

MATANUSKA-SUSITNA BOROUGH WASTEWATER & SEPTAGE ADVISORY BOARD

Mike Campfield, Vice Chair
Gina Jorgensen
Thomas Stoelting

Archie Giddings
Helen Munoz

Tom Healy, Chair
Ronald Phillips

AGENDA

REGULAR MEETING

Wednesday, April 6, 2016

MSB Assembly Chambers
350 E. Dahlia Ave
Palmer, AK 99645

2:00 p.m.

-
- I. CALL TO ORDER
 - II. ROLL CALL AND DETERMINATION OF QUORUM
 - III. APPROVAL OF AGENDA
 - IV. PLEDGE OF ALLEGIANCE
 - V. AUDIENCE INTRODUCTIONS
 - VI. APPROVAL OF MINUTES OF PRECEDING MEETING
 - A. January 14, 2016 (regular meeting)
 - VII. PRESENTATIONS (*Approximately ten minutes per presentation*)
 - Mr. Bryan Holland, AeroFac Treatment Systems by Gurney Environmental
 - VIII. AUDIENCE PARTICIPATION (*Three minutes per person*)
 - IX. AGENCY AND STAFF REPORTS
 - A. City of Wasilla – Mr. Archie Giddings, P.E., Public Works Director
 - B. City of Palmer – Mr. Tom Healy, Public Works Director
 - C. City of Houston – Ms. Gina Jorgenson, City Council Member
 - D. Anchorage Water & Wastewater Utility –
 - E. Matanuska-Susitna Borough – Mr. Mike Campfield, P.E., Environmental Engineer
 - F. State of Alaska - DEC- Mr. Oran Woolley, Wastewater Engineering Associate
 - X. UNFINISHED BUSINESS
 - XI. NEW BUSINESS

- XII. INFORMATIONAL HANDOUTS AND COMMUNICATIONS
 - A. Copy of presentation given to the Assembly by CH2M Hill on 1-26-2016
 - B. Next Meeting's Deadlines
- XIII. COMMENTS FROM THE BOARD
- XIV. NEXT MEETINGS
 - A. To be determined
- XV. ADJOURNMENT

I. CALL TO ORDER

The regular meeting of the Matanuska-Susitna Borough Wastewater and Septage Advisory Board was held on Thursday, January 14, 2016, at the MSB Assembly Chambers, 350 E. Dahlia Avenue, Palmer, Alaska. The meeting was called to order at 2:03 p.m. Mr. Tom Healy chaired the meeting.

II. ROLL CALL AND DETERMINATION OF A QUOROM

Wastewater and Septage Advisory Board members present and establishing a quorum were:

Mike Campfield, P.E.
Tom Healy
Gina Jorgensen - by phone at 2:03
Helen Munoz
Ronald Phillips

Wastewater and Septage Advisory Board members absent and excused were:

Archie Giddings, P.E.
Thomas Stoelting

Staff and Agency Representatives in attendance were:

Debbie Passmore, Board Administrative Support
Mr. Terry Dolan, MSB Public Works Director

III. APPROVAL OF AGENDA

Today's agenda was reviewed by the Board and approved without objection.

IV. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Mr. Mike Campfield

V. AUDIENCE INTRODUCTIONS

Ms. Aimee Rathbun, PE, PDC, Inc. Engineers
Mr. Cory Hinds, CH2M Hill
Mr. Cory Adler, AK DEC
Mr. Mark Corsentino, AWWU
Mr. Eugene Carl Haberman
Assembly Member Jim Sykes
Mr. Chris Bowman, P.E., HDL

VI. NOMINATION & ELECTION

A. CHAIR

MOTION: Mr. Ron Phillips nominated Mr. Tom Healy for Chair; seconded by Mr. Mike Campfield. No other nominations were offered.

VOTE: No objections and this nomination was unanimously approved.

B. VICE CHAIR

MOTION: Mrs. Helen Munoz nominated Mr. Mike Campfield as Vice Chair; seconded by Mr. Ron Phillips. No other nominations were offered.

VOTE: No objections and this nomination was unanimously approved.

VII. APPROVAL OF MINUTES OF PRECEDING MEETING

- A. Minutes for the November 10, 2015 meeting were reviewed by the Board.

VOTE: The minutes were approved as amended without objection.

