

Mat-Su Borough Septage and Leachate Facility

Project Overview, Rate Analysis and
Funding Options



Overview

- Purpose
- Project Benefits
- Background
- Assembly History
- Proposed Facility Concept and Location
- Estimated Project Costs
- Funding Options
- Cost Comparison
- Questions

2

Purpose

- The proposed Septage & Leachate Treatment Facility is intended to provide a long-term solution for disposal of the two major wastewater streams in the MSB:
 - Septage from private residences, businesses and public institutions throughout the Borough, which represents more than 90% of the MSB population
 - Leachate from the Central Landfill near Palmer, which serves the entire MSB, and is funded by the Borough Solid Waste Division
- A local facility potentially minimizes costs to Borough residents and business for septage & leachate disposal by eliminating the cost of transportation from the Mat-Su to Anchorage.
- Current transportation costs from Mat-Su (Glenn/Parks interchange) to Anchorage are estimated at more than \$700,000/year.
- Anchorage disposal costs are expected to increase with periodic rate increases and eventual closure of Turpin Street facility

3

Background

- Currently, all septage and leachate generated in the Valley is transported to and disposed of at AWWU's Turpin Street Disposal Facility in East Anchorage. Septage and leachate mixes with Anchorage sewage and discharges from Asplund WWTP to Cook Inlet, which operates under a variance to the Clean Water Act.
- In late 1980s and early '90s, the MSB operated a small septage treatment and disposal facility in Houston. Closed in early '90s due to environmental and operational concerns. Land subsequently transferred to City of Houston.
- Septage Handling and Disposal Plan, HDR, 2007
- Regional Wastewater Planning Study, HDL, 2010
- Update to Septage Handling and Disposal Plan, HDR, 2013
- Central Landfill Development Plan, CH2M, 2014 (included leachate treatment evaluation)
- Site Suitability and Engineering Analysis, CH2M, 2015
- Financial Analysis for Septage and Leachate Facility, CH2M, 2015

4

Assembly History

2006

- Authorized Preparation of Septage Handling & Disposal Plan

2008

- Authorized Regional Wastewater & Septage Planning Study in cooperation with the Cities of Palmer and Wasilla

2011

- Established Wastewater & Septage Advisory Board (MSB Ord 11-087)

2012

- Site selection / planning for wastewater treatment facility (Reso 12-083)

2013

- \$100,000 for land acquisition (FY14 Budget); engineering / financial studies (Reso 15-015)

2014

- \$100,000 from State for site suitability and engineering analysis (Reso 14-084)
- Application for \$22 million DEC clean water loan (Reso 14-110)
- Leachate treatment added to project (Reso 14-117)

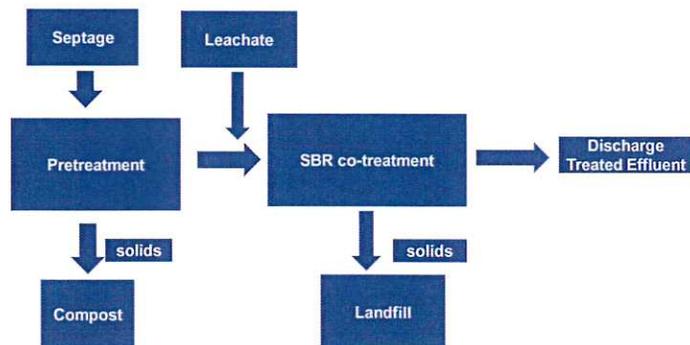
2015

- Central Landfill selected as preferred site (Reso 15-060)

* Prioritized septage & leachate treatment facility in legislative requests for past 3 years,
 5 FY 2014 (Reso 13-099), 2015 (Reso 14-073) and 2016 (Reso 15-098)

