

DRAFT SUMMARY CHART PAGE ONE
Source Water Contamination Prevention Key National Information Needs

Are Source Water Contamination Prevention Measures Making a Difference to Public Health?		
1. Change in susceptibility of PWS as determined by State/Tribe, relative to protection plans implemented.	2. Changes in identified potential contaminant source threats found in source water protection areas.	3. Trends in ambient source water quality (Ground Water and Surface Water)
<i>Issues in consistency and how to nationally characterize changes in susceptibility when there is state variability in determining susceptibility, and likelihood of states updating.</i>	<i>Issues of accessibility from state SWAPs and likelihood of the states updating inventory information and issues of coord. W/CWA programs.</i>	<i>Issues of cost and priority of drinking water relative to other WQ problems and CWA program priorities.</i>
<i>Baseline elements needed:</i>	<i>Baseline elements needed:</i>	<i>Baseline elements needed:</i>
1.1 # of PWSs and the population served by level of susceptibility as determined by state or tribal assessments Options: A. State Def. Of susceptibility, with no standards on reporting. B. National Agreement that builds on state’s existing susceptibility approach but allows national characterization. C. National def. Of H/M/L and susceptibility that states use to translate their SWAP results. D. Combine national data layers to determine suscept (no reporting burden).	2.1 Most prevalent potential contaminant sources or types of contaminants found in SWPAs of most concern to state or tribe. Options: A. States incorporate most prevalent contaminant sources found in SWPAS into their 305(b) data B. States report # of areas where potential sources have been found by contaminant type (VOCs, IOCs, microorganisms, pesticides) C. States report # of SWPAS with contaminant sources found within them.	3.1 # and location of 303 (d) listed source waters
1.2 # of public water supplies with state or tribe recognized source water contamination prevention plan (or taking protective actions). This includes WHP, watershed plans or watershed restoration action strategies that address threats to the drinking water source.		3.2 # and location of 305(b) threatened source waters
<i>“Protection indicators” that are outside of the “State SWAP”:</i> 1.3 SSA: # of designated sole source aquifers, projects reviewed by EPA, and ancillary protective actions taken by communities (indicates if SSAs are potential catalysts)		3.3 # of source waters (PWS) with CWA Water Quality Standards (WQS) in place, including ambient water quality criteria for regulated drinking water contaminants.
1.4 SRF # States with requirements for water conservation plans linked to DWSRF loans (indicates if states are creating incentives for planning.).		3.4 # and location of source water related MCL violations.
1.5 CWA: # Watershed Restoration Action Strategies (WRAS) addressing SWP		

DRAFT SUMMARY CHART PAGE TWO
Source Water Contamination Prevention Key National Information Needs

What Information will help EPA develop and promote cross-program source water policies?		
4. National Locational Data Layer of the source water protection areas	5. # of State and Tribal Source Water Assessments completed (delineations, inventories, susceptibility, made available to public)	6. Trends in Source Water Protection cost needs met
<i>Issues in consistency and accuracy on how to pull together different datasets</i>	<i>No anticipated issues</i>	<i>Issues of cost and priority of drinking water relative to other WQ problems</i>
<p>Driver of SWP policy adoption by EPA and other federal programs.</p> <p>Associated accountability baseline element for EPA: # of federal programs using state source water data in their programs</p>	<p>Driver : Public Accountability for SDWA Amendments and DWSRF funds spent.</p>	<p>Driver of EPA and Congressional Discussions of budgets.</p> <p>Potential pieces: SRF: # of states allocating Sec. 1452 DWSRF source water protection set-asides</p>
		<p>State: Total \$ needed as calculated by the State, to implement State certified local SWP plans to lower susceptibility</p>
		<p>State/Fed: \$ targeted to SWP prevention efforts, by state (Fed, State, Local, Private \$) -- either as a total number, or as a % of total state environmental budget.</p>
		<p>CWA: # or % of total projects funded with CWA allocated dollars directed to solve a source water threat (subset of the total cost question in the source water section above)</p>