VIII. PRESENTATIONS

- A. Cory Hinds, CH2M Hill: "Financial Analysis for Mat-Su Borough Septage & Leachate Facility"

IX. AUDIENCE PARTICIPATION (*Three minutes per person*)

Mr. Eugene Carl Haberman

- Asked that we correct the name of this section to "Audience Participation"
- Was unhappy with how small the text and PowerPoint presentation handout was
- Wants the public to be able to speak AFTER the Agency and Staff Reports

X. AGENCY AND STAFF REPORTS

- A. City of Wasilla – none today
- B. City of Palmer – Mr. Tom Healy, Public Works Director
- a. Spoke on the work being done in completing the facility plan for the upgrades to the wastewater facility in Palmer.
 - b. Doing some geotechnical work and drilling on the site now.
 - c. Report should be done next week; facility plan should be done in early February. Will share it with the group when it's available.
- C. City of Houston – Ms. Gina Jorgenson, City Council Member
- a. City of Houston is working on the marijuana issue now
- D. Anchorage Water & Wastewater Utility, David Persinger, P.E.
- a. Working on the "cost of service study" but no report yet
 - b. The Board is welcome to come and tour their facilities
 - c. Eagle River system currently discharges to Eagle River
 - d. EPA gave Anchorage a waiver for primary in 1986
- E. Matanuska-Susitna Borough – Mr. Mike Campfield, P.E., Environmental Engineer
- a. We got the Assembly authorization to apply for some DEC loans for the leachate system at the landfill but that is independent from this project
 - b. Will talk later about the work session with the Assembly on January 26
- F. State of Alaska - DEC- Mr. Clint Adler – nothing today

XI. UNFINISHED BUSINESS

None

XII. NEW BUSINESS

- A. An Assembly work session for the septage & leachate facility project is scheduled for January 26th at 4 p.m. in the Assembly Chambers.

Discussion with Mike Campfield about the purpose of the meeting and the agenda.

Wants to bring the new Assembly members up to speed on the project and discuss the financial options.

XIII. INFORMATIONAL HANDOUTS AND COMMUNICATIONS

- A. Next meeting's deadlines

XIV. COMMENTS FROM THE BOARD

Mr. Ron Phillips

- Thinks it would be good to know how many Wasilla and Palmer systems are not in the community systems. The more numbers we can add to the people who will help pay for this will make a big difference.

Mr. Mike Campfield

- That's a good question and we need to figure that out
- Remember that the information about who's got septic systems in what boundary will only be applicable to the bonding option
- If there's anything else the Board would like to see in this presentation, let him know

Mrs. Helen Munoz

- Is just stubborn enough to see this thing done
- Believes that only 15% of our population are on city sewer
- Has spent years working in the business both here and in New York
- It's something that has to be done: it has to do with health and our future

Ms. Gina Jorgensen

- No comment

Mr. Tom Healy

- Looks forward to the joint meeting
- Does the Borough have a service area for the septage facility?

Mr. Mike Campfield

- No, there're not service areas for sewage outside of Talkeetna
- There are small community systems like Settlers Bay, one small subdivision in Meadow Lakes and little pockets here and there
- They are set up through homeowners' associations, not through the Borough
- There are some LID's for water systems; possibly there could be some for sewer LID's in the future

XV. NEXT MEETINGS

A. Work Session with the Assembly on Tuesday, January 26, 2016 in the MSB Assembly Chambers.

B. Thursday, March 10, 2016, 2:00 p.m. in the MSB Assembly Chambers

Mr. Mike Campfield, MSB Environmental Engineer asked that we move that meeting to the 8th. Debbie will check with the Clerk's office and confirm a new date with the Board.

XIV. ADJOURNMENT

With no further business at hand, the meeting was adjourned at 2:58 p.m. by Mr. Tom Healy.

Mr. Tom Healy, Chair

ATTEST:

