reopener clause]
- Reassess load allocations. Reopen permits with reasonable potential to cause noncompliance.
- Impose penalties that fund nonpoint source BMPs (i.e., North Carolina approach) where such sources cause noncompliance.

Appendix A Reference: (A6)

Sub-Topic B: Failure to Meet Permit Requirements

If there is one permit, what happens with - what constitutes - a violation? If the Authority is the permittee and a discharger exceeds an individual target or cap - but the overall Authority allocation/cap is not exceeded - no NPDES violation occurs. However, the Authority will need a way to deal with such circumstances, perhaps through its trading program and/or emergency reserve pool of reduction credits. Questions to consider:

- What about internal enforcement systems?
- What if an individual exceedence means the overall cap is exceeded? The state would come after the Authority, then what?

Need for an internal enforcement system, as well as an internal management system, through some type of sub-permits, sub-agreements, etc., to deal with members. Right now, the Cherry Creek Basin Water Quality Authority is pretty removed from the nonpoint source control process. Local governments handle minimum required BMPs and enforcement.

Appendix A Reference: (B3, p. 4)

Sub-Topic C: Reporting to Permit Compliance System (PCS)

Coordination with the Enforcement Program is critical, particularly with regard to PCS modifications.

Appendix A Reference: (A20, p. 6)

Identify how violations of ambient reporting requirements will be handled by PCS.

Appendix A Reference: (A28, p. 3)

Sub-Topic D: Defining Liability

There must be clear legal lines of enforcement and liability stipulated in the agreement showing that the permit holder is ultimately responsible for the watershed permit requirements, including cosignatory agreements.

Appendix A Reference: (B2, p. 17)

In the Charles River Watershed Permitting Case Study Report there are legal details about cosignatories for basin plan and WRM plans, and lists legal methods to bind obligations.

Appendix A Reference: (B2, pp. 14 - 15)

Legal Authority for Developing and Enforcing the Model:

- Key legal authorities and drivers of the Massachusetts Watershed Permitting Approach are NPDES permitting authority (point source and general stormwater), Water Management Act Permit (water withdrawal), and funding (SRF, etc.).
- The legal group stressed that, to be legally sound, the watershed permit (or watershed agreement) must have clearer articulation of goals (e.g., resource problem such as specific water quality criteria or standard not being met, parameter causing problem, amount of overall reduction needed to meet the standard or water resources goal).
- An underlying theme in all group discussions, including the legal group, was that science and planning will be key to the legal soundness of the permit.
- The legal group stressed that the legal challenges are not legal constraints but technical and financial constraints (i.e., how to address technical issues in a sound way that results in legally defensible permits, how to pay for such science support, financial incentives for BMPs, etc.).

Appendix A Reference: (B2, p. 16)

TOPIC 8: PUBLIC PARTICIPATION/EDUCATION/OUTREACH

Sub-Topic A: Role in General Watershed Management

One of the common themes of successful project approaches that have been observed is that there is stakeholder involvement - providing a forum for people to work on problems together

Appendix A Reference: (A2, p. 3)

Community involvement is essential for continued improvement.

Appendix A Reference: (B4, Watershed '96 paper, p. 344)

Sub-Topic B: Role in NPDES Permitting

Decisions to allow new dischargers in impaired, high-quality, or outstanding natural resource waters should be subject to public review. This should include facilities that would be covered under general permits.

Appendix A Reference: (A3)

Effective implementation requires public buy-in for resource management plans and implementation strategies, which includes the development and issuance of NPDES permits. Appendix A Reference: (p. 12)

Communities must play a major role in watershed management to ensure success. A watershed permitting framework should have flexibility built in to allow local leadership in conducting watershed planning and selecting appropriate management options to meet watershed goals and CWA requirements.

Appendix A Reference: (A2, pp. 6 - 7)

Potential areas for public participation within the watershed permitting approach include:

- Data and information collection
- Prioritization of basin concerns
- Development of management goals and strategies
- Input to allocation of resources
- Review of management plans and implementation strategies
- Identification of measures of success for documenting environmental improvements
- Plan implementation

Appendix A Reference: (p. 12)

TOPIC 9: PERFORMANCE MEASURES/INDICATORS

Targeting loading reduction goals would be a big step towards measurement of environmental impacts.

Appendix A Reference: (A27, in attachment)

A permit issuance backlog for both major and minor permits will be acceptable in situations where the permitting authority shows demonstrated progress toward implementing a watershed permitting approach. A demonstration of progress will include:

- Established Statewide geographic management units (i.e., major basins and watershed or sub-basins nested within the major basins);
- A cycle of activities for basins (e.g., monitoring, assessment, prioritization, management strategy development) and a schedule for implementation by basin; and
- A plan and schedule for synchronized permit issuance or reissuance.

Appendix A Reference: (D2)

TOPIC 10: INTEGRATION WITH OTHER WATER PROGRAMS AND WATERSHED MANAGEMENT EFFORTS

Sub-Topic A: Total Maximum Daily Loads (TMDLs) Program

Ongoing EPA activities listed under the topic of NPDES program implementation include: implementing policies to ensure NPDES permits reflect TMDLs, and developing water quality

permitting guidance. Working closely with the states and other federal partners will be crucial to ensure that new approaches achieve real environmental results.

Appendix A Reference: (A1)

When implemented, the TMDL process can expedite water quality-based NPDES permitting and provide a mechanism for integrating the management of both the point and non-point sources that together may contribute to a waterbody's impairment.

