Appendix B

Draft Source Water Assessment Program Plan - 1/9/98

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Set-Aside Funding

Fiscal year 1996-97 Federal Capitalization Grant money for Wisconsin's Drinking Water State Revolving Fund (DWSRF) totals about $ 41.5 million. Of this amount, up to 15% can be used on Safe Drinking Water Act (SDWA) Sec. 1452 (k) activities. A maximum of 10% can go to one activity i.e. source water area delineations and assessments. This section, therefore, allows the State to use about $ 4.15 million for the delineations and assessments. Any of this amount not used for source water delineations and assessments can be transferred to the Drinking Water State Revolving Fund (DWSRF) to provide for loans to public water systems. With this in mind, Wisconsin intends to take the full $4.15 million for source water delineations and assessments. Only the FY 1996-97 money can be used for this activity. The State has four years to obligate this money. There is no State match requirements tied to this money.

There are three other direct set-aside funding avenues through the DWSRF capitalization grant.

1) The remaining five percent of the fifteen percent mentioned above can be made available for other SDWA Sec. 1452 (k) activities including: A) establishing a loan program for i) land acquisition and conservation easements, ii) a petition program, and/or iii) local, voluntary, incentive-based source water protection measures; B) technical and financial assistance as part of the capacity development provision; and/or C) implementation of the wellhead protection program. There is no state match necessary for these expenditures.

2) A State may use up to 10 percent of a state's capitalization grant for any combination or the following four activities: A) for public water supervision programs; B) to administer or provide technical assistance for source water protection programs within the state; C) for capacity development and/or D) for operator certification. The State must match this 10 percent dollar-for-dollar.

3) The State may use up to two percent of the state's capitalization grant for additional technical assistance to small PWSs. There is no State match requirement on this money.

4) The State may use up to four percent of the state's capitalization grant on DWSRF administrative expenses and/or technical assistance. There is no State match requirement on this money.

The state does not plan to utilize money from these four sources directly for its Source Water Assessment Program (SWAP). However, these sources will likely be utilized for DWSRF, capacity development, operator certification and/or wellhead protection programs which are related to the SWAP.

Proposed Scope of Work for Source Water Assessment Program

<u>Groundwater SWAA delineations</u>

Baseline source water assessment area (SWAA) delineations will be produced by the Department of Natural Resources (DNR) for all public water supply wells. All wells will be located and mapped using Geographic Information System (GIS) technology to within an accuracy of ± 40 ft. Municipal wells have already been located at this 1:24,000 scale. Most other-than-municipal (OTM) wells and non-transient non-community (NTNC) wells can be located by Regional staff by in-office mapping, with Global

Positioning Systems (GPS) receivers or with the use of Digital Raster Graphic Technology. Transient non-community (TNC) wells will be located by staff and/or LTEs with one of these locational tools.

All SWAAs for community wells will be delineated by the Calculated Fixed Radius method based on a 5-year time of travel or by use of a minimum fixed radius. Non-community wells will have fixed radius delineations assigned based on well type. NTNC wells will be assigned a 1200 foot radius. It is proposed that TNC wells will be assigned a 200 foot radius. In addition, the State will consider agreements with county or municipal governments, or consulting firms that demonstrate capacity and willingness to complete more advanced delineations and assessments.

Surface Water SWAA delineations

Surface water intakes are located and mapped in the DNR's GIS. Surface water SWAA delineations will be produced by the DNR for all public water supply intakes. Two options have come to the forefront on this issue: 1) use the SWAA delineations to do assessments on the entire land area that contributes water to the intakes, and 2) utilize a stepped approach focusing on areas within the watershed that have the greatest impact on the intake and groundwater system SWAAs. To accommodate both of these potential strategies for assessments, at least two levels of SWAA delineations may be necessary for surface water systems:

Level 1 - Watersheds and Subwatersheds

For the intakes located in Lake Michigan and Lake Superior, subwatersheds will be delineated and assigned to each intake/intake cluster as SWAAs. The recommended delineation approach for Great Lakes intakes is intended to concentrate assessment efforts in subwatersheds with significant impact potential and promote local source water protection actions. Due to intake density, the Lake Michigan protection areas will likely be consecutive (i.e., common boundaries). As a result, individual intakes/intake clusters could experience some impact from adjacent protection areas. Subwatersheds will be assigned based on proximity to intakes, potential to impact intakes, and local jurisdictions.

For intakes located in Lake Winnebago, the entire watershed will be delineated and assigned to all intakes as the SWAA. Local experts and representatives will be consulted before finalizing SWAA delineations.

Level 2 - Critical Areas

Within the above delineated SWAAs, further subdivision and/or designation of critical areas may be done. Subwatersheds within SWAAs may be designated for different levels of assessment based on size and proximity to intakes. Critical areas may be designated based on proximity to surface waters, land use and/or contaminant occurrence. To facilitate critical area designation, monitoring data on raw water from surface water treatment plant intakes will be collected for identification of significant contaminants and/or contaminant sources. The DNR will encourage surface water systems to conduct raw water monitoring in 1998.

