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State Source Water Assessment and Protection Programs Final Guidance

Chapter 2

August 1997

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Final Guidance for State Source Water Assessment Programs

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I. INTRODUCTION

The SDWA Amendments of 1996, P.L. 104-182, include amendments to section 1428, and a provision adding a new section 1453 to the Act. Section 1453 requires states to develop, submit to EPA, and implement, once approved, SWAPs. These required state SWAPs are to be submitted to EPA no later than 18 months after EPA publishes this guidance in final. The states must meet all the requirements under sections 1453 and 1428 (b) and (c) of the SDWA Amendments of 1996. Within 2 years after EPA approval of the program (unless extended), states are required to complete assessments for all PWSs which include source water protection area delineations, inventories of certain contamination sources, and determinations of susceptibility that provide for **“the protection and benefit of public water systems.”**

This document provides guidance to EPA personnel and states on how best to implement the Source Water Assessment and SWP programs under the SDWA, as amended. It also provides guidance to the public and to the regulated community on how EPA intends to exercise its discretion in implementing the source water assessment and protection provisions of the

SDWA. The guidance is designed to implement the statutory requirements and national policy on these issues.

States are required to involve the public in developing their SWAPs and to make the results of the assessments for public water supplies available to the public when completed. In doing so, EPA expects that such information will encourage the development and implementation of complete local SWP Programs, which incorporate the SWAP assessment functions, and add the establishment of local teams, source management, and contingency planning. (See Chapter 3 for descriptions and means for supporting these additional steps of a complete SWP Program.)

The core purpose of the source water assessments in any source water protection area is to provide a strong basis for developing, implementing, and improving SWP actions in that source water protection area. Furthermore, states need to consider the many other programs under the SDWA and other environmental laws (detailed in Chapters 4 and 5) whose success for public health protection depends upon source water assessments, EPA strongly recommends that these assessments be viewed not as activities

done for their own sake, but to protect source waters, and to establish a “good science” basis for providing greater regulatory flexibility to reduce costs and maintain the delivery of safe water to the public.

The elements that a submittal will need to contain in order to be approved by EPA are described in Part II in this chapter. Many of these are explicit in sections 1453 and 1428 and must be included as specified; many other elements, EPA believes, are crucial for an effective SWAP. For these latter elements only, where a state can show it has an equivalent alternative(s), EPA will approve the alternative element(s), provided that the state demonstrates that the alternative meets the same functional objectives. There are also several recommendations that EPA will make for state submittals, but these recommendations are optional for the states. In other words, EPA is not seeking to apply the guidance as a regulation, but intends, where appropriate, to allow equivalent alternatives to meet the functional objectives of the statute.

Tribal Organizations. While the statute does not explicitly require the tribes to implement SWAPs, EPA recommends that each tribe implement such a program to the extent appropriate resources are available to do so. Tribes can benefit from ensuring that the PWSs on tribal lands undertake

assessments. Some tribes have implemented WHP activities and watershed approaches. If so, these tribes have already begun to delineate their source water protection areas and likely have begun a contamination source inventory. These tribes are encouraged to continue to implement these programs.

If a tribe decides to establish and implement a program, it may submit it to EPA for approval. The process and timetable for tribal programs, once submitted to EPA, will be the same as described here in Chapter 2 for states. EPA and an interested tribe will negotiate a timetable for implementation based on its resources for the program.

Tribes may also want to consider participation in a state SWAP as an alternative to, or in conjunction with, their own program. This could include involvement on a state’s technical and citizens advisory committee(s), as described in section II.A of this chapter.

Tribes can finance development and implementation of a SWAP in various ways. One possibility is to receive funding from the states. Tribes can also apply for EPA to fund part of their programs using EPA’s discretionary funds. Several tribes have used CWA funding to support source water assessment-type efforts.

Organization of this Chapter. The remainder of this chapter is presented in three parts:

- Part II includes the requirements and options for: public participation in developing the state submittal; the state’s assessment approach; making assessments available to the public; and program implementation.
- Part III includes the specific requirements for when and how the states will submit SWAPs to EPA and when and how EPA will approve or disapprove them.
- Part IV includes a discussion of the opportunities for states to use the DWSRF and other funding sources for developing and implementing SWAPs.

II. CONTENT OF STATE SUBMITTALS

In order to be approved, a state submittal needs to contain the following four sections:

- Description of how the state achieved public participation in developing its submittal. (See section II.A.)

- Description of the approach the state will take to implement a SWAP, including the goals for the state SWAP consistent with the national goals of protecting and benefiting PWSs. (See section II.B.)
- Description of how the state will make the results of assessments available to the public. (See section II.C.)
- Description of how the state will implement its chosen approach to SWAPs. (See section II.D.)

A. Adequate Public Participation in Developing the State Source Water Assessment Program

Section 1428 (b) of the SDWA requires that, “to the maximum extent possible, each state shall establish procedures, including but not limited to the establishment of technical and citizens advisory committees, to encourage the public to participate in developing the protection program for wellhead areas and SWAPs under section 1453. Such procedures shall include notice and opportunity for public hearing on the state program before it is submitted to the Administrator.” EPA believes Congress intended that a state’s public participation process would build public support and

responsibility for local water supplies. Therefore, to achieve this goal, for a SWAP to be approvable, a state needs to have utilized a public participation process for developing and implementing a SWAP.

Further, to understand how the state implemented section 1428(b), a state submittal needs to contain a description of how the state ensured broad representation on advisory groups and wide public involvement in developing its submittal by having:

- Convened a statutorily required statewide technical advisory committee and a citizens advisory committee. One committee is possible if a state demonstrates in its submittal that the structure, membership, and process of the committee provided for viewpoints for both technical (i.e., technical feasibility and effectiveness of a state's SWAP approach) and citizens (i.e., desirability and appropriateness of a state's SWAP approach) considerations. The state needs to provide adequate opportunity to participate on the advisory committee(s) to representatives of public interest groups (e.g., river and watershed organizations), public health groups (e.g., medical associations), vulnerable population groups (e.g.,

elderly, transplant patients, dialysis patients, chemotherapy patients, people living with HIV/AIDS), business groups (e.g., agricultural chemical manufacturers and small businesses), local governments, tribes, land conservation groups, drinking water suppliers of various type and sizes, wastewater treatment plant operators, farmers and developers, and others. While a state needs to provide opportunities for these groups to participate, it may still proceed with program development or implementation if any group decides not to participate.

Because a state's response to the recommendations of the committee(s) should be on the public record, a state needs to describe in its submittal the advice of the committee(s) regarding key program development questions such as those identified in the several tables in this chapter. (See Tables 1 through 6.)

- Conducted public hearings or public workshops, focus groups, conference calls, or meetings around the state with prior dissemination of invitations and basic information. Opportunities need to be provided for general

public involvement by wide and effective advance notice of the involvement process; wide distribution/availability of decision planning documents with adequate time to review; meaningful and substantial opportunities for all interested parties to provide detailed comments; and provision of direct, genuine feedback from state program officials. In addition, a state might consider internet conferences or other outreach actions.

Furthermore, a state needs to include in its submittal a responsiveness summary showing how the significant public comments and opinions were used in developing the submittal. These may be full written responses on the record to all substantive comments, summarizing agreement, disagreement, and substantive reasons for each.

States may use certain DWSRF set-aside funds to reimburse members of the committee(s) or others for travel and other expenses associated with public participation, based on identified need. However, EPA recommends that such expenditures be consistent with the level of funding afforded for the entire assessment effort.

