# Source Water Assessment Plan
# SURFACE WATER

In California, the Surface Water Treatment Rule requirement for a watershed sanitary survey using AWWA guidance, and the vulnerability assessments for cyanide, asbestos, and organic chemicals (both regulated and unrelated) required by regulation in order to obtain waivers provide the fundamental elements of a Source Water Assessment Program (SWAP) for surface waters.

**Delineation and contaminant identification**

In December, 1993, a Watershed Sanitary Survey Guidance Manual was prepared by the American Water Works Association (AWWA), California/Nevada Section, Source Water Quality Committee, in conjunction with the California Department of Health Services Division of Drinking Water and Environmental Management (Department). The manual addressed the need for guidance related to the watershed sanitary survey requirement adopted into the California Code of Regulations, Title 22, Chapter 17, which reads as follows:

"Section 64665. Watershed Requirements

(a) All suppliers shall have a sanitary survey of their watershed(s) completed at least every five years. The first survey shall be completed by January 1, 1996.

(b) A report of the survey shall be submitted to the Department not later than 60 days following completion of the survey.

(c) The survey and report shall include physical and hydrogeological description of the watershed, a summary of source water quality monitoring data, a description of activities and sources of contamination, a description of any significant changes that have occurred since the last survey which could affect the quality of the source water, a description of watershed control and management practices, an evaluation of the system's ability to meet requirements of this chapter, and recommendations for corrective actions."

The AWWA manual (available by order from AWWA Cal-Nevada Section) comprehensively covers two of the three basic elements of an assessment plan: Delineation of the watershed and contaminant identification. In addition, it covers watershed control and management practices which actually come under the heading of watershed protection as defined in the USEPA draft Source Water Assessment Plan Guidance. However, the AWWA manual does not cover vulnerability assessment.

Vulnerability/susceptibility assessments (same approach as for groundwater except for vulnerability-to-asbestos determination)

The Department has addressed vulnerability and susceptibility assessments for organic chemicals and the inorganic chemicals cyanide under Section 64445(d)(1) and (2), Chapter 15, Title 22, CCR, which detail the assessment required to obtain a waiver, as follows:

"(d) A water system may apply to the Department for a monitoring waiver for one or more of the organic chemicals on Table 64444-A in accordance with the following:



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(1) A source may be eligible for a waiver if it can be documented that the chemical has not been previously used, manufactured, transported, stored, or disposed of within the watershed or zone of influence and therefore, that the source can be designated nonvulnerable.

(2) If previous use of the chemical locally is unknown or the chemical is known to have been used previously and the source cannot be designated nonvulnerable pursuant to Paragraph (d)(1), it may still be eligible for a waiver based on a review related to susceptibility to contamination. The application to the Department for a waiver based on susceptibility shall include the following:

(A) Previous monitoring results;
(B) user population characteristics;
(C) proximity to sources of contamination;
(D) surrounding land uses;
(E) degree of protection of the water source;
(F) environmental persistence and transport of the chemical in water, soil and air;
(G) elevated nitrate levels at the water supply source; and
(H) historical system operation and maintenance data including previous Departmental inspection results."

Surface water source vulnerability to asbestos is addressed in Section 64432.2 of Chapter 15 which specifies that all such sources are initially considered vulnerable.

The above vulnerability review process also applies to unregulated chemicals.

**Supplementation of existing state programs**

In order to ensure that the SWAP for surface waters is comprehensive, additional steps will be taken when five-year updates of sanitary surveys are conducted:

1. Establish "buffer" or "control" zones closer to the surface water sources to target contamination sources posing a possibly greater risk; such zones will aid in establishing both the appropriate levels of surveillance and management approaches.

For example, Mass. uses the following zones of protection (see attached picture):

**Zone A** would mean the land area between the surface water source and the upper boundary of the bank; the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A source (drinking water with no direct unimpounded river intake); and the land area within a 200 foot lateral distance from the upper boundary of the bank of a tributary or associated surface water body.

**Zone B** would mean the land area within one-half mile of the upper boundary of the bank of a Class A source, or edge of watershed, whichever is less. It would always include the land area within a 400 foot. lateral distance from the upper boundary of the bank of the Class A surface water source.

**Zone C** would mean the land area not designated as Zone A or B within the watershed of a Class A surface water source.