Debbie Passmore, Board Administrative Support



AERO-FAC® WASTEWATER TREATMENT SYSTEM



www.gurneyenvironmental.com

GURNEY ENVIRONMENTAL
FROM WATER SUPPLY TO WATER RE-USE

THE ADVANCED AERATED FACULTATIVE SYSTEM



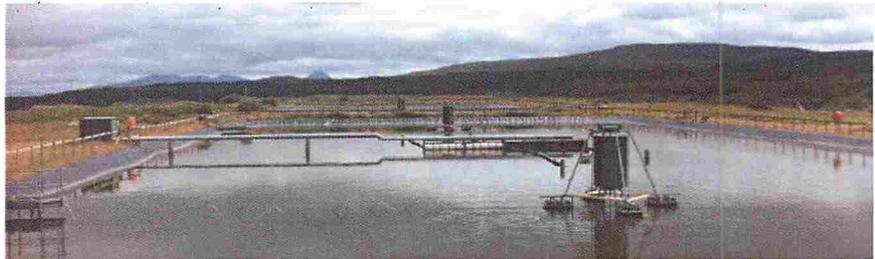
AERO-FAC® is a high-process-rate, wastewater treatment system that has been well proven with a variety of municipal and industrial wastewater applications in all types of climates. Aero-Fac® employs an advanced and optimised form of a completely biological aerated facultative treatment process that automatically adjusts to handle extreme variations in flows and loadings. Aero-Fac® incorporates fast and easy construction techniques, uses little energy, requires exceptionally easy operator skills, almost no maintenance, and yet produces effluent quality that can be superior for reuse and irrigation.

A NO-SLUDGE WASTEWATER TREATMENT SYSTEM

Aero-Fac® offers a number of unique benefits, not the least of which is a self-digesting sludge process that requires no pre-screening, sedimentation tanks, clarifiers, sludge removal, dewatering, chemicals or conditioning. And best of all, Aero-Fac® requires no routine sludge disposal or the associated tanker traffic in and out of the treatment plant. Sludge is continuously self-digested within the initial treatment stage eliminating costly equipment, labour and regulation.

EXTREMELY LOW CAPEX AND OPEX

Another advantage of Aero-Fac® is the very low operating cost. Gurney Environmental is unique in its use of a fully biological process along with wind powered aerators/mixers matched with an innovative diffused air aeration system. Overall the system can operate at anywhere from 50-85% less than typical activated sludge systems.



The wind powered SERIES 3 units have been extensively proven in wastewater treatment and other water applications. The completely stainless steel diffused air aeration components are also unique in that they require no routine cleaning or maintenance resulting in an extremely low total life-cycle cost.

NO ODOUR

Water industry personnel are routinely amazed by the lack of odour at Aero-Fac® WWTP'S. Many remark that it is hard to believe that they are actually at a sewage treatment plant! For years

Gurney Environmental has had an enviable reputation for its ability to solve severe odour problems associated with existing treatment plants.

EXTRAORDINARY FLOW/LOAD FLEXIBILITY

Seldom does a wastewater treatment plant see exactly the same flows or loadings throughout its lifetime or even during various parts of a week or year. Whether from tourism, storm water infiltration/flows, industry, growth or other issues, flows and loads vary at many facilities. This is where Aero-Fac® really shines.

AERO-FAC® OFFERS CLEAR BENEFITS



Aero-Fac® offers impressive advantages over other wastewater treatment systems that can result in less labour, less ongoing cost and more reliable operations and effluent quality. Overall, Aero-Fac® offers an extremely low total life cost as compared to other systems.



1

100% STAINLESS STEEL DIFFUSED AIR COMPONENTS.

No plastic. No rubber membranes. No hoses. No poly materials at all. 100% of the critical diffused air aeration modules and headers are stainless steel and designed to last a lifetime with virtually no maintenance.



2

NO CLEANING AND NO MEMBRANE REPLACEMENTS.

The entire diffuser assembly is self-cleaning. Nor are there any membranes to replace or any moving parts whatsoever. Eliminating membrane replacement alone can save over £ 50,000/year.



3

LOW-PRESSURE, LOW-MAINTENANCE, LONGLIFE BLOWERS.

Aero-Fac® uses low-pressure fan blowers requiring virtually no maintenance, practically no routine replacement parts and an almost unlimited lifetime.



4

FREE AERATION & PROCESS ENHANCEMENT THROUGH WINDPOWER.

Windpower provides 30-80% of the energy needed for processing. Unique wind powered SERIES 3 aerators/mixers have been proven in severe wastewater treatment applications for years, providing aeration, process acceleration and biological optimisation.



5

HIGHER QUALITY EFFLUENT.

Water from Aero-Fac® treatment systems not only meets rigid standards, it is also better in overall quality due to advanced stabilisation of all biochemistry. This makes it ideal for water reuse options.

Fewer mechanical and design interdependencies result in a more flexible and robust system able to handle real-world conditions.