To the extent that:

- (1) A state has implemented these required SWAP elements for public participation during development of its WHP Program and/or Watershed Approach, (or when developing the state's ground water or the state's surface water programs); and
- (2) These programs included delineations, source inventories, and susceptibility determinations similar to the requirements in this guidance;

the state needs to undertake only those public participation requirements it has not previously completed.

EPA strongly encourages the state to continue to work with its technical and citizens committee(s) to solicit advice as the assessments are being done. The committee(s) will provide valuable linkages to the stakeholders within the state as assessments are completed and the results and assessment information are made available to the public. In addition, the committee(s) can advise the state on how to use the assessments in implementing prevention programs and improved treatment methods.

Table 1
Public Participation:
Key Issues for Advisory Committee(s)

1. Should the state do more to provide adequate opportunity for stakeholder groups to participate in development of the program? If so, how?
2. Should the state do more to receive recommendations from both technical and citizen's perspectives?
3. What should the state do for ongoing public participation in implementing assessments once the state's SWAP is approved?

STATE TECHNICAL AND CITIZENS ADVISORY COMMITTEES

- * **Oregon Department of Environmental Quality (DEQ):** Oregon's DEQ developed a WHP Advisory Committee for policy review and technical advice for their WHP Program. The committee, 16 people from industry, utility companies, environmental organizations, not-for-profits, and state and local government, met a total of fourteen times over a period of two years from 1992 to 1994. DEQ offered to pay travel expenses, but only one member requested reimbursement, based on need. Meetings were open to the public.

Potential members knew what was expected of them before joining the committee. DEQ explained the extent and duration of the commitment, the goal of working through issues to provide substantive input, and the reality that the committee's recommendations would not necessarily be DEQ's final policy decision. The committee's public concurrence with the final product was one of many extremely valuable benefits of the process.

A significant part of the success of the committee was due to DEQ's efforts at planning even before the first meeting. Committee meetings were staffed by two people: one to take notes or minutes and handle the logistics and administrative tasks, and one to provide technical and policy guidance and develop the agenda. The committee presented recommendations to DEQ on all aspects of the WHP Program.

- * **Illinois Environmental Protection Agency (IEPA):** The Illinois EPA built on its tradition of public involvement in forming a Source Water Protection Technical and Citizen's Advisory Committee. The committee of 21 represents PWSs, environmentalists, business, farmers, and federal and state government. IEPA provides administrative support and a meeting room and offers travel expenses. The option of reimbursement ensures that committee membership is based on qualifications, not geography.

Prior to the first meeting, committee members received copies of IEPA's planning documents and the U.S. EPA *State Source Water Assessment and Protection Programs Draft Guidance*. The meeting was devoted to discussion of the structure and composition of the committee itself, background on the new SDWA and IEPA's related programs, and input and suggestions on IEPA's proposed source water assessment and delineation program. In future meetings, the committee will continue to provide detailed input to IEPA.

The committee will continue to meet on demand throughout the planning and implementation of the program. Illinois has many mechanisms for public participation, and indeed many Technical and Advisory Committee members serve on other committees as well. Therefore, the group decided to meet on an as-needed basis. One specific focus of the group will be to provide input on the development of public documents.

In addition to the committee's input, IEPA is holding a public hearing on the CWA and SDWA revolving loan funds intended use plan. Advance notice of the public hearing was sent out to over 200 potential watershed and ground water stakeholders. A detailed presentation of IEPA's proposed source water assessment and delineation program will be presented at this hearing. Public comment forms, to obtain written input on the program, are also planned.

B. Requirements/Options for State Assessment Approaches

1. Statutory Requirements

The goals for state SWAPs are written in the statute at section 1453 (a)(1), which provides that assessments will be accomplished “. . .for the protection and benefit of public water systems and for the support of monitoring flexibility. . . .”

Section 1453 (a)(2)(A) requires that states “delineate the boundaries of the assessment areas in such state from which one or more public water systems in the state receive supplies of drinking water, using all reasonably available hydrogeologic information on the sources of the supply of drinking water in the state and the water flow, recharge, and discharge and any other reliable information as the state deems necessary to adequately determine such areas.”

Section 1453 (a)(2)(B) also requires that states “identify for contaminants regulated under this title for which monitoring is required under this title (or any unregulated contaminants selected by the state, in its discretion, which the state, for purposes of this subsection, has determined may present a threat to public health), to the extent practical, the origins within each delineated area of such contaminants to determine the susceptibility of the public

water systems in the delineated area to such contaminants.”

Section 1453 (a)(3) requires, in part, that “the Administrator's approval of a state program under this subsection shall include a timetable . . . allowing for not more than 2 years for completion after approval of the program.” “The Administrator may extend any timetable. . . to extend the period for completion by an additional 18 months.”

2. Strategic State Approaches

(a) Initial State Actions

One of the first steps in any SWAP needs to be a review of relevant, available sources of existing data (including susceptibility determinations) at the federal, state, and local levels. This would include gathering and analyzing the data to determine what additional information may need to be collected and analyzed to complete individual assessments and the state's assessment program. Many states have already gathered considerable data on contamination sources, performed vulnerability assessments, and analyzed monitoring data on contaminants in implementing the Phase II and V rules and in developing approved waiver programs under those rules. Many states have also performed similar work in developing WHP programs. EPA strongly encourages states systematically to assemble, review,

and as appropriate utilize information and analyses from these and other existing sources including those specified in section 1453 (b)(6), early in their SWAP implementation. Such information sources could include delineations and assessments done under a WHP program or state watershed approach; vulnerability assessments, sanitary surveys, monitoring programs, delineations and assessments done under a state management plan for pesticides; and any other delineations and assessments done under the CWA (including state 305 (b) reporting particularly for waters designated to be used for drinking water sources under state water quality standards), or under state or local statutes. Moreover, any water system with an existing waiver may already have a substantial amount of information needed for a source water assessment, meaning these systems are among the likeliest candidates for expeditious completion of assessments.

(b) Completeness

Section 1453 requires states to complete their SWAPs no later than 2 years after program approval, or, with an approved time extension, up to no more than 3 ½ years after program approval. EPA defines that a state program is “complete” only when a state has completed all the actions in its EPA-approved SWAP and met all the requirements under sections 1453 and

1428(b) of the SDWA Amendments of 1996 (including the completion of source water assessments for all PWSs, and the release of the results of the assessments to the public). To gain EPA approval of its program, the state needs to include in its program submittal:

- A description of the level of exactness and detail that each assessment (or category of assessments) will achieve once it is considered by the state to have been “completed.” A “completed” assessment for a PWS(s) must include:
 - A delineation of the source water protection area,
 - A contamination source inventory for that source water protection area, and
 - A determination of the PWS’s susceptibility to contamination by sources inventoried within the source water protection area.

- A description of how each assessment will be “for the protection and benefit of the public water systems” in the state so that EPA can determine whether it does meet the goals of section 1453.

In regard to the latter requirement, EPA cannot properly evaluate whether a SWAP provides for the protection and benefit of PWSs unless the state describes the linkage of these assessments to ongoing or future SWP efforts. Thus, an approvable state SWAP submittal needs to describe such linkages, including whether the state plans to implement a SWP Program and how a SWAP will link with existing protection programs such as WHP programs under section 1428 (b). Several options for the SWP approaches are described in Chapter 3. EPA hopes to ensure the information gained through SWAPs will be directly used for protection actions. EPA, therefore, intends that this requirement for state submittals will prevent the waste or inefficient use of the DWSRF set-asides for source water assessments by ensuring their utility as intended by Congress and will ensure that clear goals for the use of the assessments will be described to the public for review during a state's process for SWAP development. This description may also be consistent with—and may assist in clarifying—plans for the DWSRF set-asides described in the state's IUP, and any work plan based on the IUP, as required under section 1452. SWAPs are intended to be supplemental and used to support existing and future SWP efforts, including WHP programs, which remain in force (under the SDWA Amendments of 1996).

