CDM

Sewer Extension Master Plan

Presented to:

Town of Amherst Select Board

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Camp Dresser & McKee Inc.

Introduction

- Project History
  - Original Facilities Plan Prepared in 1985 (Finalized 1991)
  - 20 Years Old
  - Recent Sewer Projects Completed in Amherst
  - Resident Desire in Other Areas for Sewers
  - Updated Master Plan Required to Establish Areas of Need and Prioritize Areas Based on Definable Criteria

Purpose

- The purpose of the update to the Facilities Plan is to identify the areas within town that are in need of centralized wastewater collection, prioritize the areas for implementation, and identify the cost effective and environmentally sound solution for handling the wastewater in the areas of need.

“Centralized Wastewater Collection”

- Town Sewer vs. Local Solution
- Centralized Wastewater Collection = common solution for a subarea
- Centralized Wastewater Collection
  - Conventional Sewers
  - Alternative Sewers (low pressure, vacuum)
  - Local Solutions (common septic, packaged WWTP, innovative/alternative solutions)

Recent Improvements

- Middle Street Area Sewers – 2002
  - 130 Houses
  - Subareas 1 & 2 from Orig. Facilities Plan
- Chapel Road / Mechanic Street Area Sewers
  - 115 Houses
  - Subarea 3 from Orig. Facilities Plan

Subarea Identification

- 12 Distinct Subareas
- Most in outlying areas of Town
- Maintained same or similar subareas as 1985 study where possible
- Subareas shown on Figures

NEEDS ANALYSIS

Needs Analysis

Evaluation Criteria	Weight Factor
Existing On-site Disposal Problems	35%
Homeowner Desire	10%
Soil Limitations	15%
Environmental Criteria	10%
Constructability	30%

Existing On-Site Disposal Problems (35%)

- Homeowner Questionnaire
  - Frequent Pumping
  - Leaching of Sewage to Ground
  - Odor Problems
- Failures Reported by Board of Health
- See Figure 3 of Report

Homeowner Questionnaire

- Frequent Pumping
- Leaching of Sewage to Ground
- Odor Problems
- Failures Reported by Board of Health

Dear Resident,

Through its consultant, CDM, the Town of Amherst is conducting a survey as part of a town wide study to determine areas of future sewer needs. Please take a moment to answer the following questions. When complete, please return this postage paid postcard A.S.A.P. Thanks for your help.

HOMEOWNER QUESTIONNAIRE

Street Address:

How many years have you lived at this address?

What do you have? (*check one*)

☐ Septic Tank and Leaching Field ☐ Cesspool

☐ Other Sewage Disposal System _____

Has frequent pumping of your septic tank or cesspool been necessary?

☐ Yes ☐ No More than once per year? ☐ Yes ☐ No

How many people use the sewage disposal system?

How old is your present disposal system?

Have you experienced any of the following problems? (*check all that apply)*

☐ Leaching of sewage to the ground surface ☐ Odor problems

☐ Slow drain or back-ups ☐ Other _____

Do you use any of the following low-flow appliances? (*check all that apply*)

☐ Front loading or reduced volume washing machines

☐ Faucet flow restrictors ☐ Low-flow showerheads

☐ 1.6 gallon per flush toilet ☐ Other _____

Is the groundwater near the surface in your area? ☐ Yes ☐ No ☐ Unknown

Do you think a sewer is needed in your neighborhood? ☐ Yes ☐ No

Do you have any other comments?

For more information, contact:

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Town of Amherst Dept. of Public Works
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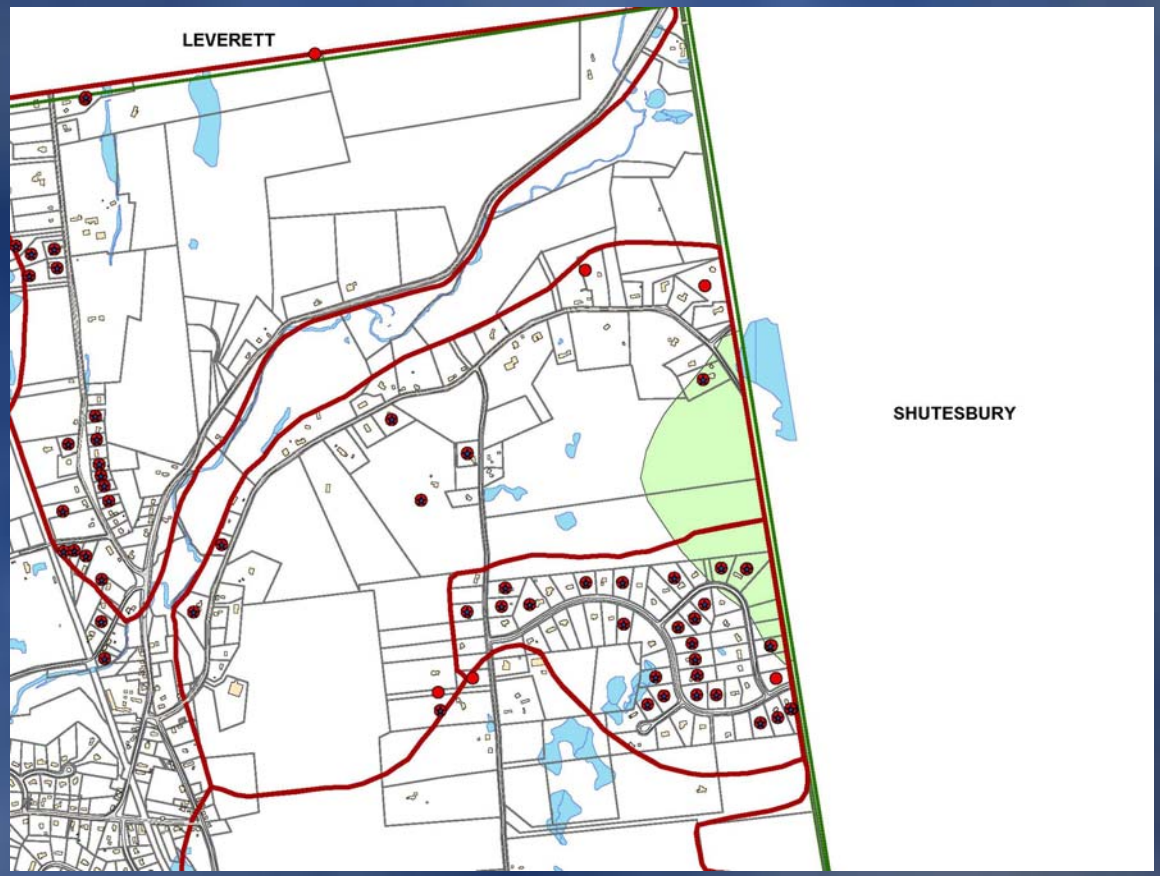
Existing On-site Disposal Problems (35%)



