Purwokerto city is the capital of Banyumas regency, central java province. The population growth rate of Purwokerto city is 0.6% per year. The increasing of the population and area development causing the accomplishment of public facility needs such as water supply also progressively increase. At the moment, PDAM of Banyumas regency serves 65% of the population of Purwokerto city and has production capacities equal to 569 l/second. The leakage rate of production equal to 37.5% with drinking water service duration 18-22 hour per day. Based on the analysis and evaluation, it is necessary to conduct the design plan to optimize and develop the water supply system in Purwokerto city. The development is being planned in 2009-2015 with increasing of service rate until 80% and the service duration 24 hours, as it says in Millenium Development Goals (MDGs).

**Keyword**: water supply, leakage rate, evaluation, development, service.