

COASTAL NONPOINT PROGRAM TRACKING AND MONITORING WHITE PAPER

4/04/03 DRAFT

Introduction

The Tracking and Monitoring Work Group was charged with beginning the dialogue on issues, options, roles and responsibilities for a national strategy on tracking and monitoring Coastal Nonpoint Program (CNP) implementation. The Tracking and Monitoring Work group (*Appendix A*) met via email to discuss and address this challenge. The nine states represented on the workgroup and representatives from the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA) reviewed and commented on the draft strategy. This DRAFT white paper summarizes Work Group responses to questions (*Appendix B*) posted by the conference planning committee and reviews the CNP statute and program guidance documents. This paper serves as a starting point for upcoming state, NOAA, and EPA discussions to be held at the Spring 2003 National CNP meeting in Richmond, Virginia.

Questions and responses developed by the Planning Committee and the Tracking and Monitoring Work Group have been condensed into key interrelated themes intended to clarify and guide state tracking and monitoring programs:

- **Purpose of Tracking and Monitoring:** What is the purpose of tracking and monitoring (and how well are national, State and local needs addressed)? To measure water quality improvements? To document program implementation and effectiveness? To document program progress and success? To describe and prioritize existing and emerging problems? To further develop management and regulatory programs?
- **Mechanism for Tracking and Monitoring:** Do States need to track every single management measure? At what scale? How can policies and voluntary programs be tracked? What level of detail is needed to assess program implementation? What data is available? What should be prioritized with limited resources available? How can duplication of effort with other agencies responsible for tracking and monitoring be avoided? How will the information be utilized?

Expected Work Group outcomes from the Meeting

This white paper frames a national discussion of tracking and monitoring the implementation of the Coastal Nonpoint Program. It will both help guide the discussion at the National CNP meeting in April 2003 and provide direction and recommendations to states and territories for meeting program expectations for tracking and monitoring.

Issue Identification

Section 6217 requires States to implement management measures as well as develop mechanisms to track and monitor progress of the coastal nonpoint program. This requirement is stated in several places throughout the legislation and program guidance:

§ 1455b. Protecting coastal waters (Section 6217)

“The purpose of the program shall be to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters, working in close conjunction with other State and local authorities.”

“...any necessary monitoring techniques to accompany the measures to assess over time the success of the measures in reducing pollution loads and improving water quality.”

Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance (NOAA and EPA, January 1993)

“NOAA and EPA expect states to fully implement management measures, including alternative measures in conformity with the measures specified in the (g) guidance, within three years of Federal approval of the program and to fully implement additional measures within eight years of that Federal approval *. Under the statute, the purpose of the states’ coastal nonpoint programs is to protect and restore coastal waters. This purpose is advanced by establishing a schedule that requires management measure implementation as soon as possible. In addition, NOAA and EPA believe that states should begin implementing certain additional management measures at the time of program approval to ensure that the statutory goal of attaining and maintaining coastal water quality standards is achieved.

Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (NOAA and EPA, October 1998)

* ...pursuant to the Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990, full implementation of 6217 (g) management measures must occur within 15 years of conditional approval, not three years as stated in the 1993 Program Guidance. The Administrative Changes further state that ‘NOAA and EPA expect that all individually and cumulatively significant nonpoint source categories and all watersheds within the 6217 management area will be addressed within 15 years.’

“Each state will develop a 5-year implementation plan describing when, where and how program implementation will occur, including mechanisms for tracking and monitoring implementation.”

Until recently, the national program has been focused on program development and approval rather than longer-term program implementation. Meanwhile, the need for developing consensus and national guidance on CNP tracking and monitoring has only increased as more states receive program approval. It is clear that tracking and monitoring can mean very different things to different audiences. While the guidance and statute require the tracking and monitoring of CNP implementation, there are large gaps on the definition, mechanism and detail expected. Currently, there is no formal manner or process for CNPs to track and monitor implementation and while outlining various acceptable options may be beneficial, it is understood that monitoring and tracking methods vary by state and that the focus of individual state efforts are very different due to their unique priorities.

Issue Assessment

What is the Purpose of Tracking and Monitoring?

This question helps affirm tracking and monitoring goals and define the types of information needed by CNPs to meet program requirements. Consensus on this issue is vitally important. As it stands, answers to this question vary widely. Is the purpose of tracking and monitoring....