(c) *Differential Approaches*

Significant funds have been made available through the DWSRF set-aside for the SWAPs. Many states have already undertaken considerable efforts through their WHP and watershed protection programs and through their state 305(b) reports to assess the quality of their source waters and the nature of the threats. Thus, EPA realizes that achieving the same level of exactness and detail in assessments for all PWSs is a significant undertaking that may not be possible with the funding provided and that may not be appropriate for the purposes of this assessment.

Therefore, EPA recommends that a state establish a strategic approach to its SWAP that will result in different levels of assessments (i.e., with different degrees of exactness for delineations and detail in inventories and susceptibility determinations) for individual or categories of PWSs.

Factors for Determining Approaches.

There are several alternative approaches or factors that a state could employ separately or in combination:

- **Previous Assessment Efforts for PWSs.** Under WHP and Watershed Protection approaches, formal assessment efforts may have already been completed for many

PWSs. The state needs to determine which of these may have already met the goals of the SWAP and, therefore, would need little or no additional effort within the timeframe of their section 1453 SWAP.

- **Type and Extent of Threats.** States often have a good sense of the potential threats to many of the systems operating within their borders, even in the absence of formal assessments. For example, based on general information about the hydrology or hydrogeology and land use patterns influencing the source waters of a PWS, (e.g., information gathered for existing monitoring waiver programs, as well as available monitoring data), a state can make some preliminary decisions about which systems are threatened and which are not.
- **Type and Size of PWS.** Some states may target larger systems for more extensive assessments due to the greater population risks and desire to reduce these risks, whereas other states may target smaller systems for more extensive assessments due to these systems' lack of economies of scale and need for assistance in assessing and

understanding the condition of their source waters.

- **Objectives for a Source Water Assessment.** Some states may desire to vary assessment efforts by the objectives they set for those systems. For example, a state may target some systems for comprehensive protection activities while other systems may be targeted for more focused protection from certain contaminants (e.g., microbial) or situations (e.g., spills). Further, some states may target certain systems for alternative monitoring or for maintaining filtration avoidances and conduct different levels of assessments for these systems than for others.

Examples of Approaches . There are many combinations of approaches that are approvable. The following are several illustrative examples of how states could differentiate assessments:

- For transient non-community systems, a state may decide to conduct assessments that identify sources of microbial and nitrate contamination only within a specified distance from the drinking water well, leaving more detailed assessment efforts for all

community water systems (CWSs) and the majority of non-transient non-community water systems (NCWSs).

- The state may know, based on information from, for example, a monitoring waiver program, of systems that are drawing from confined aquifers that produce water which is hundreds if not thousands of years old. A state could decide that assessments for these PWSs be very limited because the types of sources of contamination that could threaten these waters are very specific and few.
- For systems which are seeking benefits for their PWSs through regulatory flexibility (e.g., filtration avoidances), or that want to be equipped to do SWP, states may want to perform more detailed assessments that require an understanding of their complex hydrologic patterns and identify and analyze the nature of the threats from many sources of contamination.

While EPA recommends that states choose a differential approach, each state must have a coherent rationale for the approach it chooses (i.e., it must make sense for the

state's specific situation). Also, to be approvable, the state submittal needs to explain that the approach to complete the assessments provides “for the protection and benefit of PWSs” in that state.

Process for Approaches. States may undertake differential approaches to assessments in many different ways. EPA recommends states consider one or both of the following processes:

- An iterative process whereby a state initially uses readily available data to do assessments for all systems. Then based on the results of these initial assessments, more detailed assessments are undertaken for those systems the state determines need more exactness, specificity, and thereby additional effort; and/or
- Similar to the iterative process, where one level of assessment is completed but then a more detailed effort follows, an interim assessment provides some initial information. The interim assessment is undertaken to provide a basis for some immediate benefit to a system(s) (e.g., a less costly monitoring or treatment alternative). However, a more comprehensive assessment would then be undertaken to meet the

requirements, including timeframes, of section 1453.

Conversely, the process that states use for collecting and analyzing data to guide decisions on monitoring or treatment alternatives may be equivalent to an interim Section 1453 assessment; or it is possible to consider these as complete Section 1453 assessments, **but only for those contaminants that have been adequately addressed by the state's analysis and in accordance with this guidance.**

Coordination Using the Approaches. A state's differential approach to assessments can provide the blueprint for making the state's efforts for coordination the most cost-effective possible. The state can align specific federal/state programs to specific elements of its differential approach. For example, the state may know that the majority of transient NCWSs are operated by state and federal land stewardship agencies such as forest and park land agencies; the state SWAP could enter into a memorandum of understanding with these other agencies and programs to accomplish the type of assessments targeted for these systems.

Similarly, an iterative process could point to a particular strategy for coordination. In

fact, EPA recommends that, for an initial assessment, a state coordinate with federal agencies, other states, other countries, and tribes to gather and review all existing data available at the state level. With a completion of this initial assessment, the state's coordination efforts would focus on supporting and/or working closely with local stakeholders.

1.	Has the state done an initial review of all data sources available and determined the scope of the need for additional information?
2.	What level of exactness/detail should be achieved by each assessment to be considered "complete?"
3.	Should the level of assessment provide for the protection and/or benefit of the public water supply(s)?
4.	What should be the basis for differential levels of assessments to be completed for different public water supplies or categories of public water supplies? System type or size? Preliminary information about the existence of threats? Other?
5.	How will the state SWAP be coordinated among various environmental and other state programs (e.g., PWSS, water quality, water resources, agriculture, land use, information management, geologic)?
6.	How would the state's assessment program lead to state watershed approaches and link to wellhead and other protection programs?

3. ***Requirements/Options for Delineations, Source Inventories and Susceptibility Determinations***

Each source water assessment for a public water supply(s) must include three elements: a delineation of the source water protection area; an inventory of significant potential sources of contamination within that area; and a determination of the susceptibility of the public water supply(s) to the sources inventoried. These assessments can be done on an “area-wide” basis involving more than one PWS. The following describes what EPA believes these efforts require and what the state needs to include in its program submittal to meet the intent and requirements of section 1453 and thereby gain Agency approval. A state may put forth an alternative to what EPA believes these efforts require, provided the state demonstrates that the alternative meets the same functional objectives.

(a) *Delineation of Source Water Protection Areas*

Ground Water Systems. For PWSs relying on ground water, the state program submittal needs to indicate that the delineation of source water protection areas will be in accordance with accepted methods under the WHP Program of section 1428 of the SDWA as described in EPA’s publication titled *Guidelines for Delineation of Wellhead Protection Areas*, published in June, 1987. Where a state has an EPA-approved WHP Program, a state may continue with the delineation

approach established by that program. However, whether the state has an approved WHP Program or not, it may adopt the delineation approach employed by another state’s EPA-approved WHP Program for the hydrogeologic settings common to both states. EPA recommends that, in either case, a state consider modifying the WHP Program approach, where necessary, to take advantage of the regulatory flexibility to be offered to states and PWSs in the future under rules such as the Ground Water Disinfection Rule (GWDR). (See Chapter 4.)

There are situations for ground water systems where states need to delineate assessment areas outside of, and in addition to, the typical wellhead protection areas (WHPAs). In cases where a protection area contiguous to the well or wellfield would alone be inadequate to provide for the protection and benefit of the PWS, states need to delineate recharge areas that are not adjacent to or surrounding the well.

