CHAPTER 1

INTRODUCTION

This document sets forth the Comprehensive Sewer Plan for the community of Clinton, Island County, Washington. The plan has been prepared in general conformance with the requirements of the Washington Administrative Code (WAC) for sewer plans 173-240-050. This plan updates and integrates some of the findings from *Wastewater Facilities Plan, Final Draft,* R.W. Beck, March 1995 (unapproved) as well as using the documents listed below:

- *Island County Comprehensive Plan,* Draft, Island County, 1998
- *Island County Code,* Island County, 2000
- *Clinton Subarea Plan,* Island County and Citizen Committee, (developed in 1998 to 2001, unapproved)

1.1 AUTHORIZATION

At present, the Clinton Water District's primary responsibility is the provision of potable water to the residents of Clinton, an unincorporated area in Island County. An important part of providing quality water is to ensure adequate wastewater management (treatment and disposal) options so the community's ground water is not contaminated.

Pursuant to provisions of Title 57 RCW and WAC 372-52, the Washington Department of Ecology issued a Certificate of Necessity to Clinton Water District on February 2, 1999, that gave the CWD authority to plan and establish sewer facilities.

In order to investigate the wastewater collection, treatment, and disposal methods for the community of Clinton, the CWD has authorized and contracted with CHS Engineers, Inc. to prepare this Comprehensive Sewer Plan. The creation of this plan is fully supported by the Island County Health Department and Washington Department of Ecology. Furthermore, the citizens of Clinton have been actively involved in the development of this plan, contributing technical ideas and preferences for future implementation processes.

1.2 PURPOSE AND SCOPE

The purpose of this report is to develop a Comprehensive Sewer Plan that provides versatile concept-level planning for a variety of needs regarding wastewater collection, treatment, and disposal within the proposed service area. In this CSP we describe a set of alternatives for wastewater management that include decentralized approaches as

well as the traditional centralized solutions (centralized sewer collection network and single plant for wastewater treatment facilities).

The concept of "appropriate-sized" technological options is offered in this plan in order to match wastewater treatment and disposal technologies with the specific needs and characteristics of the Clinton community. Having choices of "appropriate-sized" options enables the community to plan and evaluate solutions that range in scale in order to address identifiable problems in the short term and in the long term.

Long-term continued use of inadequate septic systems will cause contamination of the groundwater. One option that would minimize such a risk and other possible health risks of inadequate septic systems is a centralized sewer collection system and centralized wastewater treatment facility. This report presents that option in addition to other wastewater collection, treatment, and disposal options that also can reduce the risks caused by inadequate septic systems. The concept of "appropriate-sizing" is important to the community in order to allow flexibility to meet needs as they are identified in the short term and in the long term.

A previous, unapproved engineering study - *Wastewater Facilities Plan*, *Clinton, WA, Final Draft*, March 1995 by R.W. Beck provides significant useful and relevant background information for this plan and where appropriate is referenced in this plan. This CSP is intended to be an independent document, suitable for review and approval by the regulatory agencies, but with some reliance upon the R.W. Beck report where referenced. This CSP provides updated information, revised recommendations and new alternatives that are different than those reported in the R.W. Beck report. For example, changes in land use are noted along with updated population data provided by Island County, State of Washington Office of Financial Management (OFM), and the Clinton Water District. Cost estimates for the construction of wastewater facilities first presented in that study are updated in current (2003) dollars.

This report presents an additional new wastewater treatment process option: Membrane Biological Reactor (MBR) which has only recently become available. The MBR process can produce high-quality effluent that can be reused within the community in ways that substitute for some potable water uses such as vegetation irrigation use. Wastewater reclamation and reuse facilities can offset future potable water use. The MBR process also offers de-centralized wastewater treatment (two or more small treatment plants rather than a single large facility) as well as small, incremental capacity upgrades of a single plant that cannot normally be done with other conventional treatment technology.