- To measure water quality improvements?
- To document program implementation and effectiveness?
- To document program progress and success?
- To describe and prioritize existing and emerging problems?
- To further develop management and regulatory programs?

The main purpose of tracking and monitoring is to document CNP implementation and effectiveness. Thus, monitoring and tracking is primarily to assess implementation of the management measures, especially in focus areas or for sources of concern in the states. Many of the other questions can be answered if States are able to develop reasonably comprehensive methods of assessing implementation of the MMs. To date, program implementation is not being tracked or reported consistently among States and Territories.

The 6217 (g) guidance (Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, EPA 840-B-92-002 January 1993) discusses the need to track and monitor both water quality and implementation of management measures (Chapter 8, Section I), but the guidance is heavily weighted towards water quality monitoring (Section II).

“The overall management objective of section 6217 is to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters. The principal monitoring objective under section 6217(g) is to assess over time the success of the management measures in reducing pollution loads and

improving water quality. A careful reading of this monitoring objective reveals that there are two subobjectives: (1) to assess changes in pollution loads over time and (2) to assess changes in water quality over time.”

There is no specific methodology provided in the guidance on Management Measures (MM) implementation.

Oftentimes, tracking and monitoring data constitute the basis for evaluating and reporting on program implementation. If effectively done, it reveals the level of effort put into the program and can be translated into support for funding. However, water quality improvements for many categories of NPS pollution may take years to become evident. Because the CNP is based on the implementation of MMs, the accounting of those MMs may be a better means to measure success. It could also be argued, for example, that state policy changes brought about during CNP development will have the greatest (long term) impact to coastal water quality even if the policies are focused on education or funding rather than the MMs themselves.

However, the definition of MMs [6217(g)(5)] in the (g) guidance does not clearly distinguish between measures and practices, since it uses the term “measures” within the definition. A better explanation of the federal definition of MMs is needed if we are to reconcile it with Chapter 8, Section III of the (g) guidance.

"Management measures" are defined in section 6217(g)(5) as:

“...economically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives.”

Chapter 8, Section III A. Overview

“As discussed in the introduction to this chapter, States will not be able to fully interpret their water quality monitoring data without information regarding the adequacy of management measure implementation, operation, and maintenance. Section II of this chapter provides an overview of techniques for assessing water quality and estimating pollution loads. The information presented in this section is intended to complement that provided in Section II to give State and local field personnel the basic information they need to develop sound programs for assessing over time the success of management measures in reducing pollution loads and improving water quality.

“Successful management measures designed to control nonpoint source pollutants require proper planning, design and implementation, and operation and maintenance. This section presents a general discussion of the procedures involved in ensuring the successful design and implementation of various management measures, but is not intended to provide recommendations regarding the operation and maintenance requirements for any given management measure. Instead, this section is intended to

provide "inspectors" with ideas regarding the types of evidence to seek when determining whether implementation or operation and maintenance are being performed adequately."

Where water quality improvements can be measured, it should be used to document program progress and water quality trends or describe 'cause and effect' relationships for water quality improvements. Guidance suggests, however, that 'measurable results' will not be a viable option for reporting on many of the coastal nonpoint program MMs. Page 8-5(b) of the (g) guidance states, "Although desirable, monitoring to establish such cause-effect relationships is typically beyond the scope of affordable program monitoring activities". Most programs, with their limited funding, have some form of water quality monitoring efforts currently in place. The use of the 303d listings could be helpful in supplementing these current efforts by supplying data that would illustrate long-term changes in water quality, while not putting a strain on program budgets.

In addition, a Question and Answer document on CZARA prepared by NOAA and EPA, published in the early to mid nineties, states "EPA and NOAA agree that the task of demonstrating specific cause and effect in specific waters is beyond the scope of the section 6217 monitoring efforts. EPA and NOAA do, however, expect states to attempt to establish statistical associations between water quality and land use/land management monitoring parameters in those watersheds and for those management measures for which section 6217 monitoring is conducted".

NOAA and EPA certainly encourage CNP staff to be involved in any state or local efforts to assess the effectiveness of MMs (including determination of cause and effect relationships), but clearly there has been and will continue to be a recognition of the difficulty and expense of obtaining such information. National demonstration projects, compilation of the latest research and academic studies, and EPA's recently released and forthcoming national guidance on MMs are the best place to find the latest technologies, estimated load reductions and related MM information. CNP staff resources would be better served to assess the impact of the program, not to be directly monitoring management measure effectiveness, but rather by ensuring the full implementation of MMs called for in the program.

