EXECUTIVE SUMMARY

The City of Cottage Grove has two water treatment plants. The older plant is located approximately 21 miles east of the city on Layng Creek and has a capacity of 1.6 MGD. The newer plant is adjacent to the Row River east of the City and has a capacity of 2.0 MGD. The two plants, together, produced an average flow of 1.5 MGD during 1999, but the City will need 2.5 MGD by the year 2022. The City consumption from the two plants during the maximum week was 2.4 MGD in 1999 and is expected to reach 4.9 MGD by the year 2022.

The Layng Creek plant historically, was not able to consistently meet drinking water requirements of the Oregon Health Division for turbidity prior to replacing the filter media in January of 2000. In addition, the condition of the transmission pipeline from the dam sites to the City has deteriorated since it was installed in 1947. In an agreement signed in February of 2000 the City authorized LDC Design Group, Inc. to review the condition of the Layng Creek system and its ability to meet future needs through the planning year of 2022.

There are two significant issues addressed in this report. The first was to determine the conditions of the facilities and the costs of repairs and/or replacements to maintain service for the City. The second was to consider alternative solutions and propose a plan for the City to meet its needs for water.

The transmission pipeline was analyzed and the costs of maintaining and repairing it were estimated so that it could continue in service. The treatment plant was also analyzed and, since it is not expected to meet future needs, the costs of new treatment facilities were estimated. Seven alternative plans were considered, including replacing the Layng Creek system with an immediate expansion of the Row River plant, a variety of treatment processes that might be used to replace the Layng Creek plant, reducing the number of customers served, and replacement of badly deteriorated pipelines.

Costs were compared and a decision, based on costs over the planning period, favors expanding the Row River plant to serve the City and the outside customers between the City and Dorena Lake, ceasing to provide service east of the Dorena Mobile Home Park and closing the existing Layng Creek Plant and facilities. It is recommended that the City review these findings and, if approved, proceed with a phased program to secure additional financial assistance, and to expand the Row River Plant to replace the supply from the Layng Creek plant and to abandon the system's facilities east of the Dorena Mobile Home Park. The cost of improvements over the next three years would be approximately $3.6 million dollars. If no new financial assistance were to be obtained, the annual debt service cost for this alternative, at normal interest rates, would be expected

to increase approximately 70 percent in 2005. Annual operating costs would be expected to increase only by about four percent per year.

If sufficient additional revenue and grants can be obtained to pay the additional cost of service to the customers along the to-be-abandoned section of pipeline, then the City should instead install a storage tank, repair the transmission pipeline and replace the Layng Creek treatment plant with either slow sand filtration or the "package" filtration facilities. The cost of improvements over the next three years for these alternatives would be approximately $6.3 million dollars. The annual debt service cost would be expected to increase approximately 120 percent in 2005 if either type of filtration is selected with financing at normal interest rates. The annual costs for operation and maintenance would be expected to increase by about four percent per year, but the increase would be nearly double that rate during the year the package plant was to be completed.

Table 1 shows the several alternatives, advantages, disadvantages, issues, and costs.