Surface Water Systems. For PWSs relying on surface waters, the state program submittal needs to adopt a policy that sets the delineation of the source water protection area to include the entire watershed area upstream of the PWS’s intake structure (see Figure 1), up to the boundary of the state borders. In other words, the delineation of the source water

protection area for these public water supplies would be the topographic boundary, up to the state's border, that is the perimeter of the catchment basin that provides water to the intake structure. EPA recommends that states use the United States Geological Survey (USGS) hydrologic unit codes (HUC) to the extent appropriate. Where water is diverted into this area from another watershed(s), the watershed area(s) upstream of each diversion structure would also need to be delineated in a similar manner. EPA strongly encourages states to include in the delineated area those parts of a watershed that are outside its boundaries and will assist the states with any of this work if requested.

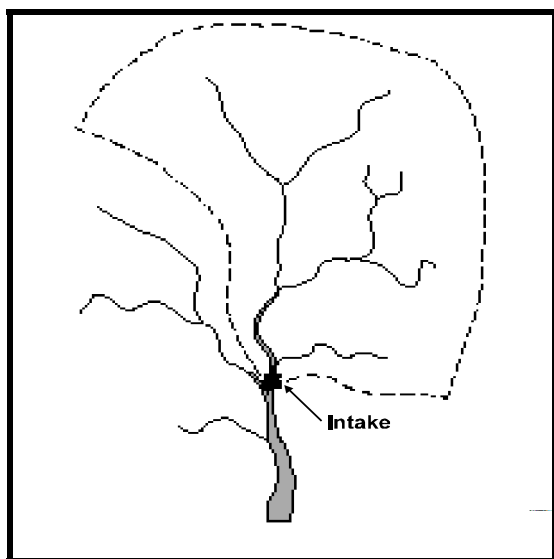


Figure 2 A Watershed Area

As described below, for the purposes of undertaking an inventory of significant

potential contamination sources and determining susceptibility of the public water supply, the state can choose to segment the delineated watershed area(s) (see Figure 2) into units (e.g., stream segments, buffer zones, sub-watershed areas) for more cost-effective analysis. EPA strongly recommends that states work with upstream neighboring states or nations to gain assessment information on watershed areas that would normally be part of a source water protection area for a PWS except for its location outside of the state's borders. EPA also recommends that states coordinate assessments so they are consistent within a watershed area that crosses borders. (See section II.B.4 of this chapter.)

Ground Water/Surface Water Interface.

EPA recommends that states consider the impacts of ground water on surface water when delineating source water protection areas for PWSs based mostly on surface water. The source water protection areas may include surface water contribution areas and zones of ground water contribution to public surface water supplies. The consideration of surface water contribution areas and zones of ground water contribution during the delineation process is termed "conjunctive delineation." (See Appendix D for further discussion.)

EPA also recommends that States consider the impacts of surface water on public water wells when delineating certain PWSs based mostly on ground water but in the vicinity of a body of surface water. These source water protection areas may include surface water contribution areas in addition to the zones of ground water contribution to the PWS. This is important because the pumping of wells in the vicinity of surface water may induce infiltration of the surface water into the ground water and subsequently into the pumping well. (See Appendix D for further discussion.)

(b) *Source Inventories within Delineated Source Water Protection Areas*

The state program submittal needs to indicate what “contaminants of concern” its SWAP will address and what “significant potential sources” of these contaminants the program will inventory in assessment efforts.

Contaminants of Concern. The contaminants of concern must include those raw water contaminants regulated under the SDWA (contaminants with a maximum contaminant level (MCL), contaminants regulated under the SWTR, and the microorganism *Cryptosporidium*.) This includes *Cryptosporidium* because EPA is in the process of regulating this microorganism. EPA published a

proposed Enhanced Surface Water Treatment Rule, which included adding *Cryptosporidium* as a regulated contaminant, on July 29, 1994 (54 Fed. Reg. 38832), and is required to promulgate the final rule by November 1998, pursuant to SDWA section 1412(b)(2)(C). EPA agrees with the recommendation the Agency received through a Federal Advisory Committee Act process that the final rule should contain a removal requirement for *Cryptosporidium*. Therefore, by the deadline for state SWAP submittals, *Cryptosporidium* will be a regulated contaminant.

In addition, states may include those contaminants that are not federally-regulated under SDWA but which the state has determined may present a threat to public health. In particular, in light of the expectation that other microbiological contaminants (e.g., pathogenic viruses and bacteria) will be addressed under the GWDR, EPA recommends that states inventory the sources of these microorganisms in the context of their assessment approach.

Significant Potential Sources. A state program submittal also needs to indicate what types of potential sources of the contaminants of concern will be considered “significant” and, therefore, inventoried in the assessments. The inventory needs to include a clear description of the sources of

contamination (or categories of sources) by location either specific or by area (this could be locational coordinates to assist in mapping). As a starting point, Appendix E lists the types of potential contamination sources for both ground and surface waters. Potential sources include Superfund sites, TRI sites, National Pollutant Discharge Elimination System (NPDES) permittees, underground storage tanks (USTs), RCRA sites, and others included in public databases, as well as anticipated future sources and NPSs.

To gain Agency approval, a state needs to choose and describe in its submittal one or both of the following two approaches for determining which types of potential sources of contamination are significant:

- Define a significant potential source of contamination as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants of concern and has a sufficient likelihood of releasing such contaminants to the environment at levels that could contribute significantly to the concentration of these contaminants in the source waters of the public water supply(s); or
- Describe how an initial susceptibility determination for the

PWS(s) will result in identifying the types of significant potential sources that will be inventoried.

The first approach relies on the inherent characteristics of the potential contamination sources (i.e., the amounts produced, stored or used, the likelihood of release including existence of mitigation efforts, etc.). All sources of contamination in the source water protection area that meet the thresholds for these factors are identified as significant potential sources once the presence of these significant potential sources in the source water protection area is identified. The state makes a determination as to the susceptibility of the water system(s) to these sources. This stepwise approach could be rather burdensome, except for small source water protection areas (i.e., WHPAs). For these, this approach may, in some cases, actually provide an “automatic” susceptibility determination, for the exact location of the significant potential contamination sources within small WHPAs would be irrelevant, assuming there is constant hydrogeology, (i.e., given the small size of the source water protection area, the PWS would be susceptible to any significant source located in the area).

The second approach utilizes existing information and initial determinations of the susceptibility of a PWS(s) to identify

what potential sources would be significant if located in the source water protection area. This approach is likely to be more useful for assessments for PWSs in large source water protection areas. In particular, EPA recommends that a state segment large surface water source water protection areas into smaller areas and determine what types of potential sources would be significant, given the susceptibility of PWSs for each such segmented area. (See Figure 2.) For segments close to the intake structure, most types of contamination sources may be found to be significant. Whereas for remote segments, most, and in some cases perhaps all, types of potential sources may be determined insignificant. This approach allows the state to focus the actual source inventory effort on those types of contamination sources that are considered to be significant in each segment.