The 6217 (g) guidance is now over 10 years old. Perhaps it is time to revisit the guidance (as was done for the Final Administrative Changes, 1998) and update the document to incorporate lessons learned by the states over the past decade. Much has changed during that time span (NPDES Phase II, TDML) that operates at the periphery of the state CNPs. Rather than continuing to monitor and track implementation of the program in isolation of these programs, maybe the guidance can be examined and updated to reflect current conditions and priorities.

What is the best Mechanism for Tracking and Monitoring?

The 1998 Final Administrative Changes Guidance states "Each state will develop a 5-year implementation plan describing when, where and how program implementation will

occur, including mechanisms for tracking and monitoring implementation.” But, the guidance does not resolve the question of the mechanism to be used by CNPs for tracking and monitoring. And with the definition of National and State purpose and goals of CNP tracking and monitoring, left unclear, the task of outlining a process or mechanism to track and monitor CNP implementation loses direction. Despite a probable need for consistent tracking of MMs by all States for National consistency the result may be chaotic as each CNP needs to define its own goals and assigns its own priorities for tracking and monitoring.

MMs can be and are typically tracked by the entity that has the primary responsibility for implementation. This leads to a variety of tracking methodologies, systems and quality control issues governing data management – coordination is critical. Some States may keep files on MMs but do not “track” them or keep them in a manageable database. Data kept in paper files or aging spreadsheets may be lost or inaccessible. State and Territorial water quality tracking systems may or may not be suitable for evaluating the effectiveness of MMs and, in addition, may not be readily transferable among agencies. Also, without metadata, or a reasonable alternative, the credibility of the water quality data, especially that of older ‘baseline’ data, may be in question.

States and Territories will differ on the importance or priority position of the data, its scale, availability and accuracy. This inconsistency will likely detract from national evaluation and tracking efforts. A solution may be to track each MM at either the most detailed scale available or at a scale appropriate to the available data. However, local governments that will be implementing many of the MMs typically do not have the manpower, time, tools, or the motivation to track at a useful scale (for example: new or existing SWM, stream restoration or operating OSDS systems).

Due to the disparity from State to State and even regional differences at the County level within a state, National baseline measures may not be realistic. A (user friendly) national data-gathering tool (national database) could be an appropriate option, especially if CNPs are well funded, and well staffed.

Many specific questions arose when CNP tracking and monitoring mechanisms were discussed. Many of these questions can best be answered at the State level, based upon the prioritization of management measures, data availability and resources. As programs develop specific ‘successful’ tracking mechanisms, present it to the other programs, possibly through an internet newsletter with the other types of program successes.

For example:

1. Look at the specific laws, regulations, programs, etc. that a State has cited in their program document.
2. Look at how each of these individual programs monitors its activities.
3. Use, with modification as needed, these existing tracking mechanisms to collect data.

4. Develop coordinating mechanisms to analyze and present data in a coherent format.
5. Determine which high priority measures are NOT presently tracked
6. Develop methodologies to track those measures.

The roles of the State 5/15 year plans, as called for under the 1998 Administrative Changes could be seen as the mechanism for monitoring and tracking in so much as these plans are the one coordinated CZARA document that could pull together the implementation strategies that all relevant state agencies have for the MMs under their purview. However, not all states have drafted these plans, and NOAA and EPA have never decided how to review and "approve" them, nor has it ever really been determined how best to use them.

Suggested Approaches

The group reviewed current MM tracking policies, procedures and methodologies in several States and assessed MMs for the following: ability to be tracked, currently tracked, tracking method and data format and availability. Using these criteria, we then provided an example of an approach for reporting implementation of the MMs. MMs may be structural (e.g. SWM) or policy based (e.g. pollution prevention). Some MMs may not be trackable or tracked for a given spatial location. The options described here explore these issues and offer examples for tracking each type of MM.

Possible Prioritization Approach: Each State will prioritize MM's for tracking.

The priority for each MM's tracking will be tied to the priority ranking of each MM's importance within the CNP established by the State in concurrence with NOAA and EPA. The ranking system should take into account information availability, the extent of land use, the measured effects, the sources of water body impairments as identified in the State's impaired waters listing (Sec. 303(d) of the Clean Water Act), state water quality assessments (Sec. 305(b)) and any pollution potential analysis that may be relevant.