Homeowner Desire (10%)

- Based Solely on Questionnaire
- Where large percentages of homeowners desire sewers, on-site disposal conditions are likely to be poor and a sewer project is likely to have support
- Low weight (10%)

Soil Limitations (15%)

- Ability of soil to leach wastewater
- Based partly on SCS mapping
- Soil boring program also conducted
- Board of Health records also often indicated soil conditions
- Lot size and build out analysis

Environmental Criteria (10%)

- Four Categories
  - Lawrence Swamp Aquifer Protection
  - Proximity to Surface Water
  - Protection of Atkins Reservoir Watershed
  - Availability of Town Drinking Water

Constructability (30%)

- Addresses the effectiveness of providing a centralized solution
  - Distance to existing sewer
  - Need for cross country easement
  - Current build out
  - Future development
  - Type of Sewer
  - Pumping stations needed (O&M)
  - Required downstream improvements

Evaluation Matrix (Table 3-2)

Subarea ID	Neighborhood Description	Existing Onsite Disposal Problems (Weight 35%)		Homeowner Desire (Weight 10%)		Soil Limitations (Weight 15%)		Environmental Criteria (Weight 10%)		Constructability (Weight 30%)		Total Need Points	Priority Classification
		Value	Weighted Value	Value	Weighted Value	Value	Weighted Value	Value	Weighted Value	Value	Weighted Value		
6	Wildflower Drive Area	2.0	70	5	50	4	60	0	0	5	150	330	Moderate Need
8	High Point Drive Area	2.7	93	5	50	5	75	5	50	2	60	328	Moderate Need
2	Harkness Road	2.0	70	5	50	4	60	2	20	4	120	320	Moderate Need
5	Hulst Road Area	2.7	93	5	50	5	75	1	10	3	90	318	Moderate Need
3	Southeast Street Area	1.3	47	4	40	2	30	1	10	5	150	277	Minor Need
11	Montague Road Area	1.7	58	5	50	1	15	2	20	3	90	233	Minor Need
7 (1)	Shays Street Area	0.7	23	3	30	4	60	0	0	3	90	203	Minor Need
13	Northeast Street Area	2.3	82	1	10	3	45	3	30	1	30	197	No Significant Need
4	Bay Road Area	1.3	47	5	50	1	15	2	20	2	60	192	No Significant Need
9	Market Hill Road Area	2.0	70	4	40	3	45	3	30	0	0	185	No Significant Need
10	Leverett Road Area	2.0	70	5	50	2	30	3	30	0	0	180	No Significant Need
12	Meadow Street Area	0.0	0	5	50	2	30	2	20	2	60	160	No Significant Need
7A	Shays Street Dense Cluster	0.3	12	5	50	4	60	0	0	5	150	272	Minor Need

Notes:

(1) Due to the dense cluster of existing houses in the Shays Street portion of Subarea 7, this portion (7A) was separated for a more detailed analysis.

Criteria for Priority Classification	
> 400	Major (Immediate) Need (0)
300 - 400	Moderate Need (4)
200 - 300	Minor Need (4)
< 200	No Significant Need (5)

Recommended Plan

- NO areas of “Major (Immediate) Need”
- Recommend improvements only in areas of “Moderate Need” (4 areas)
  - Wildflower Drive Area
  - High Point Drive Area
  - Harkness Road Area
  - Hulst Road Area
- Improvements Need Not Occur Immediately

Areas with “Moderate” Need

- Wildflower Drive Area
  - 13,200 feet of gravity sewers
  - 3,700 feet of low-pressure sewer
  - 2 Pumping Stations
  - $3,100,000 (Dec. 2003)
- High Point Drive Area
  - 7,900 feet of gravity sewers
  - 3,900 feet of low-pressure sewer
  - 1 pumping station
  - $1,900,000 (Dec. 2003)

Areas with “Moderate” Need

- Harkness Road Area
  - 4,900 feet of gravity sewer
  - Pelham residents
  - $830,000 (Dec. 2003)
- Hulst Road Area
  - 11,700 feet of gravity sewer
  - 1,000 feet of low-pressure
  - 1 Pumping Station
  - $2,600,000 (Dec. 2003)

Recommendation Summary

- NO Areas of “Immediate” or “Major” Need
- Any major sewer extensions should be limited to four subareas identified
- Areas of “Moderate” Need do Not need immediate attention
- Possible focus on existing infrastructure