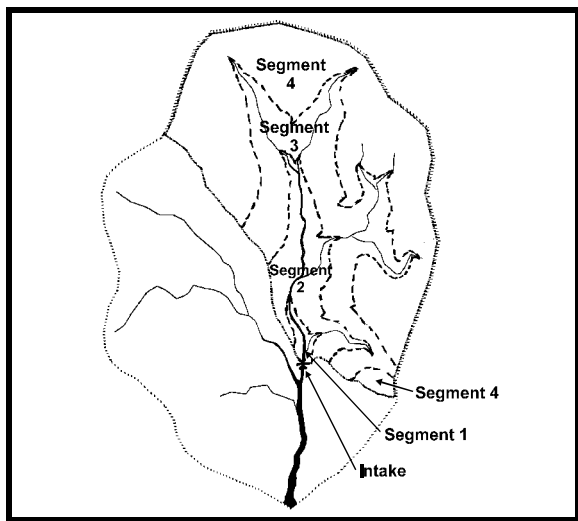


Figure 3 Watershed Area—Segmented for Assessments

The approach EPA recommends assumes broad initial inventories, with a narrowing and iterative focus based on protection goals and better information. As the analysis for any source water protection area becomes more detailed, a state may want the inventory to be very specific so that protection actions can focus on specific facilities or areas within a source water protection area. Thus, if a state determines it will enhance SWP actions yet not discourage voluntary implementation of protection measures, a state may:

- For point sources: identify the names and addresses of these sources of contamination.
- For NPSs: identify the geographic area where the NPSs are located.

Compliance with federal, state, or local statutes by a facility or activity that is a potential source of contamination does not necessarily mean that a PWS is not susceptible to that source. Existing controls and management measures that are determined by states to be effective may be an appropriate screen for susceptibility for some potential sources.

EPA recognizes that completion of these inventories can be resource intensive. The Agency recommends that states set up community volunteer programs under state or other appropriate quality supervision,

which can adopt lower-cost methods to locate potential sources of contamination (e.g., using hand-held global positioning units). EPA recommends credible groups within each source water protection area do some of the work for the inventories, such as the elderly through RSVP programs or younger people such as the Boy Scouts or Girl Scouts or 4H Club members.

(c) *Determination of Public Water Supply(s) Susceptibility*

The state program submittal needs to describe the state’s definition of a “susceptibility determination” and how it will be achieved through the SWAP effort. A state may define “susceptibility determination” as the potential for a PWS(s) to draw water contaminated by inventoried sources at concentrations that would pose concern. Such a determination, therefore, would likely take into account hydrologic and hydrogeologic factors, inherent characteristics of the contaminants (e.g., toxicity, environmental fate and transport); and characteristics of the potential source of the contaminant (location, likelihood of release, effectiveness of mitigation measures). States should note that in small source water protection areas, where differences in distances between sources and the intake are small, and hydrologic and hydrogeologic factors are relatively constant, susceptibility of a water supply is

related to the likelihood of a significant release and to the inherent characteristics of the source (e.g., toxicity, fate and transport, etc.). (Appendix F provides more detail on possible factors to be considered.)

The state submittal also needs to describe how the results of the susceptibility analysis will either be: an absolute measure of the potential for contamination of the public water supply; a relative comparison between sources within the source water protection area; a relative comparison to findings by other assessments; or some other result that would provide for the protection and benefit of the PWSs.

A susceptibility determination does not necessarily require modeling or monitoring in the source waters to determine which potential sources of contamination are significant. Nonetheless, EPA encourages states to undertake such modeling and monitoring, taking advantage of other resources for these activities than those available through the DWSRF, where necessary to provide a basis for good source management measures.

By including the language in section 1453(a)(2)(B) “to determine the susceptibility of the public water systems in the delineated area,” to the identified contaminants, Congress decided that an analysis of a PWS’s susceptibility to

potential sources of contamination will be the means for a state to make the inventory useful for decisions regarding source water protection programs and other possible uses. The legislative history further indicates that a SWAP is intended to include an analysis of potential threats to PWSs from the inventoried sources. In describing the link between the information in the assessments and source water protection programs, the House Committee on Commerce report described such programs as *“designed to protect source water from threats identified during the assessment”* (emphasis added). Simply identifying the numerous significant potential sources of contamination does not in itself determine which of them may or may not present threats to drinking water, or, which are priorities to manage in order to protect drinking water. A scientific analysis of the hydrogeology and/or hydrology, an understanding of the contaminants, and an analysis of the effectiveness of existing prevention and mitigation measures are essential so states can credibly apply the assessment results to SWP and monitoring and other regulatory flexibility, as Congress intended. An analysis of the risks from these sources, described as a determination of “susceptibility” in section 1453 (a)(2)(B), is therefore a required part of each SWAP, and thereby for each assessment in a source water protection area. The level of detail, however, from

any assessment, will depend upon the state’s SWAP program approach.

Table 3	
Delineation, Source Inventory, and Susceptibility: Key Questions for the Advisory Committee(s)	
1.	What delineation method and criteria will be used for systems using ground waters? Where shall recharge areas not be included and why?
2.	What contaminants that are not currently regulated by EPA should be part of the state’s SWAP program?
3.	Should the state segment source water protection areas for more focused source inventories? What should be the basis for such segmentation?
4.	How should the state define and identify significant potential contamination sources and how should the state undertake their inventory within source water protection areas?
5.	How will the results of the susceptibility analysis be characterized?

4. Adequate Assessment(s) for Waters Which Cross State or Country Borders, Boundary Rivers, Multi-State Rivers and the Great Lakes and EPA’s Role in Assisting States Accomplish These Assessments

(a) Role of the State

Unless a state can demonstrate that an alternative meets the same functional objectives, a state SWAP submittal needs to contain the following:

- A description of how the state will delineate source water protection areas, conduct an inventory of contamination sources, and conduct a susceptibility determination for that portion of a boundary river, the Great Lakes, or multi-state river that is within its borders (using the segmented approach in section II.B.3.a).
- A description of how the state will make the maximum practical effort to coordinate with other states, tribes, or nations to do assessments, particularly for categories of significant potential sources of contamination in upstream states.

While not an assessment technique, and therefore optional, states may describe in their submittal the contingency planning policy they have for these water bodies in case of spills or other emergencies.

States may want to describe any multi-state agreements or organizations in which they participate or which may be established to create protection and contingency plans. States should encourage consortiums across state lines of water suppliers, dischargers, and other affected parties to develop contingency plans and communication networks in the case of spills and other emergencies. For example, Pennsylvania, Ohio, Kentucky, and West

Virginia could describe how they cooperate with each other through the Ohio River Valley Water and Sanitation Commission (ORSANCO).

States should also consult closely with local stakeholders across state borders (particularly water suppliers, watershed associations, ground water protection teams, and governments) to get their perspective on the scope, focus, and level of effort that would be necessary to achieve the best assessments.

(b) Role of EPA

EPA, working through the Regions, will strongly encourage cooperation among states to accomplish compatible and complementary source water assessments in a watershed that includes several states or countries. Many states already participate in multi-state organizations for protecting rivers or lakes that cross state boundaries. While these efforts are voluntary on the part of the states, when requested by the states, EPA will facilitate discussions and provide regional assistance.

Table 4	
Boundary Waters, Multi-State Rivers, and the Great Lakes: Key Issues for Advisory Committee(s)	
1.	What agreement should the state maintain or initiate with other states, tribes, or nations to gain more complete and consistent source water assessments?
2.	What contingency plans should be pursued?
3.	What coordination/facilitation activities should the state request of EPA?
4.	Are compatible and complimentary assessments being done in watersheds shared with other states and countries?

C. Requirements/Options for Making Assessments Available to the Public

The statute at section 1453(a)(7) requires that states “make the results of the source water assessments conducted under this subsection available to the public.”

The following describes what EPA believes this statute requires and what a state needs to include in its program submittal to meet the intent and requirements of section 1453 and thereby gain Agency approval. A state may put forth an alternative to what EPA believes these efforts require, provided the state demonstrates the alternative meets the same functional objectives.