Priorities for tracking should be identified as high, medium or low. The level of investment in obtaining data, developing tracking systems and detailed reporting will be a function of the MM's priority ranking. NOAA and EPA may wish to establish a core set of 6217 measures tracked and reported by every state for the purposes of national consistency.

Alternative Prioritization Approach: Each State will prioritize watersheds that are impacted or threatened by nonpoint source pollution and track MMs that are most appropriate to improving water quality in protect those watersheds.

States could prioritize watersheds or waterbodies for tracking, instead of MMs. These prioritized locations would be monitored for impairments or changes to land uses that threaten to degrade water quality by working in coordination with the State TMDL program. Based on the pollutants of concern, CNP could determine which MMs would

be most likely to be effective and should be the highest priorities for implementation and tracking. Attempting to account for CNP implementation progress in an impaired coastal watershed would be very valuable and also foster program integration.

Similarly, state ambient water quality monitoring programs, 305(b) annual water quality assessments, watershed programs, and 319 NPS programs all can provide a wealth of data and information on priorities and needed MMs that would not need to be generated in parallel by the CNP. Rather, CNP should be a component of these comprehensive programs and work in concert with them.

However, it is important to ensure that a measure is possible for management measures of all classes. Demonstrating that the issue is not of a high priority or claiming resource constraints could weaken the CNP framework on a state and federal level.

Possible Tracking approaches for Management Measures

Where measures clearly require the use of specific practices or sets of practices (e.g., erosion control techniques, spill prevention practices) tracking the acceptance and use of the practices makes sense. Where alternative methods have been approved by NOAA and EPA (voluntary or incentive programs deemed consistent with the intent of the (g) guidance), the State might focus its tracking on the extent of program coverage, funding used, etc.

Example 1.

With the aid of NOAA 6217 grant funds, Maryland initiated a project to collect information on stream, wetland, and riparian forest buffer restoration activities, develop a web-based system detailing restoration projects, and create a framework to assess the benefits of these activities. It has involved the collection of data among multiple local and state government agencies. Primarily, data collection involved interns reviewing state waterway permits to identify restoration projects and enter project elements into a tracking database. Additional tracking efforts have required collection of data from individual counties. Overall, the four main objectives to the project are to identify existing tracking and assessment activities, establish a tracking database, develop a web interface to report restoration activities using a map interface and tabular reports, and create a framework to assess the benefits of restoration activities.

With the data collection portion of the project nearly complete, the final two objectives are the current focus of work. The framework to assess the benefits of restoration work will take advantage of geographic setting by hydrologic regions in the State. Finally, the web-interface will be hosted at Maryland DNR's web site. This reporting system will allow those with access to the internet to learn about the types of restoration efforts in their watersheds and will give access to detailed project information.

Example 2.

Massachusetts is working on a GIS-based approach to track the implementation of management measures and to assess over time the success of the measures in reducing

pollution loads and improving water quality. Through consultants they are developing a Coastal Nonpoint Source Monitoring (CoNPS) Database. This database will provide for the monitoring and best management practice (BMP) data storage, analysis, and presentation needs of the Coastal NPS Program and will be developed through a pilot project in the Parker River Watershed. The intent is to use both a targeted watershed approach but also focus on high-priority MMs. We are not going to try to evaluate the entire coastal watershed (2/3 of state) not track every single MM. The Parker River Watershed is the first targeted area, in FY 04 we will transfer to another region (TBD). The specific tasks of the project are:

Task 1. Inventory and prioritize data sources.

Task 2. Acquire data sets for CoNPS Database.

Task 3. Populate CoNPS Database: Management measure (BMP) data and WQ monitoring data

Task 4. Design and develop database, data maintenance strategy.

Task 5. Spatial and analytical tool development: Data Filter; Spatial Graphics and Statistics Utilities

Task 6. Data entry strategy and user interface.

Task 7. Testing, training, and user manual.

For MM (or related) datasets we have: land use (31 classes that include commercial, 4 types residential, transportation, etc.), land owner parcels, septic system inventory, stormwater outfalls, marinas, docks, mooring fields, some general ag. and forestry info, and stormwater BMPs. We also have impervious areas for each land use class. For WQ datasets, we have about 20 data sets w/ various parameters at different stations throughout the watershed. The beta version of the Arc view database and spatial and analytical tools is expected by end of April 2004.

