1.1 GENERAL

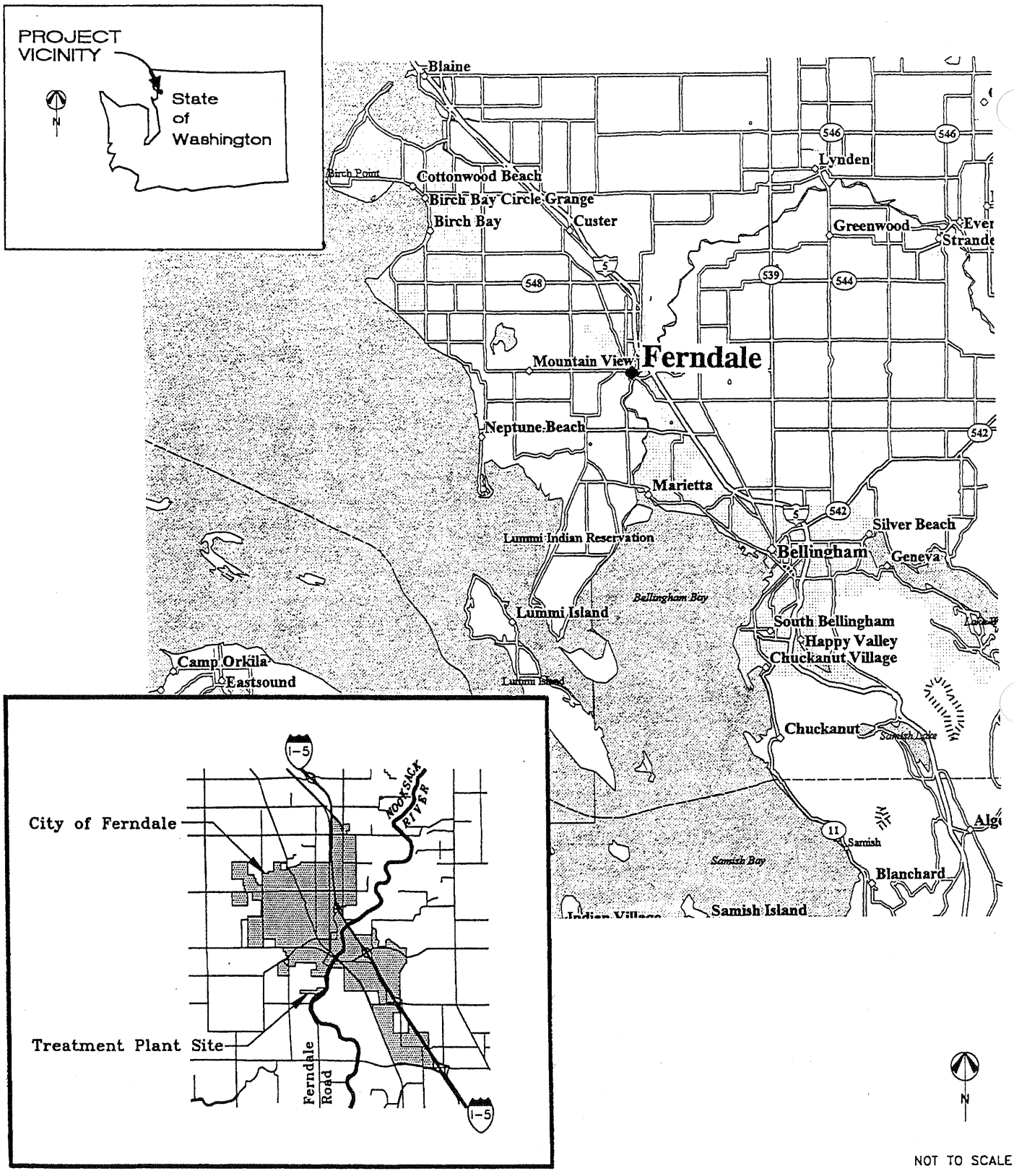
The City of Ferndale is located in northwestern Whatcom County along the Nooksack River. Location and vicinity maps are presented in Figure 1-1. Ferndale's current population is estimated at 6,713 (1994). The community is primarily residential with some commercial and industrial areas.