Appendix A Reference: (A11, p. 13)

Ideally, a watershed permitting framework should be based on completion of watershed analyses that identify contributions of point sources, nonpoint sources, and other watershed stressors and set goals for the water bodies in question (e.g., meet water quality standards, prevent degradation of water quality, protect habitat, preserve recreational opportunities). The permitting framework should provide a means of implementing watershed analyses called for by other program areas (e.g., TMDLs, anti-degradation reviews) and promote watershed analyses in cases where they are important, but not necessary to fulfill other program requirements.

Appendix A Reference: (A2, p. 6 - 7)

Across all program areas (e.g., TMDLs, anti-degradation reviews), watershed analyses should be conducted to identify the contributions of point and nonpoint sources.

Appendix A Reference: (A3)

Use of the TMDL program to promote (or comprise) watershed permitting would be consistent with the existing NPDES program and, thus, would minimize duplication and issues associated with implementation of a new program.

Appendix A Reference: (A6, pp. 19 - 20)

What is the relationship between watershed permitting and watershed-based trading, and between watershed permitting and TMDL implementation?

A watershed permit is not a form of trading and it does not substitute for a TMDL when one is required. This is an important distinction. A watershed permit could be used to implement trading programs or TMDLs. In addition to providing a planning and administrative framework that could supplement trading programs and TMDL processes, a watershed permit could be used to formalize and strengthen accountability for implementing traded loading reductions and enforce TMDL allocations.

Appendix A Reference: (A7)

Sub-Topic B: Relationship/Coordination of NPDES Programs with Other Programs

The incorporation of NPDES permitting into the watershed permitting approach is not intended to supersede or impede existing watershed protection efforts; rather, it is intended to support ongoing state initiatives and supplement the efforts of other environmental programs by identifying areas where the NPDES program can contribute.

- NDEQ believes program coordination to be one of the most important keys to success. A few key interactions between NDEQ programs have been identified and include monitoring, point source WLAs, and non-point source management.
- Another area that will likely require coordination is water quality monitoring. Monitoring may result in other program activities, such as enforcement actions by other sections.
- Massachusetts plans a pilot inter-state project in a selected basin (coordination with neighboring states is needed in many basins with interstate riverine systems).

Appendix A Reference: (A11, pp. 9-10)

There may be opportunities to integrate a watershed permitting framework and watershed permits into the following initiatives and positively influence the innovations already being considered:

- Watershed-Based Trading
- CZARA implementation
- NEP implementation
- Great Lakes and Chesapeake Bay Programs
- Great Waters Initiative

Appendix A Reference: (A10)

TOPIC 11: GENERAL RECOMMENDATIONS FOR PROMOTING WATERSHED PERMITTING

Sub-Topic A: Policy and Guidance

- Develop guidance and training on the use of watershed data in developing NPDES permits.
- Encourage, and if necessary require, permit writers to consider background water quality and other point source discharges when developing permit limits, as well as conduct an equity analysis to ensure that all discharges are treated fairly.
- Transition to a watershed-based permitting approach in non-delegated states.
- Document and disseminate to permit writers information on state authority for nonpoint source controls.
- Review TMDL guidance to identify opportunities for promoting a more holistic approach (e.g., applying TMDLs proactively, grouping water quality-limited streams to approximate watersheds, considering additional pollutants).
- Develop policy for implementing a hierarchy of monitoring alternatives to address compliance with discharge-specific and watershed permit conditions.
- Continue to encourage states to coordinate the issuance of NPDES permits within watersheds.

Appendix A Reference: (A6, p. 18)

Sub-Topic B: Monitoring

- Reduce site-specific monitoring requirements in exchange for participation in a watershed monitoring network.

Appendix A Reference: (A6, p. 18)

Sub-Topic C: Model Permits

- Develop model permit conditions for watershed-based permits (e.g., reopener permit modification and termination).

Appendix A Reference: (A6, p. 18)

Sub-Topic D: Pilot Projects

- Conduct or support pilot studies of each model, compile available case study data, and publicize successes.

Appendix A Reference: (A6, p. 18)

Sub-Topic E: Areas for Further Research

- Assess benefits associated with regulatory changes.
- Investigate enforcement issues.
- Assess whether states' continuing planning processes should identify major watersheds/basins within their borders and characterize the degree and nature of water quality impairment within each watershed.

Appendix A Reference: (A6, p. 18)

TOPIC 12: FOLLOW-UP ITEMS/ POTENTIAL LEADS TO OTHER INFORMATION

Potential sources of additional information from watershed session outlines:

- Michigan has a proposed water quality trading policy (presented by Peter Swenson, Env. Eng., EPA Region 5)
- NPDES, TMDLs and Local Planning - The Mill Creek Watershed (presented by Robin Corathers, Executive Director, Mill Creek Restoration Project)

Appendix A Reference: (A2)

Coordination with other Basin Planning/Permitting Efforts:

- Gives examples of ongoing initiatives such as: Otter Creek, Utah NPS initiative, Lower Colorado River Program, and Chesapeake Bay Program

Appendix A Reference: (A11, p. 11)

In the "NPDES Watershed Strategy Implementation - Progress Report #2 dated June 30, 1994" document, an attached table summarizes the approved water quality cooperative agreements (104(b)(3) grants) projects submitted by EPA Regions. Oregon's project was to develop and implement an enforcement initiative in the watershed context. Focus is on three watersheds which have a high concentration of CAFOs.

Appendix A Reference: (A16)

In the "The NPDES Program and Watershed Management" document, an attached factsheet mentions that the Permits Division has developed "white papers" on watershed planning, models for developing watershed permits.

Appendix A Reference: (A24)

The “Water Division Directors Meeting Issue Papers” mentions that EPA has proposed an alternative approach in its "Greenbook."
Appendix A Reference: (A25, p. 1)