For SWAAs that cross State boundaries (e.g., Marinette and Superior in Wisconsin, Illinois Fox River Basin for Illinois intakes) communication and cooperation with other States will be initiated and sustained.

Source Inventories

The DNR will complete a potential source of contamination inventory for all SWAAs. Contaminants of concern may include all substances with a MCL, contaminants regulated under the Surface Water

Treatment Rule, and the microorganism Cryptosporidium. Other contaminants that the DNR determines may present a threat to public health may be included.

The state will compile a database of significant potential sources of the contaminants of concern for all SWAAs. Significant potential sources of contaminants will be defined as those listed in the attached vulnerability assessment form. Other sources may be included. Source inventories will be completed by the DNR according to the vulnerability assessment schedule (i.e. municipals by 11/98, OTMs by 11/99, and non-transients by 11/2000). Source inventories for transient non-coms will be completed by DNR staff, LTEs hired for this purpose or contractors. Coordination with other State programs will be essential during the source inventory work. Central Office staff will provide the Regions and/or contractors with existing data on source locations. GIS technology will be used by the Regions and/or contractors to create maps and/or listings of all significant potential sources of contamination located within each delineated SWAA. The maps and/or listings will be made available to the public.

Susceptibility Analysis

To determine which potential sources of contamination are significant to a particular public water system, the State may consider hydrologic and hydrogeologic factors, well construction information and characteristics of contaminants of concern and characteristics of the potential sources of contamination within the SWAA. This analysis will occur in conjunction with the vulnerability assessment program.

Delegation

We propose that DNR staff/LTEs complete most of the assessment work. These staff/LTEs in each region will work with municipal and county governments to conduct contaminant source inventories, assess contaminant risk, and develop contingency plans for surface water intakes. For groundwater systems, staff/LTEs will help locate public water supply wells (primarily TNCs) and complete contaminant inventories. For surface water source water area assessments the staff/LTEs will work with the following GMU Teams:

Lake Michigan	Lake Winnebago	Lake Superior
Root/Pike	Wolf	Lake Superior
Milwaukee	Upper Fox	
Sheboygan		
Lake Shore		
Upper Green Bay		

Note: An alternative delegation plan would allocate money to county and municipalities or consulting firms based on the number of PWSs within their jurisdiction or contracted area. For determining the allocation to county or municipal governments, added weight should be given to PWSs that serve larger populations.

Initial Rough Estimate of Program Costs

Annual costs

~ $ 50,000	1 central office FTE system analyst/designer - IS 13 position who will work in developing the SWAA assessment maps, other GIS work, and tools for public access to the SWAA assessment results i.e. hard copies and internet access via web page.
~ $ 25,000	1 central office LTE data entry position to help the system analyst/designer.
~ $250,000	10 LTE positions (2/region), to accomplish delineation and assessment field work.
~ $100,000	Travel costs for LTEs
~ $150,000	Central office staff time for data coordination, and other source water assessment activities.
~ $300,000	Regional staff time for costs associated with LTE supervision, information exchange and other source water assessment activities.

$875,000/yr x 4 yrs = $3,500,000 subtotal

One-Time Costs

~ $ 70,000	GPS equipment (2/Region)
~ $250,000	GIS software, NT servers, computer hardware and other computer costs
~ $ 50,000	Staff training in GPS and GIS technology
~ $ 5,000	Cost for completing CFR delineations for OTM systems
~ $ 25,000	Pilot Project
~ $200,000	Advanced delineation grants and staff time

~ $600,000 subtotal

Grand Total ~ $4,100,000

Questions for Consideration

1) Keeping in mind that all money set aside for source water area delineations and assessments can alternatively be used for SRF project loans if not needed for the source water program, should the DNR plan on using all the money available (10% of the capitalization grant) for source water delineations and assessments?

2) Should the DNR consider using capitalization grant money to: 1) establish a petition program; 2) establish a loan program for land purchases and conservation easements for source water protection; and/or 3) administer or provide technical assistance to source water protection programs within the state? (note: option 3 would require a dollar-for-dollar state match)

3) Who should perform the source water area assessments? Some options, advantages, and disadvantages include: A) The DNR could do the assessments efficiently and with state-wide consistency, but possibly without much involvement from local communities; B) Contracting with counties or municipalities would likely give more local involvement than option A, but would be more difficult to administer and would not guarantee consistent data, and C) Contracting with private firms could result in more consistency and administrative efficiency than option B, less than option A, but would likely cost more than either.

4) For source water area delineations for groundwater systems we are currently considering using Calculated Fixed Radius method and fixed radius delineations. Should we consider doing more advanced delineations?

5) Source water area assessments for surface water systems using Lake Winnebago water may involve assessing the entire watershed. This is an enormous area. What criteria should be considered in prioritizing contaminants of concern, subwatersheds, and potential sources of contaminants in these assessments?

6) The State will make the results of the source water assessments available to the public. Some options for doing this include: A) producing maps for each public water supply system with potential sources of contamination located; B) producing lists with potential sources of contamination for each public water supply system listed by address; and/or C) producing a web page with statewide assessment information in either or both map or list form. From the above options or other options what type of information format would be most useful?