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2. Standardize mapping of watersheds. Standardized mapping is important for severeral reasons. It will facilitate review by Department and LPA staff. A clear, consistent approach to mapping will also facilitate review and use by the public to whom such information is to be made available under the SDWA requirements. Finally, eventually all such information will be transferred into a GIS; this will be an easier task if the maps on file are in a standardized format.



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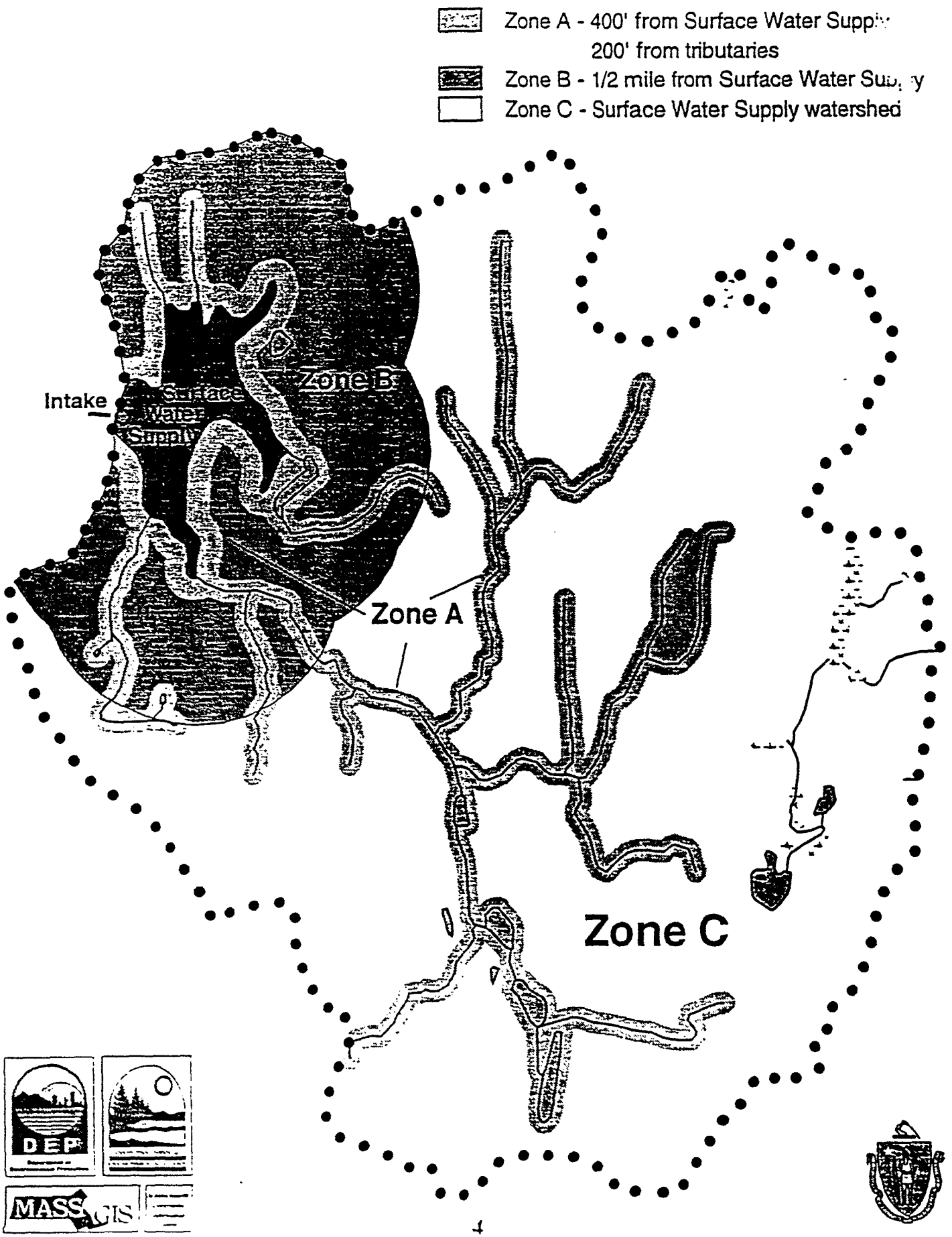
# Surface Water Supply Protection Areas

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