DELIVERING AFFORDABLE SERVICES



Aero-Fac® can be designed to automatically accommodate anywhere from zero flows up to almost unlimited flows — all unattended. Shock or spike loads have little effect under most circumstances. This makes Aero-Fac® ideal for tourism areas, developments with planned growth, areas with large storm water fluctuations or industrial users.

The benefits of Aero-Fac® are important in solving the serious issues confronting the wastewater treatment industry including carbon footprint. Operating costs directly affect the sustainability of a WWTP. Aero-Fac® offers a typically lower initial CAPEX and a considerably lower OPEX and no sludge to worry about.

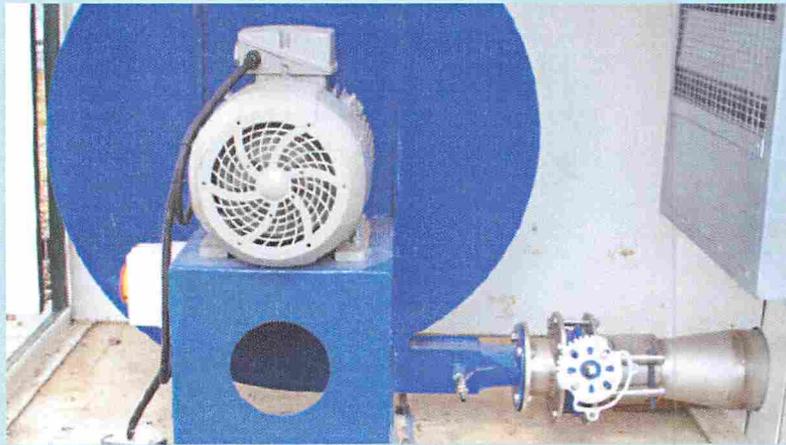
Aero-Fac® removes the concerns regarding sludge costs and regulations, as well as the dilemma of how to dramatically reduce the cost of providing wastewater treatment to the public and industry. These issues have been critical in the decision by water companies, industries and consultants to select Aero-Fac® in order to provide the highest quality treatment at the lowest possible per-treated-cubic meter cost to the public.

EFFLUENT QUALITY THAT MEETS TODAY'S NEEDS

Testing reports show excellent effluent quality with BOD typically <10 mg/l on average and sBOD typically <6 mg/l on average, well exceeding consent requirements. While many other systems are capable of delivering similar effluent quality, few, if any, can do so at such a low cost-per-cubic meter or total life-cycle cost, plus with such reliability, flow flexibility and so little operational complexity or maintenance.

DESIGN AND PROCESS EXPERTISE AVAILABLE

Gurney Environmental provides a global network of information to assist in solving problems with your project. Gurney Environmental has worked on treatment plants from around the world and can use that depth of experience to help you. Experience does make a difference. At no cost or obligation, Gurney Environmental will provide an evaluation and preliminary design assistance for consultants and clients interested in Aero-Fac®.



Diffused air aeration components utilise extremely reliable and low maintenance, low-pressure fan blowers instead of the typical high-pressure, hi-temp, high wear positive displacement compressors. This results in a smaller size, less heat, very little wear, almost no ongoing maintenance and a more robust, reliable system.



The SERIES 3 is an energy-efficient, environmentally friendly answer to aeration and mix needs, and a key element in both the AERO-FAC and ACCEL-O-FAC advanced wastewater treatment systems. The technology has proved itself in a variety of climates and applications worldwide over 30 years assuring reliable performance.

COMPARE AERO-FAC® TO ACTIVATED SLUDGE AND SBRs



	AERO-FAC® <small>BY GURNEY ENVIRONMENTAL</small>	Activated Sludge	SBR
Stormwater Buffering Tanks Needed	X	✓	✓
Shock Loads Can Upset Process	X	✓	✓
Prescreening Equipment Required	X	✓	✓
Aeration Energy for Oxygen Demand	✓	✓	✓
Additional Aeration Energy for Mix	X	✓	✓
Monitoring of Return Sludge	X	✓	✓
Clarifier(s) Required	X	✓	X
Sludge Extraction/ Conditioning	X	✓	✓
Dewatering Equipment & Labour	X	✓	✓
Sludge Disposal, Handling & Regulation	X	✓	✓
Significant Consumables/Chemicals	X	✓	✓
High Degree of Operator Attention and Expertise	X	✓	✓
Annual Maintenance Cost (4000 m ³)	£882/yr	???	???