In addition to the decentralized option using MBR technology, and for the purpose of keeping to a versatile "appropriate-sized" approach to wastewater management, this plan offers some solutions to small localized needs for onsite wastewater systems that are regulated by the Island County Health Department. It is recognized that some types and sizes of onsite wastewater systems are regulated by Washington State Department of Health or Washington State Department of Ecology. A summary is as follows:

1. Island County Health Department: Onsite wastewater systems with design flows at a common point of less than 3,500 gpd.
2. WA Department of Health (DOH): Onsite wastewater systems with flows between 3,500 and 14,500 gpd at any common point, excluding mechanical treatment systems.
3. WA Department of Ecology: Mechanical or lagoon-type onsite wastewater systems followed by subsurface disposal exceeding 3,500 gpd at any common point, and systems exceeding 14,500 gpd at any common point.

In summary, the decentralized concept itself can range from oversight management of individual on-site systems to state-of-the-art technology for the entire proposed service area, thus encompassing the full spectrum between on-site systems and traditional centralized wastewater systems.

Good projections of population and land use are essential to concept-level plans like this CSP. Preliminary research leading to the development of land use and population information used in this report included a review of existing demographic data and historic records pertaining to the study area. In addition, Island County's planning data were integrated with CWD customer account records to establish a 20-year forecast of population in the CWD proposed service area.

This report provides a general outline showing various strategies for sewage collection and treatment and disposal within the defined service area. Several alternatives are represented and analyzed to identify their advantages and disadvantages. Estimated costs for capital construction and operation and maintenance are presented for Options 2 through 5. In addition, an estimate of connection charges and user fees are provided. No costs are provided for Option 1 (Appendix B) which was developed by the public.

It is recognized that every alternative discussed in this report has impacts beyond the primary issue of wastewater management such as; more intensive land use, increased population, affordability of public services, property values, adequacy of water supply and quality of life. Detailed discussion of most of these issues and impacts is beyond the scope of this report.

1.3 BOUNDARY AND SERVICE AREA

The CWD lies in the southeastern portion of Whidbey Island; Whidbey Island is bordered to the east by Saratoga Passage, to the west by Admiralty Inlet, and to the south by Possession Sound. See Figure 1.1 for Vicinity Map. The area is mostly rural and contains only one established water provider, that being the CWD. The area that the CWD serves is approximately 1,243 acres. The proposed service area, which is smaller and lies within the CWD service area, consists of an area of approximately 277 acres, which is approximately 22% of the area of the CWD.

The proposed service area reflects those areas of Clinton that were platted prior to the adoption and implementation of current on-site disposal regulation. The proposed

service area is comprised of three separate topographical drainage basins: North Clinton, Deer Lake, and Marshall. In the case of the centralized wastewater system option, a network of gravity collection sewers would be configured largely dependent upon the drainage basins whereas a pressure collection system could be configured with more flexibility.

The proposed service area may be generally described as three distinct areas based on the character of existing development and land use zoning and to a limited extent to the topographic drainage basins. The proposed service area is represented by Figures 1.2 and 1.3.

The north part of the proposed service area is approximately 45 acres (16% of the total service area). It contains mainly waterfront lots, which are located in Sections 13 and 24, Township 29N, Range 3 E.W.M., and the following four platted subdivisions, from North to South: Cascade View Addition, Clinton Beach, Brighton, and Clinton Park.

The central part of the proposed service area is approximately 125 acres (45% of the total service area), contains the majority of Clinton's commercial core, and contains the smallest number of waterfront lots. The plats located within the central area are from north to south: the Plat of Clinton, and the First Addition to Clinton. Also included within the Central Service Area is the Washington State Ferry Terminal

The south part of the proposed service area is approximately 107 acres (39% of the total service area), and has the largest stretch of waterfront property. The following five plats are within the south area and are listed from north to south: Orr's Addition to Columbia Beach, Columbia Beach, Riviera Terrace, Possession View Beach, and Cascade View.

On September 28, 1998, the Board of Island County Commissioners adopted the Island County Comprehensive Plan and implemented Development Regulations, which designated Clinton a mixed use Rural Area of Intensive Development (RAID) that has both commercial and residential components. The proposed service area closely follows this designated Clinton RAID boundary. In June 1999, the Growth Management Hearings Board modified the RAID boundary to exclude the Plats of Cascade View, Possession View Beach, and Riviera Terrace, and other properties, designating them as rural zoning.