DRAFT DISCUSSION PAPER OF SOURCE WATER PROTECTION NATIONAL INFORMATION NEEDS

Preface: Ground Rules to Reading this Document

Do not assume that this is a state reporting list. In some cases, the information may already be collected in another federal program or within EPA. *The intention of this discussion is to determine how best to judge if the approach of making high quality source water assessments available to the public, coupled with outreach and technical assistance, leads to higher public awareness, and in turn, a higher rate of local, state and federal preventative actions to lower risks of contamination of public water supplies.* This is a first cut, with some initial feedback from some states. If what is laid out here does not seem the most viable, please think about what is possible given how your state currently runs its water quality, wellhead protection, and drinking water programs.

Do not assume short term. Trends can not be measured right away. Nothing written here is intended to be the mirror image of what EPA asks states to report from their programs in the short term, particularly given that assessments are not completed for the majority of source waters.

Are the source water contamination prevention efforts making a difference for public health?

Potentially, there are three measures that in combination could answer this question:

- S Trends in susceptibility of public water supplies relative to protection actions taken;
- S Trends in the nature of potential contaminant threats of high concern in source water areas; and
- S Trends in ambient source water quality over time.

Together, these could give a sense of how source water protection is lowering the risks to public health based on the assumption that by lowering the susceptibility of a water supply to contamination and reducing the number of threatening contaminant sources, one is reducing the risk to public health.

What are Source Water Protection Policy Drivers?

At the same time, there is information that strengthens EPA's ability to report to congress on progress of the SDWA 1453, make decisions about future policy, and act as a catalyst for the public and other programs to support source water protection. These are:

- S Collecting information on the number of state source assessments completed: delineations, inventories, and susceptibility determinations made available to the public
- S Creating a national locational data layer of the state-defined source water protection areas

- S Providing a reliable national picture of resources spent on source water across the country and resources needed.

National, State and Tribal value of National Measures

Strong Public Message

The assumption is that if you decrease the risk of contamination of the source, you decrease the risk of human health threats. The source water assessments provide the baseline of this explanation: the source water assessments will identify the highest priority risks for each water supply. But this alone does not protect the public, or lower the potential threat to public health. Raised local awareness and subsequent preventative actions targeted at identified problems are critical. It is a strong message to the public, if states and EPA can show the public that local, state and federal actions taken to prevent contamination of source water are actually lowering the risk of water supplies being contaminated, or has resulted in better water quality.

Also, if we can show the actual source water areas across the country, we can better promote national awareness of the value of these areas and the need to manage these sources wisely.

Accountability to Congress

Congress wants to know not only that source water assessments are being completed, but that these assessments are valuable and meaningful, and leading to protective activities. The source water assessments are intended to inform decisions about what actions to take to prevent contamination of the sources. If we can show that preventative actions are leading to lowering risks, this indicates that the approach of providing funds and guidance to states leads to effective action.

National programs and Congress also need reliable evaluations of resource needs as they make decisions over funding priorities.

Incorporation of source water into SDWA regulatory framework

If this is going to happen, we need to demonstrate that protection leads to lower risk. If we can develop a reliable approach that is nationally consistent to identify when actions are effective at lowering the risks to source water, then it bolsters the capacity to use source water protection considerations in future SDWA rules or revisions.

Promoting the integration of source water protection policies into other national programs

If EPA is to develop national policies within EPA and with other federal agencies that are supportive of source water protection, then there needs to be national information readily available that EPA and other federal programs can use to justify changes in policy, rules and regulations to support source water protection. A national locational data set of source water protection areas would be one of the most valuable and least burdensome ways of promoting source water protection with other agencies

Locational data on the source water areas will be invaluable to supporting inclusion of source water provisions in more pollution prevention guidance, regulation and rules of other federal programs. For instance, in the past we have been unable to justify inclusion of source water protection in other national rules because we lacked the information on the national aggregate land mass of source water protection areas. In the future, if we had this data layer compiled and accessible, we would be better able to evaluate the degree of impacts. In the past we have been unable to show the national extent of federal land's and facilities relationship to source water areas. With a national data layer, it helps other programs decide if it is a national priority to set policies for source water or whether it is regionalized.