USE AERO-FAC® TO PROVIDE ALL-IN-ONE TREATMENT AT EXISTING WORKS

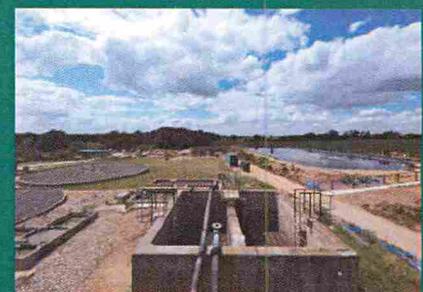
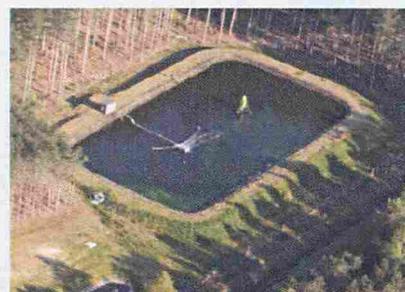
This unique approach to upgrading biological filters works provides many benefits including:

- Automatic balancing of diurnal flow/load patterns;
- Elimination of primary screening;
- Improved primary treatment (typical 70/80% BOD removal winter/summer);
- Elimination of sludge handling and disposal;
- Low energy and operating costs.

By making changes to the front end of the wastewater treatment plant as opposed to the back end, the increased treatment provides dramatically reduced load on the existing secondary treatment systems.

The resultant benefits to the secondary treatment are as follows:

- Increased capacity of secondary treatment stage;
- Extension to the operating life of existing system components;
- Increased treatment capabilities to meet discharge consents, including nitrification;
- Reduction of humus sludge quantities and digestion in primary treatment stage.



DESIGN GUIDELINES

AERO-FAC®
BY GURNEY ENVIRONMENTAL

Aero-Fac® utilises multiple cells in series. Each cell or stage reduces BOD by about 80-85% (water temperature dependent). Parallel trains provide for a modular approach to accommodate larger flows with complete and predictable scalability. Cells are ideally about 4.6m deep, length-to-width of about 2:1. Cells incorporate stainless steel diffuser bridge modules and air header, the quantity and positioning being application dependent and determined by Gurney Environmental. Diffuser air is supplied by low-energy, low pressure centrifugal fan blowers cycled on/off automatically on an "as needed" basis.



The cells also include SERIES 3 wind/electric powered aeration/mixing units (with low-wind activated 0.5 kW auxiliary motors) located in zones throughout the cells for biological optimisation, process acceleration, aeration and mix.

DESIGN CALCULATIONS:

1) 15-25 day detention (climate dependent); standard aerated-facultative computations for supplemental oxygen requirements; horsepower (oxygen transfer) is computed based on a typical 80% reduction per Aero-Fac® cell. Note: 100% of the required

oxygen for the process is on-line and available through the diffuser system, but will operate only as needed based on the aeration and process optimisation that can be provided by the wind/electric aeration units.

LOADING RATES:

From typical 90-675 kgBOD/ha/day. Can accommodate 1,120-1,685 kg/ha/day with proper detention and other factors taken into account.

LAND AREA:

Approx. 4m²/person for secondary treatment, but can be designed for more or less area. Please inquire for preliminary estimate.

DETENTION TIME:

12-15 days dependent on climate and discharge quality.

DEPTH:

4.6m optimum, 3.4m minimum. Other options available.

HORSEPOWER:

For guidance, use 10 kw/1000 m³ based on an influent BOD of 200 mg/L. Actual blower horsepower will be based on altitude, temperatures, air flows and several other proprietary design guidelines. Run-times (and net effective horsepower usage) are typically 25-65% based on available winds and other factors. Computing the first cell for a typical 80% reduction of BOD, using an oxygen-BOD removal factor of 1.5, residual DO of 2, CWTR of 2.5, and an alpha value of .9, provides a rough estimate of the horsepower of the blower for cell 1. Do the same for the second cell using 20% of the original BOD value (the amount the BOD remaining after the first cell) and reduce another 80%. NOTE: For precise sizing, Gurney Environmental will use project-specific temperature values for summer and winter operation, elevation of site, alphas and betas and other proprietary design considerations for each project.