1.4 HISTORY AND BACKGROUND

The Clinton Water District lies in the southeastern portion of Whidbey Island, in unincorporated Island County. It became an established water provider in 1945. In 1950 the Island County Health Department began permitting on-site sewage systems which were built with significantly less stringent standards than those required today. The original septic system design criteria focused primarily on disposal rather than treatment. In 1974 improved standards were promulgated that required "reserve areas" which are portions of the lot set aside for the eventual replacement of the drain field.

Currently all sewage treatment and disposal is provided by onsite wastewater systems and a majority are conventional septic systems. Not all systems meet today's standards as set in 1974 by Island County; see chapter 2.7

1.5 RELATED MUNICIPALITIES AND AGENCIES

Several organizations, agencies and governmental bodies are involved with planning, financing, regulating and operating wastewater treatment works and collections systems. Various procedures, rules and requirements are applicable to each of the wastewater treatment options considered in this report, all of which must be taken into account. Presented below is a list and short description of the primary agencies associated with providing wastewater services for the proposed service area. (The list is not intended to be all-inclusive)

- Environmental Protection Agency (EPA) – the lead federal agency responsible for setting regulatory requirements, financing the planning and construction of wastewater treatment systems; evaluates environmental impacts of projects with federal funding.

- U.S. Army Corps of Engineers – responsible for navigable waters; issues permits for construction in tidelands and wetlands, provides construction inspection when requested by the U.S. EPA for projects with federal funding.

- U.S. Department of Housing and Urban Development (HUD) – responsible for funding community development projects in special need areas; administers the National Flood Insurance Program and delineates flood hazard zones for insurance purposes.

- Washington State Department of Ecology, (DOE) – the lead State agency responsible for environmental matters; determines water quality criteria and effluent limitations; administers the National Pollutant Discharge Elimination System (NPDES); administers permits for "substantial development" along shoreline within the authority of the Shorelines Management Act; assists in funding of publicly owned wastewater treatment systems; reviews and regulates engineering designs; reports and plans for construction of new wastewater treatment plants or expansions of existing plants; reviews plans for federally funded projects and acts as final review board for environmental impacts under the State Environmental Policy Act.

- Washington State Department of Health (DOH) – The Washington State Department of Health works in conjunction with DOE having responsibilities for water quality and public health and responsibilities for review and approval of documents related to water quality and public health.

- Washington State Department of Natural Resources (DNR) – The Department of Natural Resources has approval authority for the use of state-owned aquatic lands. The most typical situations related to construction of wastewater collection, treatment, and disposal facilities where this approval would be required are underwater pipeline crossings and outfalls.

- Washington State Department of Fish and Wildlife – responsible for wildlife throughout the State; responsible for issuance of hydraulic project permits.

- Puget Sound Air Pollution Control Agency – responsible for air quality in the Puget Sound region, regulates emissions or discharges from industrial uses.

- Clinton Water District – owns and operates the water system in the Clinton area. Will assume ownership, operation, and maintenance of the Clinton Sewer District if constructed.

- Island County – responsible for planning and zoning on Whidbey Island. Also issues local permits regulating road construction, building, etc.

- Native American Tribes – No Indian trust lands. May be some fishing rights that are affected by a marine outfall effluent discharge.

1.6 FACILITIES AND SERVICES

Facilities and services available in the Clinton area are listed on Table 1.1. The table indicates the appropriate entity providing or administering the service or facility.

TABLE 1.1

FACILITIES AND SERVICES

Facility/Service	Provider
Schools	South Whidbey School District #206
Fire Protection	Island County Fire District #3
Law Enforcement	Island County Sheriff
Water Supply	Clinton Water District
Public Transportation	Island Transit and Washington State Ferries
Telephone	Whidbey Telephone Co. Inc.
Sewage Disposal	Only on-site septic systems
Solid Waste	Island County Solid Waste Island Disposal
Recreation Parks etc.	Island County Parks & Recreation
Marine Ports	South Whidbey Port District
Health	Island County Health Department
Electrical	Puget Sound Energy
Gas	Onsite liquid propane
Television	Comcast