Establishing a Baseline and National Consistency While Minimizing Burden on states

Showing a trend requires a baseline, using data already collected or scheduled to be collected in the near term. Also, if the measure is to be valuable for both promoting a meaningful public message on the state of the nation's source waters and accountability to congress, it needs to have a level of consistency across the country. National consistency is important if this information is going to be used as part of future regulatory flexibility decision making, reporting to congress, and delivering a meaningful public message. While states have agreed that it is important to have a coherent national message, they have asked that the burden to collect this information be minimal. The value to states to collect this information should be equal if not greater than the national reasons, unless the value is so great nationally and the burden is close to none for the state. Ideally there would be little additional burden on the states because they would see the value of gathering this information at the state level.

The Devil is in the Details: For each of the three proposed trends, as well as the additional three data sets to support national SWP policy development, the difficulty is in the details. Using the measuring sticks of *national and state value, readily available or accessible information, national consistency, and minimizing burden* the following analysis goes through each to examine the options for what is needed to collect data that will may show these trends. Each option varies in how it holds up each of these measuring sticks.

The intent is to work through these options with states and regions to decide on the most useful combination. The decision will come from balancing national consistency and value, and state burdens and value.

Examination of Number One: *Trends in susceptibility of public water supplies relative to protection actions taken*

Part of the baseline for this trend could be the information collected through the state and tribal source water assessments due for completion by 2003. This data is being collected by states and tribes. The first baseline piece of information is on susceptibility. The second is on protection plans that are currently in place for water supplies across the state.

S # of PWS and the population served by level of susceptibility as determined by state and tribal source water assessments.

State Value: For this to be maximally valuable within a state, they need to be collecting this information so that they can identify throughout the state the location of the most susceptible water supplies. This is valuable because it helps to direct other programs within the state to target preventative activities within the highly susceptible areas. This information could be correlated with information on where preventative actions are being implemented to protect the source water, to see if protection planning is leading to risk reductions.

National Value: Collecting information on susceptibility and pointing to where the states are identifying highly susceptible source waters, helps us to direct other federal programs, congress and the public to areas of concern for the states.

Current Availability: State source water assessments all include a susceptibility determination for each PWS.

Consistency: Not all states give each system an over all H/M/L. Harder to nationally explain susceptibility with out overall rankings.

Burden: Added burden to convert/translate the susceptibility determinations to high/medium/ low .

Anticipated Issues: State inconsistency on definition or lack of use of h/m/l ratings by states in their current SWAP methodology. (31 states indicate in SWAP approach that they are using some sort of over all ranking H/M/L, other terms, or numeric). Also, SDWA mandated assessments are a one time deal and many states don't plan to be re-assessing or developing ways for a community to lower their susceptibility.

Issue Discussion:

Re-evaluation

States that have a feedback loop for communities to work with them to lower their susceptibility could display their new figures. States that don't have a reevaluation mechanism could show a static trend for their state (i.e., high areas staying high, lows staying low). In this way, there is no *added* burden to re-assess, but rather highlighting those that are taking initiative to work on lowering susceptibility.

Potential Options

- a. *Most flexible, low national consistency, and low national value :* Each state would report susceptibility with no nationally agreed upon standard
- b. *medium flexibility, more consistency, higher national value:* Work with states to

develop national guidelines for states to use that builds on states' existing susceptibility approach but allows national characterization. For example, a state could report a baseline that there are a given number/location of high concern susceptible areas (with national agreement on what "high concern" means). This could provide the basis for future evaluation of the # of these susceptible waters that a community, the state or some other entity has begun efforts to lower the susceptibility (e.g., developed a plan), and then the # of sources waters for which communities have successfully lowered the risk of contamination.