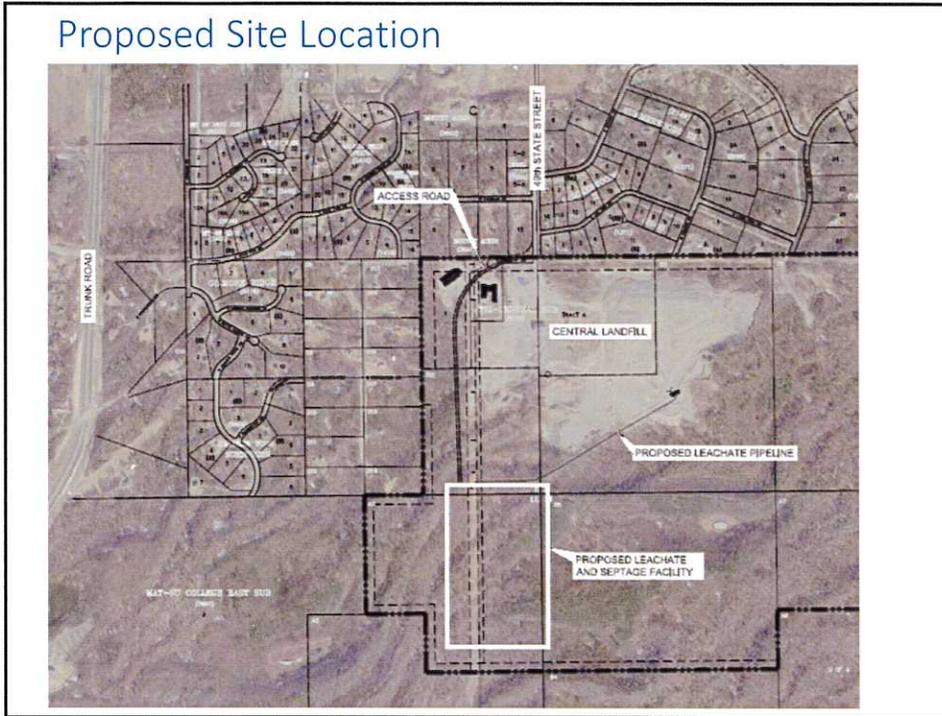
Facility Design Concept

Co-treatment of septage and leachate with onsite discharge to leach field



SBR = sequencing batch reactor

Proposed Site Location



Estimated Project Costs

Cost Component	Cost
Capital	\$19,000,000
Annual O&M	\$500,000

Treatment summary: septage pretreatment (solids removal), secondary treatment of pretreated septage and leachate, and several levels of effluent monitoring

Capital cost includes: site development, buildings, utilities, sequencing batch reactor (SBR) plant equipment, pretreatment equipment, centrifuges, natural gas feed pipeline, discharge leach field, monitoring wells, engineering, administration, permitting, contractor overhead, and 15% contingency

O&M cost includes: labor, equipment (trucks, forklift), spare parts, chemicals, and power

Funding Options Overview

3 options evaluated:

1. MSB General Obligation (GO) Bond – requires assembly and voter approval
2. ADEC Clean Water Grant/Loan Program – loan application approved by DEC for first \$5 million. Remaining funds to become available in subsequent years.
3. USDA Rural Development Grant/Loan Program – requires preliminary engineering and environmental studies for application. This has been partially completed as part of site suitability in 2015.

9

Estimated Breakdown of current disposal cost for Mat-Su Haulers

Cost Item	Estimated Cost/3,000 gal
Fuel	\$48.00
Labor	\$62.50
Truck maintenance & Insurance	\$36.80
AWWU discharge cost*	\$75.58
Total	\$222.88

*AWWU is currently conducting a rate study for a proposed rate increase in 2017, to be approved by the RCA.

10

Funding Option 1: MSB GO Bond

- Borough-wide general obligation (GO) bond covers capital
 - Annual debt service payments collected through property taxes
- Disposal fee covers O&M only, and disposal rates are expected to decrease.

Facility	Cost to dispose 3,000 gallons
AWWU (Anchorage)	\$222.88
MSB	\$115

11

Funding Option 1 – impact on property taxes

Example value of home	\$150,000	\$225,000	\$300,000
Annual impact*	\$29.74	\$44.62	\$59.49

* Estimated impact, may differ from actual levy adopted by borough

Based on a borough assessed value of \$6,964,137,808, which excludes the cities of Palmer and Wasilla because they are on city sewer.

12

Funding Option 2: ADEC Loan

- Disposal fee covers both capital debt service and O&M, and disposal rates are expected to increase.
- Conservatively estimating 100% Clean Water loan (no grants)

Cost item	Cost for 3,000 gallons
Debt service on capital (ADEC Loan, 1.5%, 20 yrs)	\$255
Annual O&M	\$115
Total	\$370

Facility	Disposal fee for 3,000 gallons
AWWU (Anchorage)	\$223
MSB	\$370

13

Funding Option 3: USDA Grant/ Loan

- Disposal fee covers both capital debt service and O&M, and disposal rates are expected to remain level.
- USDA grant covers 30% of capital

Cost item	Cost for 3,000 gallons
Debt service on capital (USDA Loan, 3.125%, 40yrs)	\$135
Annual O&M	\$115
Total	\$250