Example 3.

The tracking and monitoring system that is being developed by Delaware is a GIS-based tracking and monitoring system, which utilizes the Access database program to aid in the management of the data. The system uses previously identified markers, components of a management measure used for tracking, to assess implementation of the management measure as well as spatial analysis to evaluate the effectiveness each of the management measures.

Example 4.

The Pennsylvania Coastal NPS program is funding Penn State University's Environmental Resources Research Institute (ERRI) to modify and expand a GIS-based system to allow our conservation districts to enter data on BMPs/management measures and watershed plans. This will work in concert with agreements we have with the conservation districts to provide technical assistance for and to track progress in 6217 management measure implementation. The ERRI project is called "GIS-Based NPS Project Tracking Tool", and contains various data layers and capabilities that will allow users to enter locations and data for a lot of different types of projects and activities. Users will be able to organize and summarize data by various boundary types (counties, watersheds) and stream reach, and to generate reports and maps.

Example 5.

The Generalized Watershed Loading Functions (GWLF) model was developed at Cornell University to assess the point and nonpoint loadings of nitrogen and phosphorus from a relatively large, agricultural and urban watershed and to evaluate the effectiveness of certain land use management practices (Haith and Shoemaker, 1987). One advantage of this model is that it was written with the express purpose of requiring no calibration, making extensive use of default parameters. The GWLF model includes rainfall/runoff and erosion and sediment generation components, as well as total and dissolved nitrogen and phosphorus loadings. The current version of this model does not account for loadings of toxics and metals, but with minimal effort improvements can be made to add to this feature. This model uses daily time steps and allows analysis of annual and seasonal time series. The model also uses simple transport routing, based on the delivery ratio concept. In addition, simulation results can be used to identify and rank pollution sources and evaluate basinwide management programs and land use changes. The model also includes several reporting and graphical representations of simulation output to aid in interpretation of the results. GWLF is used by several states to develop TMDL's. The AV component or ARCview was developed as a front end to provide input data and visualization capabilities to GWLF. The AV component currently contains data for Pennsylvania. PRedICT is an acronym for Pollution Reduction Impact Comparison Tool. It is a separate module to AVGWLF that allows the user to compare the load reduction abilities for various BMPs in a watershed and compares that information to the load reduction information identified in AVGWLF.

Trackable MMs that are being tracked as point geolocational data

The MMs should be tagged to the stream reach code or a state delineated watershed boundary. Where available, load reduction information should be included. This information should be compared with available baseline information in order to determine the level of implementation.

Example 1.

South Carolina digitizes all parcels of submitted stormwater/land disturbance permit applications (greater than .5 acre, within ½ mile of receiving waterbody).

Example 2.

The Delaware Coastal Programs partnering with the Ground Water Discharges Section and the Non-point Source (319) Program have been working on the development of a permanent On-site Disposal System Compliance Inspection Program and Tracking System. A database has been created using MS Access with GIS capabilities. It is the intention to have this database linked to the Department of Natural Resources and Environmental Control's Environmental Navigator as resources become available. This project will enable the Department of Natural Resources and Environmental Control to identify failing on-site disposal systems and estimate the costs involved to address this issue statewide.

Trackable MMs that are being tracked as Watershed geolocational data

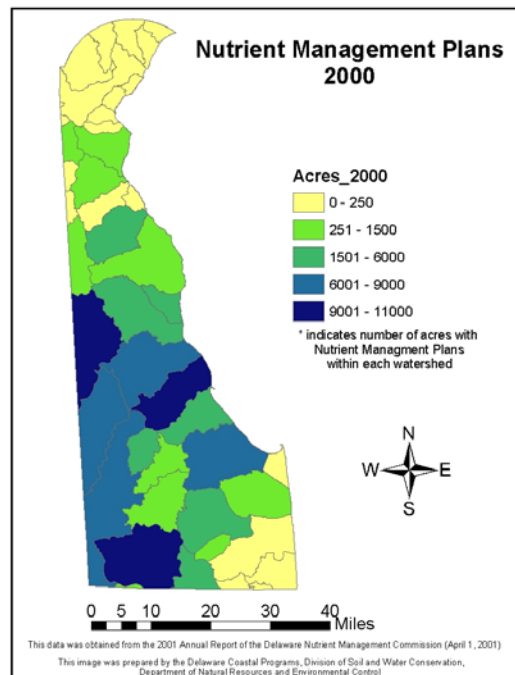
The MMs should be tagged to a state delineated watershed boundary. Where available, projected load reduction information should be included. This information should be compared with available baseline information in order to determine the level of implementation.