- c. *Less flexibility, maximum consistency, high workload.* States would adopt a common definition of h/m/l, and would interpret their current susceptibility into the H/M/L. One advantage of having a baseline of the source waters across the state using the relative measure nomenclature of H/M/L is its consistency and ease in translating the results of the state assessments to congress and the public. The cumulative national degree of concern that is being raised about the threats to source water from these assessments is clearer with a standardized understanding of H/M/L.
- d. *No reporting burden to states, maximum national consistency, but least state control of outcome:* Using a combination of national data layers and locations of water supplies to determine where there is h/m/l susceptibility for each PWS across the country (i.e. ignoring state assessment results, and creating a national susceptibility ranking)

1.2 # and location of PWS with a state or tribally recognized source water contamination prevention plan (or actions underway to lower susceptibility) (including wellhead protection, watershed, basin or resource-wide plans that address threats to the drinking water source).

State Value: The value is in collecting the information with associated locational data so that the state can see if a community's protection plans are addressing the concerns raised in the source water assessments and leading to a lower susceptibility ranking. Over time, communities with highly susceptible water supplies would work towards lowering their susceptibility by implementing effective protection measures. For states that have SWP, WHP, or Watershed programs, the value of collecting this information is also for accountability to their state legislatures on program progress.

National value: The national value is reporting to congress and the public on how states, tribes and localities are moving from assessment to protection through the first step of protection planning. Indicator of how well EPA and states are supporting localities in these efforts.

Availability/Accessibility: States have been collecting and reporting information through Wellhead Protection Programs or Watershed Programs, though nationally we were never asking for trends reporting – i.e., if communities with plans in place were lowering their risks through implementation over time – and so states may not currently be collecting the

information in a way that allows for this kind of tracking. (They may not actually store a list of the communities and PWS identification numbers with plans in place). However, if a state has a wellhead protection program certification process, then this could serve as a partial beginning.

Burden: Some states do not have a mechanism in place for collecting information or providing assistance to communities implementing contamination prevention for their source waters. Burden to set up these types of programs or figure out how to gather the data from other programs.

Anticipated issues:

- Inconsistency on what constitutes an adequate state or tribally certified local source water contamination prevention plan.
- State burden to review and certify locally based prevention plans. States are not federally required to develop source water contamination prevention programs to guide local communities beyond wellhead.

Issues Discussion:

- Work with states, tribes and others to develop a national consensus that outlines a minimal expectation of what constitutes a valuable locally based source water contamination prevention plan.

Some additional EPA-based information outside of the state SWAPs and WHP

- 1.3 Sole Source Aquifers:** EPA could start to analyze the impacts of sole source aquifer designations on a community's interest in source water protection, and see if SSA designation leads to lowered susceptibility.

Availability: SSA information on project reviews is available from EPA regions. Collecting the data on related activities taken by communities would require more effort by EPA.

Cost: Added Federal FTE to begin to look at activities taken by communities in SSAs.

Why needed at the state level: An additional tool for use by states and communities.

Why needed at the national level:

- Accountability for progress of SSAs, and statutory mandate of EPA to review projects.
- Start to determine if SSA is a viable catalyst to promote community awareness and involvement in protecting drinking water resources.

- 1.4 Water Conservation Plans/DWSRF loan requirements:** Congress included a provision in the statute that required EPA to provide guidance on how to develop a water conservation plan. States could link loan requirements for PWSS to the development of a water conservation plan: i.e. without a plan, a PWS wouldn't be eligible for a loan. # of states with water conservation planning tied to DWSRF loan requirements.

Availability: Part of DWSRF information collection.

Public Value: Provides a (very small) indicator of if a state is developing incentives to

encourage local source water planning (water conservation planning includes many similar elements to source water protection planning)

1.5 Watershed Restoration Action Strategies that include source water protection.
(Clean Water Act program)

Examination of Number Two: Changes in the nature of potential contaminant threats of high concern in source water areas

Again, the baseline for this piece of information could be the augmentation of the 305(b) reporting with source water assessment contaminant source inventory data. While the Clean Water Act Section 305(b) Report asks states to report on the most prevalent contaminant threats, the source water assessments allow the opportunity to be more thorough in identifying what are the potential contaminant sources being found within source water areas that the state deems are of most concern across their state as a whole (perhaps through the 305(b) reporting). Over time, a change in what are the threats of most concern to states would be an indicator that the original concerns were dealt with (or that new concerns have taken over).

