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Accessible Graphics on the World Wide Web

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Section 508 of the Rehabilitation Act (<http://section508.gov/>) requires that Federal agencies' electronic and information technology be accessible to people with disabilities. Text and properly-constructed tables on the Web are generally accessible to the visually-impaired individual using a screen magnification device, screen reader, or Braille output. A graphic image such as a picture can be made accessible with descriptive text called an Alt tag (for short descriptions) or longdesc (for long descriptions). Graphs and maps have generally not been accessible on the Web due to their complex nature.

An estimated 20% of the U.S. population has some type of disability, and approximately 10% has a severe disability. The severely-disabled individuals are limited in the way that they can use the Internet. A Pew study found that 62% of Internet users (73 million Americans) have gone online for health information. About 6 million use it on any given day – more than those who visit health professionals. According to Harris Interactive, 80% of online adults (110 million people) look for health information online.

The Cancer Mortality Maps & Graphs Web site (<http://cancer.gov/atlasplus/>) addresses the accessibility issue by using dynamically-generated text files that describe all components of the graphs or maps, which are also dynamically generated. The Web site is an electronic extension of the *Atlas of Cancer Mortality in the United States, 1950-94*, which was published in 1999. In addition to an electronic version of the book and an extensive list of links, the site also enables the user to create interactive mortality graphs and customizable mortality maps.

When a user generates a mortality graph, a text file (d link) is created dynamically, which describes all components of the graph: type of graph, title, legend, and detailed, line-by-line contents of the graph. Similarly, when a map is generated, a d link describing the contents of the map is created. While this file includes all the information contained in the map, the visually-impaired user cannot get a sense of the relative locations of the geographic units (states, counties) - they are simply listed alphabetically. Work is currently ongoing to rectify this problem through the use of accessible scalable vector graphics (SVG) files. A user will be able to “scan” an accessible SVG map or graphic

image and “hear” the contents as the scanning device moves around the map or image. This technology may prove helpful not only to people with visual difficulties, but also to individuals with dyslexia.