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## **8.0 Source Water Protection Area Delineations**

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The source water protection area calculations and delineations are based on well information, groundwater flow patterns and watershed configuration. The delineated zones for each of the groundwater supply sources are shown in **Figure 10**.

### **8.1 Source Water Protection Zone I**

The source water protection Zone I is the smallest of the three zones and is also the most stringent from a protection standpoint. Zone I is a circle around the well with a radius between 100 and 400 feet depending on well and aquifer characteristics. The management goal for Zone I is maintaining it in a natural state, under control of the water supplier, with no potential sources of contamination.

The Zone I areas for the public water supply wells have been established using the DEP “Recommended Wellhead Protection Area Zone I Delineation Methodology” (DEP, 2005). The methodology requires three pieces of information to determine the Zone I radius: porosity of the producing formation, the open borehole interval, and the groundwater withdrawal rate. **Table 3** presents the well information and Zone I radius for each of the public water supply wells.

For all wells permitted after October 9, 1995, the water supplier is required to own or substantially control the Zone I wellhead protection area to prohibit activities within the Zone that may have a potential adverse impact on source quality or quantity. To determine the regulatory requirements for ownership or control of the specified buffer area around the wellhead, the Water Supply Permit should be consulted.

### **8.2 Source Water Protection Zone II**

The land that contributes groundwater to a pumping well is referred to as the capture zone, or the zone of diversion. Zone II is the surface representation of the capture zone. This area is delineated by a volume of water, in an aquifer, contributing to a well. The Zone II delineations shown in **Figure 10** represent the volume of water entering the sources in a 10-year time-of-travel. In other words, groundwater that resides below the area identified as Zone II has a high probability of reaching the corresponding source in fewer than ten years. The Zone II area for all of the water sources occupies an area of 1.63 square miles. The surface area of the capture zones for each of the water sources are listed in **Table 3**.