2.1 Most prevalent potential contaminant sources or types of contaminants found in source water areas by state and tribe.

State Value depends on locational data: State source water programs can help direct other state programs to assist with potential contaminant sources relevant to their programs, and direct resources to address the most threatening sources or contaminants in the state.

National value: the cumulative report for each state as to what are the potential contaminant sources being found within source water areas that pose the most concern, helps EPA to prioritize what type of prevention policies to pursue within EPA and with other agencies and programs, and direct other programs to regional concerns. In terms of Congressional reporting, the information will help them make decisions over the need for focus on particular contaminant sources or contaminants for future legislative decisions.

Availability: state source water assessments could enhance state 305(b) reporting where states currently report the highest threat to ground water. Most states will have electronic databases with maps of the sources and identification of those posing the most threat as part of their susceptibility determination.

Cost: depending on option the costs differ.

Anticipated Issues: Potentially burdensome for states to query their information from their data bases for a cumulative look at the inventories in their source water assessments. State variability in the ability to cumulatively analyze their source water inventories. Not all inventories are electronic.

Issues Discussion

Option A. High reporting burden , but most useful to making national decisions on prevalent contaminant source threats: Reporting the results of source water assessments, states would identify the most prevalent potential contaminant source types and contaminants inventoried in source water areas across the state which the state has determined are potential threats to source waters.

Option B. Lower reporting burden, lesser national value, but could support some national decision making. States report the # of source water areas where potential contaminant sources have been found by contaminant type (suggested categories - pesticides, other VOCs, IOCs, microorganisms, and radio nuclides).

Option C. Lowest reporting burden, lower national value: States report the # of source water areas where potential contaminant sources were found in those areas. There is low national value on this, because it doesn't identify any of the types of contaminant sources.

Examination of Number Three:

Change in drinking water contaminants of concern detected in source waters

Why needed at the state level: Helps to indicate the most serious problems in the state and if there are trends over time marking improvement in source water quality.

Why needed at the national level:

1. Indicates whether source water quality is degrading or improving, whether there needs to be national concern, if it is degrading, and decide on remedies.
2. Objective data translates to a high message value.

Availability: some baseline is available through 305(b) monitoring, as well as some drinking water monitoring data (ambient and treated water data). Some states have compiled what information is available in their states on source water quality as part of their assessments.

Accessibility: The 305(b) and 303(d) assessment mechanisms should be a means of accessing this data. Hopefully states are moving towards incorporating drinking water monitoring data gathered by their PWSS into their monitoring reporting. PWSS compliance data is also available. Source water related non-compliance events could provide a another piece of information.

Cost: No extra, if use the status quo. More, if there is need to start monitoring programs for source waters (and in particular ground water).

Anticipated Issues:

- State drinking water/source water programs do not have adequate ambient water quality monitoring data, and it would be costly to set up a monitoring program for source waters state wide.
- There would need to agreement on what PWSS compliance data was source water related.
- Large federal and state commitment needed to compile and analyze data

Issues Discussion:

305(b) monitoring could provide data on pathogens and the presence of regulated drinking water contaminants in ambient surface waters. Some drinking water programs have monitoring for drinking water wells with conventional treatment. Compliance and other monitoring data could provide a primitive indicator of which contaminants are becoming more or less prevalent.

Option A. Most flexible: States not responsible for reporting data. Work with USGS trends analysis to develop a source water quality index that could answer this question.

Option B. Less flexible: state 305(b) monitoring programs continue to bolster ambient water quality monitoring for source waters in the state, including PWSS data as viable.

Tracking indicators to examine trends in CWA/SDWA linkages

of existing surface water supplies with WQS in place (including ground water under the direct influence), and ambient human health water quality criteria for all regulated drinking water contaminants.

of source waters with ambient water quality monitoring data.

of drinking water sources meeting their designated use

of 303(d) listed drinking water sources

Examination of number four: Number of source water assessments completed

Why needed: Accountability to Congress and the public.