1. Content of Understandable Assessments— Mapping Assessment Information, Listings of Sources and Narrative Assessment Reports Made Available to the Public

The results of the assessment reflect the state's analysis of the susceptibility of the PWS(s) in a source water protection area to the inventoried sources of contamination. For a program to be approvable, a state needs to make these results available in an understandable manner and in an expeditious way after they are complete. In addition, as a matter of proper accountability for the results of a process reached using DWSRF funds, a state needs to make available all information collected during each assessment, when requested. Further, a state needs to create maps as part of the results, and those maps need to include the delineated area and the sources of contamination described in the inventory.

The susceptibility determinations most usable by the public could be in a narrative form, but may be presented on a map if the results of the analysis would be more understandable in that format. Furthermore, EPA recommends that maps be created through a Geographic Information System (GIS), but topographic formats may also be used.

EPA recommends that states determine the appropriate scale of such maps, and therefore, the locational detail. For example, a map may need to identify individual USTs to help target resources for pulling tanks or taking other prevention actions. The scale needs to be as detailed as necessary to make the assessment provide for the protection and benefit of the public water supplies.

USGS can supply GIS coverages of waters within and across state boundaries and EPA can supply coverages of Reach File 3, that show the location and “address” of surface waters in the country to a 1:100,000 scale. (Reach File 3 is described in chapter 5.)

2. *Procedures for Making Assessments Available to the Public*

For an approvable SWAP submittal, a state must describe how it will ensure that the results of the assessments are made available to the public, either directly or through a delegated entity, in an expeditious manner after the results are done. A state’s description may include approaches from below, but must include some reasonable and effective array of means to ensure results will be made widely available.

The public is defined as all consumers in a source water protection area as well as all other members of the public, including federal, state and local government agencies. To the extent that a watershed area or recharge area crosses state boundaries, EPA recommends that the contiguous (or other) states make the maximum practicable effort to provide consistent information to all members of the public in such a source water protection area.

To demonstrate that it has met the requirements for making the results of each assessment available, EPA recommends that a state:

- Create a brief report, understandable to the public, in an expeditious manner after the assessment is finished.
- Make the report widely available via the internet and other means.
- Provide widespread notification of availability (such as through bill stuffers) describing in detail how the public can obtain a hard copy (using state rules for charging for copies).
- Permit the public to request a copy through postage free return mail

cards, a free call-in number, and internet posting.

EPA encourages states to make the assessments widely available by linking the results to the Agency's "Surf Your Watershed" internet effort, the Index of Watershed Indicators (IWI), state 305(b) waterbody delineation and assessment efforts, and with the Reach File 3 System. (See further description in Chapter 5.) Of key importance for such data integration is the accurate identification of locational coordinates for public water supply wells and intakes, and inventoried significant potential sources of contamination. Other options include:

- Send copies of the assessment or a summary to the public through access to either a telephone or on-line computer system. States could use existing or new information lines or information phone numbers of community water supplies.
- Send a notice or results of each assessment to each customer in his or her water bill advising consumers annually (or in some other timeframe) about how to attain a copy or view completed assessments. Such a procedure would advise all customers that the

report exists and how it can be obtained.

The notice could be sent to each customer as part of a utility's consumer confidence report. These reports are required annually and may be the most efficient method to send either the assessment or the results of the assessment, or announce the availability of the assessment. This often could extend beyond, but will, at a minimum, have to comply with the regulations that will be published under section 1414 (c)(4) of the SDWA (as amended in 1996).

- Establish an active outreach process to make sure each household in the delineated area knows about the assessment report's availability and how to access it easily. This effort could include a PWS newsletter, or flyer to each household. The local communities affected could advertise the availability of the assessment in a local newspaper. Communities encompassing PWSs could advertize its availability on radio or on local cable televisions as well as on local government internet home pages.

- Develop a statewide database of assessments and have them accessible through a homepage with possible links to other ground water and watershed databases. Such a database could become part of EPA’s IWI through the “Surf Your Watershed” internet system. EPA will provide technical assistance if a state wishes to use “Surf Your Watershed” and thereby avoid creating its own internet program.
- Briefly summarize the assessments from a statewide perspective and note the availability of the assessments in the state CWA section 305 (b) reports. These reports are available to the public, and the availability of the assessments and how to obtain them could be easily described in one of the sections of the state report.

Table 5 Making the Results of Assessments Available to the Public: Key Issues for Advisory Committee(s)	
1.	What should be included in the results of the assessments, what should be the format of an understandable report on results, and when should the results be made available?
2.	How and when should the state make available all the information collected during each assessment when someone requests it?
3.	What type of maps should be developed to display the results of the assessments?
4.	How and when should the state make public all information collected during each assessment for a PWS(s)?
5.	How should the state or delegated entities provide wide notification of the availability of the results and other information collected?

D. Requirements/Options for State Program Implementation

Section 1453 requires EPA to approve or disapprove a state SWAP submittal. Therefore, EPA needs to assess not only the policies and approach proposed by the state but also the likelihood that such an approach will be successfully carried out (i.e., whether the proposed program is feasible and viable). The following describes what states will need to include in their program submittal regarding implementation to meet the goals and explicit requirements of section 1453. A state can put forth a different determination as to what is required to gain EPA approval, but the state needs to

demonstrate that the alternative meets the same functional objectives.

1. Timetables

In an approvable submittal, a state needs to propose a timetable for implementing and completing assessments within the state. A “completed state SWAP” and a “complete local assessment” are defined in section II.B.2.a.

The proposed timetable in the submittal must be no more than 2 years after EPA approves a state program. However, the statute at 1453(b) allows EPA to grant a state’s request for an extension of the time available for completion of assessments up to 18 months after the original 2-year period. Thus, statewide completion of the assessments could be a maximum of 3 ½ years from initial EPA approval of a state's program. States that are continuing to implement WHP Programs and have been accomplishing assessment-type work in local watershed efforts, will, in effect, be implementing assessments over a 6 3/4 year period from the date of enactment which was August 6, 1996.

To be approvable, requests for an extension to complete a state SWAP must be made based on:

- Consideration of the availability to the state of funds under the DWSRF under section 1452 of the Act. That is, based on its approved program, a state must show that additional time is needed to complete the assessments based on an analysis of how much DWSRF funding it is spending to do the assessments. For this reason, EPA encourages states to determine how much it would cost to complete the assessments for their source water protection areas, and then take up to the full 10 percent allowed from the FY 1997 allotment. States can apply for these funds in FY 1997 or FY 1998.
- Consideration of other relevant factors, for example, statewide or sub-state emergencies such as natural disasters.

For the initial program submittal, a state can provide a rationale for the eventual extension of the timeframe and base its submitted timeframes and priorities on the extended deadline. If a state requests an extension as part of its initial submittal, EPA will make a determination of the timeframe extension as part of the approval of the state's program.

2. *Resources to be Committed to the Effort*

To be approvable, a state needs to explain how it will complete assessments as described in its SWAP using resources the state proposes to allocate.

(a) *Funding from Drinking Water State Revolving Fund*

For complete discussion of the Agency's DWSRF policies, the reader may refer to EPA's *Drinking Water State Revolving Fund Program Guidelines* released on February 28, 1997, which is available by calling the Drinking Water Hotline (1-800-426-4791).

A state may set aside up to 10 percent of its allotment under section 1452 for assessments for PWSs in accordance with section 1453 of the 1996 SDWA amendments. Unlike other SWP activities eligible for DWSRF assistance, funds for delineations and assessments under section 1453 programs are only available from the FY 1997 capitalization grant. For this reason, EPA encourages states to determine how much it would cost to do complete assessments for their source water protection areas, and then take the amount necessary up to the full 10 percent allowed from the FY 1997 allotment. States can apply for these funds in FY 1997 or FY 1998. Funds set-aside for this

purpose must be obligated within four fiscal years after a state receives its grant. Part IV of this chapter provides more discussion of the DWSRF policies for SWAP.