Example 1.

South Carolina requires large development projects within 303 (d) impaired watersheds to demonstrate by modeling that the site will not further degrade the receiving water. The primary cause of stream listing in SC is due to fecal coliform. This has caused some concern among site designers, particularly those who must “demonstrate” that their site will not cause instream degradation of shellfish water classes (i.e., no greater than 14 MPN per 100 ml). OCRM recently published a Post Development BMP Design Aid Manual, which introduced the Integrated Design and Assessment for Environmental Loadings (IDEAL for short) model that uses spreadsheet input to approximate loadings and die off rates in various stormwater BMPs. The higher standards for projects in 303 (d) listed areas have produced several adaptive measures such as manure management planning for a PUD in Beaufort with riding stables and required pooper-scooper bylaws in a subdivision in the Charleston area. Other sites have had to design detention ponds with large sediment forebays. Most stormwater “demonstrations” require water quality monitoring and reporting.

Example 2.

The Delaware Nutrient Management Program in the Department of Agriculture submits an annual report each year to the Nutrient Management Commission detailing their efforts. Information from this report has been translated into maps by the CNP to evaluate MM implementation. The CNP will look at the number of acres under Nutrient Management Plans versus the number of acres that should have nutrient management plans on a watershed scale.



Trackable MMs that are not being tracked

For MMs that are not currently being tracked, a statistical approach could be developed as described in the following EPA documents: Techniques for Tracking, Evaluating and Reporting the Implementation of Nonpoint Source Control Measures – Agriculture, Forestry and/or Urban.

Example 1.

Identification and Analysis of Aquatic and Riparian Habitat Impairment Associated with Dams of the Virginia Tidewater Region. The goal of this study was to develop an accurate and comprehensive database for dams in the Tidewater region of Virginia, contribute to the evaluation of potential habitat degradation below these existing dams, and to develop a process for the quantitative evaluation of potential habitat degradation below existing dams. We documented the location and status of 499 dams and measured habitat characteristics of a statistically valid number of tributaries in Tidewater, Virginia. In addition, a series of statistical analyses were performed to assess the quantitative and qualitative habitat variables collected in reference to hydromodification characteristics. The statistical approach of our study was designed 1) to identify potential degradations of habitat due to dam maintenance and operation, and 2) to determine if certain attributes (classes) of the dams could be linked to a specific type of degradation. Results show that impounded streams of the Tidewater region do exhibit degraded conditions when compared to reference conditions. However, results also show that over time streams appear to return to a more balanced system.

Example 2.

Clean Marinas – identifying the number of marinas participating is certainly a good start, ideally some site visits could be conducted to determine the extent of management practice implementation at participating marinas. A survey/checklist could be developed based on the marina management measures. Then upon certification, or as part of the final ‘check’ for certification, the checklist can be completed and compiled to determine overall implementation of each management measure.

Trackable MOU/Policy that are being tracked

A brief policy analysis can be developed that provides a description of the extent and impact of the MOUs/policies/laws developed or used by the CNP.

A detailed survey type document, based on the CNP MM as they pertain to a certain category and to be completed by the implementing agency, to document the policies used by the agencies. This could be updated every couple of years as part of the 5,15 year plan. OR, this could be used by programs initially to determine implementation until time and funding allow for improved tracking.

Example 1.

The coastal program in South Carolina has no authority over silviculture or agriculture activities. Despite this, there are MOAs to network the CZARA program with these classes, for example: There is a voluntary compliance inspection program conducted by the South Carolina Forestry Commission (SCFC). The SCFC produces monthly reports

and annual compilations of silviculture BMP compliance rates. During the 2001-2002 fiscal year, the state's BMP foresters conducted 318 compliance inspections. The compliance rate for harvesting BMPs was 95.3%.

Trackable MOU/Policy that are not being tracked

A brief policy analysis can be developed that provides a description of the extent and impact of the MOUs/policies/laws developed or used by the CNP.

