

**Hotlos, H., Glowacka, J., Kolodziej, A. Water Demand Variations in the Water Distribution System of Wrocław. *Ochrona Środowiska* 2012, Vol. 34, No. 4, pp. 23–28.**

**Abstract:** Analysis was carried out to examine variations in water demand for the city of Wrocław, observed over the period of 1990–2011. For the year 2011, changes in water demand were also analyzed in the annual cycle and in weekly cycles. Since the beginnings of the 1990, Wrocław has experienced a decline in the quantity of water withdrawn for municipal purposes, and so have some other municipalities in Poland. Nowadays water demand is half that in 1990. The largest decline was noted in the first years of market economy implementation. Since 2005, unit demand has been nearly constant, ranging from 113 to 118 dm<sup>3</sup>/capita/day for households and from 40 to 42 dm<sup>3</sup>/capita/day for production, services and other uses. Analysis of change in the quantity of water pumped into the distribution system of Wrocław in 2011 revealed and substantiated cyclical variations in water demand for municipal uses, namely yearly, weekly and daily cycles. The shorter was the time interval, the greater were the variations in water demand. Maximal variations observed in the monthly, weekly and daily cycles were 1.16, 1.23 and 1.57, respectively. Water demand in the weekly cycle was characterized by insignificant changes on workdays and a decline on Sundays.

**Keywords:** Water supply system, water-pipe network, water demand, irregularity.