SECTION VII
WASTEWATER TREATMENT SYSTEM AND SOLIDS HANDLING ALTERNATIVES

INTRODUCTION

A layout of the City of Woodland's existing wastewater treatment plant (WWTP) is shown in Figure VII-1. The WWTP consists of the following processes: headworks with solids and grit removal; one primary clarifier; one submerged biological contactor (SBC), two rotating biological contactor (RBC) units; one secondary clarifier; a contact basin for chlorine disinfection; and an aerobic digester for solids treatment.

As discussed in Section IV of this report, the existing WWTP is doing an excellent job of meeting the City's National Pollution Discharge Elimination System (NPDES) permit requirements. The treatment plant removed an average of 95.9% of influent total suspended solids (TSS) and 93.9% of influent 5-day biochemical oxygen demand (BOD_5) from July 1996 through June 1998. This high level of treatment has been achieved even though average influent TSS and BOD_5 loadings have exceeded existing NPDES permit influent loading values (880 pounds per day (lbs/day) and 800 lbs/day, respectively) by an average of 31% and 38% respectively over the two year period. This indicates that either: 1) the existing fixed film secondary treatment process, consisting of the SBC and RBC units, is conservatively sized; or 2) that the amount of BOD_5 and TSS being removed in the primary clarifier is much greater than the 30-35% typically used as a design parameter.

This section presents an overview of the existing plant processes in terms of both the design and actual capacity of each process (a summary table is provided in Appendix F) and in terms of the overall level of treatment provided by the existing plant for current waste flow and load. Alternatives are also reviewed in this chapter for upgrading the reliability of the WWTP to be in conformance with DOE requirements, and improving the plant to meet existing water quality standards and biosolids regulations.