Wastewater Management Planning

Presentation to Windham Town Council Wastewater Planning Update and Discussion

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Presentation Outline

Introduction

- Wastewater Planning Process
- Alternatives Overview & Comparison
- Hydrogeological Work at Lippman Site
- Management Options
- Financing
- Schedule
- Questions/Discussion/Next Steps

Task 1 – Wastewater Needs Assessment

- Groundwater quality is threatened
- WW management needed in core development areas
- Facilitate desired development



Task 2 – Alternatives Screening

- Identify feasible wastewater collection, treatment, and disposal alternatives for reducing Nitrogen (N) loading
 - § On-site treatment (Private Individual)
 - § Off-site treatment (Public Community)
 - § Off-site disposal (Public Community)
- Wide range of alternatives considered
- Identified suitable sites for <u>local</u> solutions

Task 3 – Comprehensive Alternatives Evaluation

- Comprehensive: Windham specific
 - § Collection sewers
 - § Transmission sewers and pump stations
 - § Wastewater Treatment
 - § Treated Effluent Disposal
- Life-Cycle Cost Comparison

Alternative 1 Private Systems

- Less nitrogen removal à Need to manage more flow (45% of planning area)
- Highest Life Cycle Cost
- Privately funded (Town ordinance driven)
- Does not address increased density development goal

Alternative 2 - Multiple Systems

- Need to manage 30% of planning area
- Public solution and funding
- Greatest flexibility to serve multiple locations in planning area

Alternative 2 Conceptual Plan



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Alternatives 3 & 4 - Single System

- Need to manage 27% of planning area
- Public solution with private partner
- Lowest lifecycle cost
- Service area contiguous to Lippman site may not reach all areas

Alternative 3 Conceptual Plan



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Alternative 4 - Single System with Remote Disposal

- Similar to Alternative 3
- Higher Life Cycle Cost due to increased piping and pumping costs

Life Cycle Cost Comparison

	Alternative 1 Private Individual Systems		Alternative 2 Two Systems		Alternative 3 Single System, 500 ft to Disposal		Alternative 4 Single System, 10,000 ft to Disposal	
Construction Year:	2020	2040	2020	2040	2020	2040	2020	2040
Capital Cost, M								
Construction - Collection, Treatment and Disposal	\$7.8	\$16.1	\$8.6	\$16.2	\$7.9	\$10.6	\$9.1	\$11.8
Contingency, Admin, Legal and Technical Services	\$2.7	\$5.6	\$2.9	\$5.6	\$2.8	\$3.7	\$3.1	\$4.0
Land Acquisition	\$0	\$0	\$0.6	\$1.2	\$0.3	\$0.4	\$0.3	\$0.4
Total Capital Cost, M	\$10.5	\$21.7	\$12.1	\$23.0	\$11.0	\$14.7	\$12.5	\$16.2
Annual O&M Cost, M	\$0.74	\$1.5	\$0.43	\$0.88	\$0.39	\$0.62	\$0.43	\$0.68
20 Year Present Worth, M	\$27.3		\$21.9		\$19.9		\$22.4	
40 Year Present Worth, M	\$102		\$69		\$49		\$54	

Alternative 3 Recommended

- Single system with disposal at Lippman Site
- Lowest life cycle cost
- Central location close to the areas of need
- Implementation can be phased

Lippman Site

- Donnabeth Lippman Park
- Public-Private Partnership Opportunity
- Transition from Private to Public
- Preliminary determination hydraulic capacity up to 100,000 gpd
- Adequate land area for total projected future flow



Management Approach

• Options:

- 1. Windham Own & Operate (PWD Charter Change)
- 2. Portland Water District Own & Operate
- 3. PWD Own & Windham Operate
- Recommended Approach
 - § #2- PWD Own & Operate

PWD Coordination

- Meeting conducted with PWD staff (new leadership)
- Amenable to management of <u>local</u> system
- Administratively simplest option
- Recommended option pending negotiation of reasonable charges

Single System Phase Implementation

 Start small and expand in future



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Potential Financing Basis

- Funding: SRF Loan (30 year term, 1.5%)
- Financing source options:
 - § User Fees: \$900 per EDU (125 GPD/EDU)
 - § General Fund: Property taxes to meet budget gap
 - § <u>TIF</u>: Future revenues from new and improved development
 - § <u>Connection Fees</u>: apply to users after initial connection phase
 - § <u>Ready to Serve Fee</u>: Impose if connection not mandated

Comparison to Other Communities

Community	Annual Rate (5 HCF/month)	Connection Fee
Cape Elizabeth	\$ 934	\$ 4,000
Cumberland	\$760	\$ 550
Portland	\$694	\$ 2,000
South Windham	\$586	\$1,000
Gorham	\$542	\$ 50 (existing stub) \$ 1,000 (no stub)
Westbrook	\$501	\$500
Falmouth	\$499	\$ 2,100
South Portland	\$360	\$ 1,350*

Funding and Financing

Item	"Phase 1"	Current	Future	
Total EDU Capacity	112	280	576	
O&M Cost	\$ 107,000	\$ 148,000	\$ 221,000	
O&M Cost per EDU	\$ 955	\$ 529	\$ 384	
Proposed Sewer Rate, annual	\$ 900	\$ 900	\$ 900	
Ready-to-Serve Fee (1), \$/EDU annual	\$ O	\$ 371	\$ 516	
Project Cost from Task 3	\$ 5 M	\$ 11 M	\$14.7 M	
per EDU	\$ 45,000	\$ 39,000	\$ 25,000	
Total Annual Debt Service (1.5%, 30 years)	\$ 208,000	\$ 458,000	\$ 612,000	
Annual Ready-to-Serve Fee Revenue	<u>\$ 0</u>	\$ 104,000	\$ 297,000	
Annual Debt and O&M Service Gap (Budget Deficit)	\$ 214,200	\$ 354,000	\$ 315,000	
Increase in Proposed Fiscal 2019 Budget	1.2%	1.9%	1.7%	
Increase in Annual Tax of \$200,000 Home	\$ 38	\$ 64	\$ 57	

Schedule

WRIGHT-PIERCE Engineering a Better Environment

WINDHAM WASTEWATER PLANNING SCHEDULE

75 Washington Avenue Portland, ME 04101

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(207) 761-2991

Key	Task	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
1	Public approval by referendum	*referendum date TBD by Town				<u></u>
2	Wastewater site purchase and sale agreement					
3	Funding and financing plan	•				
4	Hydrogeological site investigation and evaluation	4	-			
5	Discharge permit application	L				
6	Engineering design					
7	Bidding & construction			L.		
8	Connection of users					
9	First debt payment					

Questions/Discussion

Decision Points from Council

- 1. Does council support initial Town investment until TIF and user fees could offset debt service?
- 2. Budget impacts expend directly from TIF or incorporate into budget?
- 3. When could project go to referendum for approval of borrowing?
- 4. What additional information is needed by Council to make this decision?