

## 1.0 INTRODUCTION

### 1.1. Background

The Town of Ledyard acting through its Economic Development Commission (EDC) selected Weston & Sampson Engineers, Inc. (Weston & Sampson) to complete a Sewer Feasibility Study for the Ledyard Center Area (Center) and the Baldwin Hill Industrial Park. The study includes a discussion on the Center (the Baldwin Hill Industrial Park is discussed in another study. The Sewer Feasibility Study is funded through a Small Town Economic Assistance Program (STEAP) Grant from the State of Connecticut. The project area is shown on Figure 1.

The development of the Center has been a priority for the Town of Ledyard and is addressed in the Plan of Conservation and Development, Economic Strategies Plan (November 1998), and the Economic Development Commission's Annual Reports. Each of these documents supports the development of the Center. Specific references from each of the plans are outlined below.

#### *Plan of Conservation and Development (Plan)*

1. A cost-benefit analysis should be completed to determine if construction of community sewer systems or public sewer main extensions would generate additional commercial/industrial development and tax revenues (Page VI-4).
2. The Town of Ledyard received a \$490,000 grant through the Small Town Economic Assistance Program, part of which will be used to fund the sewer feasibility study (Page VI-14).
3. A community septic facility should be considered for the Ledyard Center Area to allow for a more creative and denser development in Ledyard Center (Page VI-15).
4. Economic development will continue to be hindered without a formal water and sewer infrastructure to support the growth (Page VI-16).
5. The town should support the growth and development of Ledyard Center (Page VI-18).

#### *Economic Development Commission – Annual Report 2004*

1. The STEAP Grant received by the town will be used to fund the sewer feasibility study.

#### *Economic Strategies Plan – November 1998*

1. The plan supports the development of the Center as shown by Action Plan C.3 (Page 31).

In reviewing these documents, it is clear that the development of the Center is a priority for the Town of Ledyard.

The Town of Ledyard last completed a Town-wide Wastewater Facility Plan in 1974. This study is more than 32 years old and no longer represents the planning and development desired by the Town (facility

reports are typically written for a 20-year period). Therefore, this document was not utilized as part of this study.

## **1.2. Project Scope**

The purpose of this Sewer Feasibility Study is to determine the most feasible and cost-effective method for treatment and disposal of wastewater in the project area. In order to determine a feasible solution, Weston & Sampson completed the following items:

- Preparation of Base Mapping: using topographic maps and GIS data provided by the Town, Weston & Sampson prepared a base map of the project area.
- Wastewater Flow Projections: an analysis of existing and future residential and commercial flows for the project area.
- Evaluation of Alternatives: an evaluation of two (2) alternatives for treatment and disposal of wastewater.
- Conclusions and Recommendations

## **1.3. Existing Wastewater Facilities in Ledyard**

The Town presently has a Wastewater Treatment Facility (WWTF) and collection system that services the Highlands area of Town. The existing WWTF has a capacity of 0.28 million gallons per day. The Town has indicated that the WWTF is at or near capacity.

## 2.0 EXISTING CONDITIONS

### 2.1. Project Area

The project area is as shown on Figure 1 and is located in the central part of Ledyard.

### 2.2. Zoning

The project area is comprised of four (4) zoning districts (see Figure 2 for locations). The zoning districts consist of the following:

Zoning District	Description
LCVD-1	Ledyard Center Village District-1
LCVD-2	Ledyard Center Village District-2
LCVD-3	Ledyard Center Village District-3
MFVD	Multi-Family Village District

In LCVD-1 and LCVD-2 Zones there are no minimum lot sizes and in LCVD-3 and MFVD Zones the minimum lot size is 20,000 square feet. For additional requirements, see the Town of Ledyard's Zoning By-Laws (2005).

### 2.3. Soils

Weston & Sampson prepared a summary of the soils within the project area and their limitations for septic system disposal, which is presented in Table 2-1. Figure 3 shows the locations of each soil type. The information is based on the USDA Soil Conservation Service (SCS) soils survey prepared for New London County in June 1983.

**Table 2-1  
Summary of Soil Types in the Project Area**

Symbol	Soil Name	Limitation	Principal Cause	SHW Table
Aa	Adrien and Palms Soils	Severe	Ponding, excess humus	+1-1.0
AfA	Agawam Fine Sandy Loam	Slight	N/A	>6.0
CbB	Canton and Charlton Soils	Slight	N/A	>6.0
CcB	Charlton-Chatfield Complex	Moderate	Large stones	>6.0
Ce	Carlisle Muck	Severe	Ponding, excess humus	+1-1.0
HcA	Haven and Enfield Soils	Slight	N/A	>6.0
HkA	Hinckley Gravelly Sandy Loam	Severe	Small stones	>6.0
HrC	Hollis-Chatfield Rock Outcrop Complex	Severe	Depth to rock	>6.0
NIC	Narragansett-Hollis Complex	Moderate/Severe	Slope, small stones, depth to rock	>6.0
Nn	Ninigret Fine Sandy Loam	Moderate	Wetness	1.5-3.0

Symbol	Soil Name	Limitation	Principal Cause	SHW Table
PbB	Paxton and Montauk Soils	Moderate	Percs slowly	1.5-3.0
Rc	Raypol Silt Loam	Severe	Wetness	0-1.0
Rn	Ridgebury, Leicester and Whitman Soils	Severe	Large stones, wetness, ponding	0-1.0
Rp	Rock Outcrop-Hollis Complex	Severe	Slope, depth to rock	>6.0
SvA	Sutton Fine Sandy Loam	Moderate	Wetness	1.5-3.0
Ts	Tisbury Silty Loam	Moderate	Wetness	1.5-3.0
Ub	Udorthents-Pits Complex	Moderate	N/A	N/A
Ud	Udorthents-Urban Land Complex	Moderate	N/A	N/A
Wd	Walpole Sandy Loam	Severe	Wetness	0-1.0
WxA	Woodbridge Fine Sandy Loam	Moderate	Percs slowly, wetness	1.5-3.0

Notes:

SHW: Seasonal High Water

As a general rule, areas that are mapped by the SCS as being severe for septic system disposal are considered areas that would be less likely to be able to utilize conventional septic systems for repairs or new systems. This isn't to say that there cannot be lots within areas defined as unsuitable for septic system disposal that would be suitable for such a purpose. The SCS provides a broad view of the suitability of areas and therefore, has been used in this study.

The SCS defines severe conditions as meeting the following criteria:

1. A layer with slow or moderately slow limitations.
2. A high water table at or near the surface for at least 4 or 5 months of the year.
3. Bedrock generally within 2 feet of the surface and a very rocky or extremely rocky surface in many places.
4. Flooding may occur in the area.
5. Slopes greater than 15 percent.

As shown in Figure 3, the majority of soils in the center portion of the project area have a moderate to slight limitation for septic system disposal. This indicates that on-site disposal of wastewater may be feasible.

#### 2.4. Wetlands

As shown in Figure 4, there are wetland areas and one (1) 100-year floodplain area in the northeast portion of the project site and wetland areas in the southern portion of the project area.

## **2.5. Public Water**

Portions of the project area are serviced by public water from either the Water Pollution Control Authority or the Southeastern Connecticut Water Authority. The Town has indicated that public water mains will be extended to those areas without public water. See Figure 5 for service area boundaries.