A detailed survey type document, based on the CNP MM as they pertain to a certain category and to be completed by the implementing agency, to document the policies used by the agencies. This could be updated every couple of years as part of the 5,15 year plan. OR, this could be used by programs initially to determine implementation until time and funding allow for improved tracking

Untrackable MOU/Policy

A brief policy analysis can be developed that provides a description of the extent and impact of the MOUs/policies/laws developed or used by the CNP.

A detailed survey type document, based on the CNP MM as they pertain to a certain category and to be completed by the implementing agency, to document the policies used by the agencies. This could be updated every couple of years as part of the 5,15 year plan. OR, this could be used by programs initially to determine implementation until time and funding allow for improved tracking.

Appendix A

As part of the ongoing efforts by the states, National Oceanic and Atmospheric Administration (NOAA) and Environmental Protection Agency (EPA) to implement coastal nonpoint source pollution control programs four workgroups were established with the express purpose of evaluating key issues pertaining to the coastal nonpoint program. The workgroups are: Program Implementation, Monitoring and Tracking, Program Evaluation and Reporting, Program Coordination.

Planning committee members shown in *italics*. Chairs shown in **bold**.

Monitoring and tracking	Program coordination	Program evaluation and reporting	Program implementation
<i>Kim Cole, DE</i>	<i>Greg DuCote, LA</i>	<i>Katharine Dowell, MD</i>	<i>Mary-beth Hart, CT</i>
<i>Josh Lott, NOAA</i>	<i>John Kuriawa, NOAA</i>	<i>Don Waye, EPA/HQ</i>	<i>Greg DuCote, LA</i>
<i>Fred Suffian, EPA/R3</i>	<i>Katharine Dowell, MD</i>	<i>Julie Bixby, VA</i>	<i>Mark Slauter, VA</i>
<i>Jack Gregg, CA</i>	<i>Beth Walls, VA</i>	<i>Mark Slauter, VA</i>	<i>Katharine Dowell, MD</i>
<i>Beth Walls, VA</i>	<i>Joel Peterson, MN</i>	<i>Fred Suffian, EPA/R3</i>	<i>Fred Suffian, EPA/R3</i>
<i>Louise Hanson, MD</i>	<i>Michael Friis, WI</i>	<i>Ralph Cantral, NOAA</i>	<i>Katy Flahive, EPA/HQ</i>
<i>Pat Pingel, PA</i>	<i>Duane Robertson, EPA/R4</i>	<i>Mike Walker, MS</i>	<i>Duane Robertson, EPA/R4</i>
<i>Bruce Carlisle, MA</i>	<i>Bill Rohring, USVI</i>	<i>Amanda Punton, OR</i>	<i>Bruce Carlisle, MA</i>
<i>Randy Shaneyfelt, AL</i>	<i>Syed Ali, CA</i>	<i>Bill Rohring, USVI</i>	<i>Randy Shaneyfelt, AL</i>
<i>Frank Lopez, SC</i>	<i>Beth Potter, AK</i>	<i>Susan Miller, HI</i>	<i>Susan Miller, HI</i>
<i>Bonnie M. Willis, DE</i>		<i>Paul Stacey, CT</i>	<i>Syed Ali, CA</i>
<i>Paul Stacey, CT</i>			<i>Beth Potter, AK</i>
			<i>Mike Peloquin, MN</i>

Appendix B

Monitoring & Tracking Questions

1. What are the purposes of monitoring and tracking? To measure water quality improvements? To document program progress and successes?
2. Do states need to track every management measure (MM) to determine program implementation? Is it possible/necessary to track every single management measure? At what scale? If not, will there be national “baseline measures” that all states must track?
3. How do we track the programmatic and social management measures since there are no physical on the ground measures to view?
4. Can a statistical approach using a sampling procedure by land use relating back to management measures be used to validate MM implementation? Are data for such an approach readily available?
5. Is there methodology to track TMDL implementation and can that satisfy section 6217 MM implementation in TMDL areas?
6. Is there a methodology to track Watershed Plan implementation and that can satisfy section 6217 MM implementation where such plans exist?
7. Will monitoring in TMDL implementation areas satisfy the 6217 monitoring program requirement? Will the TMDL program require monitoring in TMDL implementation areas?
8. Will monitoring Watershed Plan implementation satisfy the 6217 monitoring program requirement where it is occurring?
9. What data on agricultural BMPs are readily available through NRCS? Are the data sufficient to measure implementation of CZARA agriculture measures?
10. What existing information is available that states can use to monitor and track implementation of CZARA measures?