Ferndale's existing wastewater facilities include systems for collection and treatment of wastewater from the City's current service area of approximately 2,900 acres. The collection system consists of gravity sewers and several pump stations and forcemains to convey sanitary wastewater directly to the wastewater treatment plant. The City of Ferndale wastewater treatment plant (WWTP) provides secondary treatment using four aerated lagoons, a leachate pond, a polishing pond, a chlorination basin and a single port outfall to the Nooksack River. Urban growth over the next twenty years is expected to increase the City's population to nearly 28,000 and service area to nearly 7,300 acres. The City's wastewater facilities (collection and treatment) have limited capacity to meet the demands of the anticipated growth. This plan, therefore, evaluates future facilities required to accommodate both existing and future wastewater collection and treatment needs.

1.2 BACKGROUND

The collection system currently consists of nearly 225,000 lineal feet of sewer line (gravity and forcemain), between 4 inches and 24 inches in diameter. Sixteen pump stations are also currently used for transmission.

The City of Ferndale WWTP currently consists of four partially-mixed aerated lagoons, the first two operating in series and the final two operating in parallel, followed by a polishing pond and chlorination facility. Ultimately the effluent is discharged to the Nooksack River at approximately river mile 5.2. The treatment plant was originally constructed in 1969 with a design capacity of 0.5 million gallons per day (MGD) and was subsequently expanded in 1984 and again in 1992 to accommodate design flows of 1.72 MGD (peak month) and an annual average flow of 1.40 MGD. The 1984 and 1992 expansion improvements were phases one and two of a three phase, twenty-year plan to meet the City of Ferndale's wastewater treatment and disposal needs through the year 2005. The improvements were originally developed and presented in the 1984 City of Ferndale Wastewater Treatment Facilities Engineering Report. The Amendment to the 1984 Engineering Report (1992) was developed to address revised implementation scheduling of the planned improvements based on actual growth that occurred in the late 1980's. In 1989, effluent scum removal facilities were also constructed as an improvement to the treatment plant.



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Vicinity Maps

Comprehensive Wastewater Facilities Plan
City of Ferndale, Washington

Figure 1-1

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Wastewater flows to the treatment plant have increased to approximately 1.0 MGD (annual average) or 1.5 MGD (peak month) (1994). Consequently, on a peak month flow basis, the treatment plant is nearly operating at design capacity. Due to financial limitations, only portions of Phase II were implemented in the 1992 improvements. Improvements to the treatment plant included a 2.8 million gallon aerated lagoon.

Since the last improvements, more stringent discharge regulations have been adopted and the community has increased in population. The WWTP currently operates with a National Pollution Elimination Discharge System (NPDES) permit. The date of issuance for the permit was June 28, 1993. The WWTP is providing sufficient treatment according to the effluent limitations, although more stringent limitations for chlorine became effective January 1, 1996. The existing facility would have violated the (1996) chlorine effluent limitations on several occasions during the previous year. Due to both the more stringent NPDES effluent limitations and the projected population growth within the community, new improvements are required for upgrading and expanding both the collection and treatment facilities.

1.3 PURPOSE AND SCOPE

This Comprehensive Wastewater Facilities Plan for the City of Ferndale evaluates the City's needs based on projected residential population growth and commercial and industrial demands on the treatment system through 2015. The plan is based on population projections developed as part of the City's planning to comply with requirements of the Growth Management Act and to support those requirements. This plan specifically addresses the following topics:

- Service area characteristics
- Population and growth characteristics
- Existing wastewater collection and treatment facilities
- Wastewater flow and loading characteristics
- Evaluation of collection facilities improvement requirements
- Preliminary design of collection facilities improvements
- Evaluation of treatment facilities improvement alternatives
- Preliminary design of treatment facilities upgrade and expansion improvements
- Implementation of selected improvements
- Environmental evaluation of selected alternatives

This facilities plan includes a schedule for the City to provide adequate treatment capacity in accordance with Washington State Department of Ecology requirements. The plan has been prepared in accordance with the Washington Administrative Code (WAC #173-240) which outlines the requirements of such plans. The WAC regulations are provided in Appendix A. In addition, this facilities plan is intended to be used to apply for and receive either grants or loans from the Department of Ecology or other funding sources.

A draft version of this document was prepared in early 1995. It was submitted to DOE for review in June, 1995. This document updates the draft version with DOE's comments and some refinements to the discussions on preliminary design of treatment facility improvements, associated costs and implementation including potential user fees. Other sections, including discussion on existing wastewater characteristics and the existing status of treatment and collection facilities remain effective as of the end of 1994.