Facility	Disposal fee for 3,000 gallons
AWWU (Anchorage)	\$223
MSB	\$250

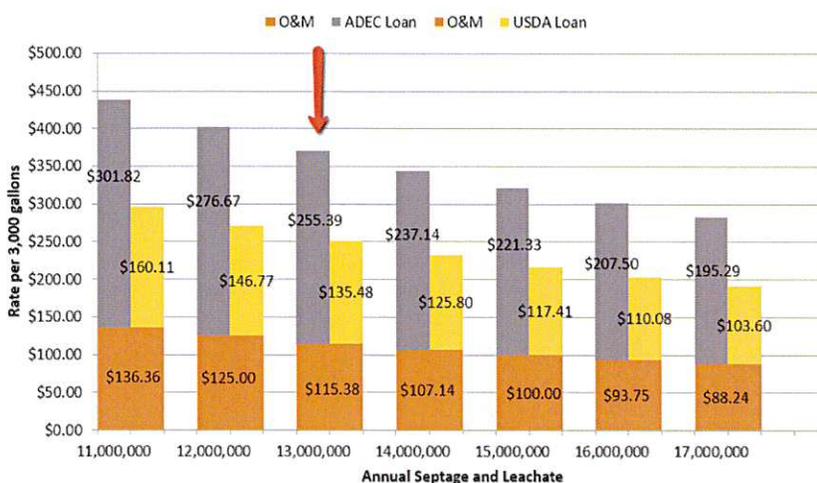
14

Cost Comparison Recap

	Option 1	Option 2	Option 3
Total cost of loan to MSB residents (principal + interest)	\$27,619,000	\$22,134,000	\$23,483,000
Pros	Allows for lowest tipping fee by only covering O&M	Lowest overall cost b/c of low interest rate and short term.	Grant covers ~30% of capital costs. Loan paid over 40 years by user fees.
Cons	Increases property tax mill rate. Highest overall cost	Limited grant funds. High tipping fees.	Interest rate higher than DEC program

15

Combined O&M and Debt Service Rate per 3,000 gallons: Sensitivity



16

Questions

17

Details –Capital Costs Projected Annual Debt Service

<u>Item</u>	<u>GO Bond</u>	<u>ADEC Loan</u>	<u>USDA Loan</u>
Capital Cost	\$19,000,000	\$19,000,000	\$13,300,000
Interest rate	3.75%	1.50%	3.125%
Term	20	20	40
Issuance Cost	1.00%	0.00%	0.00%
Annual Debt Service	\$1,380,953	\$1,106,669	\$587,074
Annual Septage, gallons	13,000,000	13,000,000	13,000,000
\$/000 gallon	NA	\$85.13	\$45.16
\$/3000 gallons	NA	\$255.39	\$135.48

18

Details – O&M Costs

Annual O&M

Item	O&M Disposal Rate
Annual O&M	\$500,000
Annual Septage, gallons	13,000,000
\$/000 gallons	\$38.46

19

Disposal Rate per 3,000 gal [Funding Option 2]

	\$/1,000 gal	\$/3,000 gal
Dept service on capital (ADEC loan, 1.5%)	\$85.13	\$255.39
Annual O&M	\$38.46	\$115.38
Total		\$370.77

20

Comparison between ADEC and USDA Loan Scenarios

New Facility Disposal Rate - O&M		All Scenarios	
Annual O&M		\$500,000	
Annual Septage, gallons		13,000,000	
\$/000 gallons		\$38.46	
\$/3,000 gallons		\$115.38	
Annual Debt Service Payment		ADEC Loan	USDA Loan
Capital Cost		\$19,000,000	\$13,300,000
Interest rate		1.50%	3.125%
Term		20	40
Issuance Cost		0.00%	0.00%
Annual Debt Service		\$1,106,669	\$587,074
\$/000 gallon		\$85.13	\$45.16
\$/3,000 gallons		\$255.39	\$135.48
Combined Debt Service and O&M			
\$/000 gallons		\$123.59	\$83.62
\$/3000 gallons		\$370.77	\$250.86

21

1000 Gallon Tank; pump every 4 years; assume 3 persons per household

	GO Bond	ADEC Loan	USDA Loan
O&M	\$38.46	\$38.46	\$38.46
CAP	\$184.02	\$85.13	\$45.16
TOTAL	\$222.48	\$123.59	\$83.62

Assumptions:

Average house price increase, %	2.0%
Average Years, Pumping	4
Average Size (gallons)	1,000
Median Household Value, MSB, 2013	\$218,900
Est Value in 2016	\$232,000
O&M cost per 1,000 gallons	\$38.46
ADEC Loan Annual Debt Service per 1,000 gallons	\$85.13
USDA Loan Annual Debt Service per 1,000 gallons	\$45.16
Assessed Value of MSB (less Palmer and Wasilla)	\$6,964,137,808
levy per \$1000	\$0.20

22