Collecting information on the number of state source assessments completed: delineations, inventories, and susceptibility determinations made available to the public

Examination of number five: National Locational Data Layer of Source Water Areas

State Value: Reduces burden for states to need to supply source water locational data to other federal agencies in order to influence policies. Increases efficacy of state information being used to drive national policy. Useful at state level to influence state policies.

National Value: Increases efficiency in incorporating source water data into national regulations, policies, and budgeted projects. Increased ability to show the public the extent of source water areas across the country, and gives increased ability to see how these areas would be impacted by future regulatory policy decisions of different agencies.

Availability/Accessibility: Over 90% of states are collecting their source water areas in GIS format with locational data.

National Consistency: Locational data may be in different forms that need to be translated to be

put in a national data layer.

Burden: The burden is on EPA to come up with a platform that can accept the varying datasets and accurately pull them together.

Examination of number six: Resource needs to protect drinking water supplies.

6.1 Total dollars needed, as calculated by the state, to implement state approved local source water protection plans

Why needed at the state level: Could be valuable aid for defining SWP needs for state budgets as well as for other private and federal funders in the state.

Why needed at the national level:

- Provides part of the basis for future state and federal funding decisions.
- Indicates the level of need, providing context for examining present allocations, and justifying future allocations for source water protection.

Availability/Accessibility: Not currently available in most states

Cost: national cost to develop a template for calculating SWP implementation costs. State resources to compile information.

Anticipated issues: It is too burdensome for states to develop a sound methodology for estimating local costs because of the variability from plan to plan. Therefore “Needs” would be guesstimating, and most likely will be over inflated and therefore meaningless.

Issue Discussion: To keep the costs from being inflated and viewed as “random”, a state/EPA/tribe/PWS workgroup could produce a worksheet for use by states and localities to estimate the costs of implementation of a local plan, and what sources they would rely on (local/county resources vs federal, state and private). This could help lead to some reliable cost estimations, useful also at the state level to work with state legislatures and administrations.

6.2 Dollars targeted to source water contamination prevention efforts by state. (federal state, local)

Why needed at the state level: accountability. Shows what resources are going where. If showing multiple sources, can bolster state’s argument for cross-program attention to source water.

Why needed at the national level:

- Indication of cross-program support of source water protection, and rating the success of a “comprehensive approach” that depends on existing authorities and programs rather than creating a new tier.

Availability: Varies depending on option. States have data on their budgets. Federal

have data on their budgets.

Burden: Varies depending on option. Low cost for just reporting single program allocations. More cost for a more comprehensive accounting.

Anticipated issues: Burden of reporting if the state drinking water/source water programs are asked to compile the information.

Issue Discussion:

Option A: Least comprehensive, not indicative of cross-program support, but shows state general support. State Source Water/Drinking Water Programs would not be responsible for compiling the total number. They would show us what their state environmental/health offices budgeted to source water protection. EPA would calculate the funds from other federal agencies. Local level funds would be left out of the equation.

Option B: Moderately Comprehensive, less burdensome, potential indicator of change in support levels across programs, but doesn't get at actual funding levels: # and type (land management, point source, agriculture, community awareness, etc) of federal and state programs with explicit policies for targeting funds to source water protection.

Option C: More comprehensive. State reporting of state "source water protection funds" would include the portions of prevention programs such as UST, UIC, Watershed, 319, and others that were allocated to protecting drinking water sources. EPA would calculate the funds from other federal agencies. Local level funds would be left out of the equation. *Advantage: starts to show if there are any changes in other state protection programs targeting dollars to source water.*

Option D: Most comprehensive. States reporting of state allocations as described in option 2, plus a state total of local funds being allocated within the state. EPA would calculate the funds from other federal agencies, breaking it out by state.

6.3 Projects funded by CWSRF and CWA allocated dollars to address a source water threat. Helps EPA evaluate if there is cross-program priority setting between the CWA and SDWA programs.