(b) *Other Financing Options*

Aside from the DWSRF, other potential sources of financial support for source water assessments exist. A limited portion of the section 319 grants and of the CWSRF may potentially provide support to states for assessment and protection of source waters from NPSs of pollution. The most recent section 319 grants and program guidance specifies that 319 grants can be used to support SWP activities, including assessments. States will continue to be eligible to use CWA section 106 funds for WHP activities, which may include source water assessments.

3. *Delegations of Efforts*

If a state will delegate some of the aspects of assessments, the submittal needs to include a description of how, to whom, and what aspects of assessments the state will delegate, and a formal definition of delegation used in regulations, guidance, in another formal state policy, or created for this program. The state submittal also needs to include a description of the financial capacity of the entity or entities who will be performing delegated aspects

of the assessments to undertake such aspects successfully. States and delegated entities may involve any other appropriate groups allowable under state law to do the assessments. EPA recommends that if local entities will, in fact, conduct some aspects of assessments, that appropriate stakeholders participate in the assessments. States have discretion to decide if funding under section 1452(k)(1)(C) will accompany state delegation. However, EPA encourages states to do so because providing funding where necessary for delegated assessment activities can ensure effective completion of the state's approved SWAP. EPA believes that Congress expected the assessment set-aside funds would be sufficient for assessment functions.

4. Role and Coordination of State Agencies and with Other Federal/State/Tribal Programs

In order for EPA to evaluate whether a state will be able to meet the timetable for completing assessments set forth in a SWAP submittal, a state needs to explain in the submittal how it will coordinate with:

- State environmental programs;
- Tribes;
- Local stakeholders;
- Other states (as described in section II.B.4);

- Federal agencies.

State drinking water programs do not have the resources nor the databases necessarily to adequately accomplish the assessments alone. The assessments will have to be a team effort at the state level assisted by local stakeholders and federal agencies. EPA recommends that states briefly describe coordination in their submittals to ensure this coordination will take place.

5. Reporting of Program Progress

For EPA to know whether a state will be meeting the goals of section 1453 and accomplishing the state's program objectives and approach, a state submittal needs to describe how it will periodically report to EPA on progress of the effort. (See Final DWSRF guidelines for reporting requirements. Essentially, states are required to describe how funds have been expended, using the set-aside funds for assessments in the required biennial reports.)

For EPA to determine whether a state using funds under section 1452(k)(1)(C) is moving towards completion of its SWAP program, these states need to report to EPA:

- The total number of PWSs, categorized as ground water, surface water, or combined (this should be consistent with Safe Drinking Water Information System (SDWIS) reporting).
- The number PWSs by category with “completed” delineations, source inventories, and susceptibility determinations.
- The population served by the PWSs in source water protection areas.
- How completed local assessments have been made available to the public.

States can use current reports or a separate report to EPA as the mechanism for providing information on SWAPs. For example, states can use their WHP Program biennial reports to report on completed programs for ground water, surface water, and combined systems.

6. *Updating the Assessments*

Some of the key benefits possibly available to PWSs with adequate assessments will be regulatory flexibility under existing as well as future rules such as the CMR, alternative monitoring, and GWDR. For EPA to understand how the state program will continue to provide benefit to PWSs,

EPA recommends the state present as part of its submittal a plan to update the assessments, particularly if the state decides not to modify the scope of its previous ground water delineation approach in anticipation of its systems’ needs under forthcoming rules providing for flexibility. (See section II.B.3.(a) of this chapter.) This could include a brief description of the process it plans to use to update the assessments to incorporate the newly regulated contaminants and rules expected to be promulgated by EPA (described in Chapter 4) during the time period when the state is completing the assessments under its approved SWAP program. These rules include:

- Ground Water Disinfection Rule
- Chemical Monitoring Reform Rule and Alternative Monitoring Rule
- Underground Injection Class V Rule
- Enhanced Surface Water Treatment Rule

EPA notes that states will need to have periodically updated assessment-type information in order to make adequately informed decisions in the future on such matters as monitoring flexibility. EPA further recommends that states update assessments to include new active and

current PWSs, and new wells/intakes identified by the state in its reporting to EPA under the previous regulations. Also states should update the assessments for other purposes such as new changes in land use that could, if not identified, hinder protection of PWSs.

III. PROGRAM SUBMITTAL PROCESS

A. Process for Submitting the State Source Water Assessment Program and for Program Implementation

1. Statutory Requirements

The statute at section 1453(a)(3) requires that “a state source water assessment program under this subsection shall be submitted to the Administrator within 18 months after the Administrator’s guidance is issued under this subsection and shall be deemed approved 9 months after the date of such submittal unless the Administrator disapproves the program as provided in section 1428(c). States shall begin implementation of the program immediately after its approval. The Administrator’s approval of a state program under this subsection shall include a timetable, established in consultation with the state, allowing not more than 2 years for completion after approval of the program.”

The statute at section 1453 (a) (4) states that the timetable referred to in paragraph (a)(3) must “take into consideration the availability to the state of funds under section 1452 (relating to state loan funds) for assessments and other relevant factors. The Administrator may extend any

Table 6	
State Program Implementation: Key Issues for Advisory Committee(s)	
1.	What should be the timetable for state SWAP program implementation?
2.	How much should the state spend on SWAP program development and implementation, and should the resources come from the DWSRF and/or other resources?
3.	Should the state delegate aspects of the assessments? If so, to whom? Should funding be provided to delegated entities?
4.	How should state agencies coordinate with each other and with other state, federal, and local stakeholders when implementing SWAPs?
5.	How and what should the state report to EPA regarding SWAP implementation?
6.	When and how should the state update assessments?

timetable included in a state program approved under paragraph (3) to extend the period for completion by an additional 18 months.”

B. Outline of the Process For Submitting and Implementing a Program (See Appendix B)

Based on the statutory requirements at sections 1453 (a)(3) and 1428 (c)(1), there are three separate and distinct phases for establishing state SWAPs:

Requirements for Program Submittal .

States must submit SWAPs to the appropriate EPA Regional Administrator by February 1999. The states must develop programs with public participation, as defined in section II.A.

Approval Process for Submittals. EPA must approve or disapprove a state program within 9-months after submittal. If there is no EPA action in the 9-month period, a state program will be deemed approved. When approving a program, the Regional Administrator must include a timetable, established in consultation with each state, for completion of the program. States must begin implementation immediately upon approval. A state must complete program implementation within 2 years of approval unless an extension is granted. Requirements for extensions are described in section II.D.1.

Disapproval Process for Submittals. If the Regional Administrator determines a program (or portion thereof) is to be disapproved, EPA must send a written statement of the reasons for such disapproval to the Governor of the state.

- Within 6 months of EPA’s written statement to the Governor, the Governor or Governor’s designee must submit a modified program to EPA. These state modifications to the program submittal must be based upon the recommendations of the EPA. If EPA disapproves the program (or portion thereof) in the 9-month period, EPA will negotiate with the state in an expeditious manner to ensure that the state has an opportunity to develop an approvable program.
- EPA must then make a decision on whether to approve or disapprove a state’s re-submittal.

IV. THE DRINKING WATER STATE REVOLVING FUND AND SOURCE WATER ASSESSMENTS

A. The Intended Use Plan: The Key Funding Vehicle

Consistent with EPA’s Guidelines for implementing the DWSRF, the central

component of the capitalization grant application is the IUP. The IUP describes how a state intends to use available DWSRF funds to meet the objectives of the SDWA and further the goal of protecting public health. A state must prepare the IUP, and after providing for public review and comment, submit it to the Regional Administrator as part of its capitalization grant application. The IUP must include specific details on how a state will use all funds in its capitalization grant, including funds it will allocate for the set-asides.

States have the option of developing the IUP in two parts, one part that identifies the distribution and uses of the funds among the various set-asides and the DWSRF, and the other part dealing only with project funding in the DWSRF. A state may submit a capitalization grant application for only the funds it intends to allocate among the set-asides. This option provides states with a great opportunity for expediting the process for receiving those funds. As with all grant applications, the state would have to include a detailed description (workplan) of the assessment activities to be funded under the set-aside.

B. The Importance of Funding Source Water Assessment Programs

EPA will ask states that indicate in their IUP that they do not intend to set aside the full 10 percent for assessments if they have considered their source water assessment needs in the light of the limited time frame for the availability of funds for that purpose. Assessments are particularly important as the foundation of effective SWP programs; without them, further progress in protecting source waters from contamination in an efficient and effective way is very difficult. Assessments are necessary components of WHP Programs and SMPs for pesticides and they will play key roles in providing regulatory flexibility under a number of existing and future federal drinking water protection rules. In addition, the information obtained through assessments will be critical in targeting source water areas for protection by other federal and state programs, including UIC Class V programs, USDA's Farm Bill programs, NPS programs, and watershed protection programs.

C. Work Plans, Financing, and Implementing Assessments Prior to EPA Approval of State Source Water Assessment Programs

States may use the DWSRF 10 percent set-aside funds for assessments prior to receiving EPA approval for a SWAP Program submittal under the following conditions:

- The state must have an EPA-approved WHP Program under section 1428 of the SDWA before using the funds to conduct assessments for systems dependent on ground water; or if the state does not have an approved wellhead program, the delineations and assessments for systems dependent on ground water must be conducted in accordance with any approved state program's delineation policy and process or the EPA's June 1987 guidance, *Guidelines for Delineations of Wellhead Protection Areas*, and the state's approach for assessments must receive interim approval by EPA as part of the Agency's review of the state's DWSRF set-aside work plans; and
- For systems dependent on surface water, the state's approach for assessments must be described, and receive interim approval by EPA, consistent with this guidance, as part of the DWSRF set-aside work plans.

In those states where DWSRF set-aside funds are used for assessments prior to having an approved SWAP program submittal, EPA will review on an annual basis these expenditures, as well as the

approach used by the state to conduct the assessments.

In order for EPA to provide an interim approval of a state's approach for assessments as part of the Agency's review of the state's DWSRF workplan, the workplan must include:

- A description of the state's approach to assessment consistent with the language of Chapter 2, section II.B in this document.
- A description of exactly what aspects of the assessments the set-aside funds will be used for prior to approval of a state's SWAP.
- A timeframe for when the state will submit the SWAP to EPA for approval.

If EPA finds any of these descriptions substantially inconsistent with this guidance, EPA will disapprove the state's approach to assessments and the state will not be permitted to use the set-aside funds until such time as the state makes necessary changes to the workplan to meet EPA's objections or receives approval of its SWAP.

D. DWSRF Funding for Programs Supporting State Source Water Assessment Programs

Congress encouraged the use of other existing programs and efforts that provide information that could be used for source water assessments, as indicated in section 1453(a)(6)(E) of the Amendments: “to avoid duplication and to encourage efficiency, the (Source Water Assessment) program . . . may make use of . . . delineations or assessments of surface or ground water sources under programs or plans pursuant to the Federal Water Pollution Control Act.” This intent is also reflected clearly on page 64 of the Senate Environment and Public Works Committee report (S. Report 104-169) on the 1996 amendments: “states are strongly encouraged to use existing assessment data gathered under other state and federal programs and guidance developed by EPA under other federal laws.”

1. Total Maximum Daily Load Program

One example of an existing program that can provide useful information for source water assessments is the TMDL program under the CWA. A TMDL is designed to show how much pollution needs to be reduced by individual sources in a watershed. A TMDL is a quantitative assessment of water quality problems and

contributing pollutant sources and provides the information needed to specify the amount of a pollutant that needs to be reduced by individual sources so that lakes, rivers, streams, or estuaries meet state water quality standards and designated water uses. A TMDL quantifies the pollution to be controlled from permitted point source discharges as well as NPSs such as storm water runoff. EPA encourages states to use relevant information from existing TMDL programs to help complete source water delineations and assessments.

A question that arises is whether states can use a portion of the DWSRF allocation for source water assessments to develop a TMDL. EPA’s February 1997 *DWSRF Program Guidelines* state that:

“States may use funds from this set-aside (note: the 10 percent set-aside for source water assessments in accordance with section 1453 of the SDWA) for the development of TMDLs in limited circumstances. The state must establish a policy of allowing use of the set-aside funds to develop TMDLs only if a clear cause and effect relationship can demonstrate that development of the TMDL is essential to public health protection and continuing compliance with national primary drinking water regulations. Funding TMDLs through source water set-asides is only eligible if it

will prevent or reduce source water contamination or enhance the efficiency of the drinking water treatment process. In this context, TMDL activity may be weighed against other source water assessment and delineation priority activities. State SWAPs submitted to EPA that propose to include TMDL activity must ensure that the development of TMDLs does not delay the completion of the source water assessments.”

Consistent with these constraints, there are numerous scenarios under which TMDL development would be eligible to be funded under the 10 percent set-aside for Fiscal Year 1997 DWSRF appropriations. To promote the continued integration of public health goals into CWA programs, and to encourage efficiency as envisioned by Congress, EPA encourages states to use up to 10 percent of the 10 percent set-aside to develop TMDLs for source water areas as long as the TMDL assessment satisfies the following criteria: (1) there is a direct linkage between contaminant(s) and/or sources in the TMDL assessment and public health; (2) the contaminant(s) in the TMDL assessment are those that are regulated under the SDWA; (3) the TMDL assessment will assist a PWS(s) achieve or maintain compliance with a National Primary Drinking Water Regulation; and (4) the TMDL performs one or more of the three functions required of a state SWAP

(i.e., delineation, source inventory and/or susceptibility determinations).

In a limited number of cases, states may find that a greater portion than 10 percent of the 10 percent set-aside may be used for TMDL development to improve either the quality and/or efficiency of their SWAPs. States have this discretion, although they must demonstrate clear reasons, consistent with the above criteria, for allocations greater than the 10 percent threshold recommended by this guidance in their bi-annual reports to EPA on the DWSRF program. Again, any funding for TMDLs may be linked to their intended use as platforms for SWP activities directly related to public health protection and compliance with drinking water regulations.

2. Monitoring/Modeling Activities

As described in section II.B.3.(c), a source water assessment should not ordinarily require modeling or monitoring in the source waters to determine which potential sources of contamination are significant or the susceptibility of the public water supply. Given the expense of modeling and monitoring, EPA believes that, in most cases, it would not be cost-effective to pursue such activities under a SWAP, since it must complete some level of assessment for all public water supplies. Rather, a state should derive as much information as

possible from existing monitoring and modeling efforts or results to support its assessment. Once completed, an assessment can, among other functions, assist the state in determining where additional monitoring and modeling activities are needed and pursue these efforts under appropriate federal and state programs. Therefore EPA discourages the use of the funds from the SWAP set-aside of the DWSRF for these activities unless the state can show that it provides a cost-effective means that are necessary for achieving the program's objective of completing assessments for all PWSs within the required timeframe.