WATER AND WASTEWATER TREATMENT SYSTEMS AVAILABLE FROM GURNEY ENVIRONMENTAL:

- Accel-o-Fac® Wastewater Treatment System
- WEARS ResMix™ "Source Management" system for reservoirs
- WEARS ResMix™ 400 for potable reservoirs
- EPT W2E "Waste to Energy" Anaerobic Systems
- CEQUESTA Sludge De-watering Systems
- ENVIRONETICS Environmental Control Systems
- ENFILTEC VPMF "Variable Pore Micro Filtration" system
- Aero-Fac®-STS Sludge Treatment System

1 Bryggen Road
North Lynn Industrial Estate
King's Lynn, Norfolk
PE30 2HZ UK

Tel: +44 (0)1553 776202 Fax: +44 (0)1553 776335

Email: info@gurneyenvironmental.com

www.gurneyenvironmental.com

GURNEY ENVIRONMENTAL
FROM WATER SUPPLY TO WATER RE-USE

Research into the treatment of landfill leachate

Use of landfill leachate to supply nutrients and irrigation for short rotation coppice

Summary

This project, investigating leachate irrigation onto coppice, is part of a series of studies carried out by ADAS on the use of biomass crops on landfill sites. Different species have been planted in replicated plots on a working landfill, and monitored whilst irrigating with landfill leachate. The results of the trials are very encouraging and they may offer a solution to sustainable management of landfill leachate in the future.

The challenge to ADAS

The project involved the development of a field scale trial on an operating landfill. The trial facility was designed with replicated randomised plots planted with six species, and installed with a ground level drip irrigation system to apply leachate from the landfill to individual plots. The trial protocol was designed and effects on the soils, and the effects within stems, leaves and roots of the crop were monitored over the five year life of the project.

Skills used/Overview

ADAS designed the trial, with 54 individual plots. The soils on the landfill were inherently very poor soil being imported onto site, and soil quality was initially improved by mixing gravel extraction finings, and green waste compost into the site. The five crop species included three willow, an alder, and a hazel, and were planted by commercial contractors into the prepared economy grade soil. The irrigation scheme was installed, using drip pipe laid on the soil, and supply pump from the balancing lagoon. The trial was established in 1999, with a first cut back in spring 2001, and the first harvest in Spring 2004 in line with commercial practice. The crop establishment and growth, and soil characteristics were monitored throughout the project, together with a comprehensive record of the leachate applied.



Research into the treatment of landfill leachate

Conclusions

The design of the trial and the facility allowed coppice to be grown and monitored in typical landfill soil conditions. The plants grew continuously through each season. On untreated plots, three of the willow species showed similar development to that of crop established on commercial sites in the locality, and the remaining species survived moderately well. The supply of water and nutrient in the landfill leachate proved to be beneficial to plant growth, although early application within six months of establishment reduced survival rate of some species. Increases in stem height and diameter were recorded on treated plots, and generally stem numbers were low compared to commercially grown SRC. One of the species noticeably outperformed the remaining species grown on the site. There was no excessive build up of elements from the leachate within plant tissue during the project.

The project was part funded with Landfill Tax Credits provided by Waste Recycling Environmental (WREN).

A copy of the report is available through enquiries@adas.co.uk.





Google earth

Image © 2016 Getmapping plc
© 2016 Google

100 m

MATANUSKA-SUSITNA BOROUGH

350 East Dahlia Avenue, Palmer, Alaska 99645 - 907-861-8683

BOROUGH MAYOR

Vern Halter

BOROUGH CLERK

Lonnie R. McKechnie, CMC

BOROUGH MANAGER

John Moosey

BOROUGH ATTORNEY

Nicholas Spiropoulos



BOROUGH ASSEMBLY

Jim Sykes, District 1
Matthew Beck, District 2
George McKee, District 3
Steve Colligan, District 4
Dan Mayfield, District 5
Barbara J. Doty, District 6
Randall Kowalke, District 7

ASSEMBLY AGENDA **ASSEMBLY CHAMBERS** **350 EAST DAHLIA AVENUE, PALMER**

SPECIAL MEETING

4 P.M.

TUESDAY, JANUARY 26, 2016

- I. CALL TO ORDER
- II. ROLL CALL
- III. APPROVAL OF AGENDA
- IV. PLEDGE OF ALLEGIANCE
- V. AUDIENCE PARTICIPATION
- VI. ITEMS OF BUSINESS
 - A. Septage And Leachate Facility
- VII. MAYOR, ASSEMBLY, AND STAFF COMMENT
- VIII. ADJOURNMENT

**Disabled Persons Needing Reasonable Accommodation In Order To Participate At An Assembly Meeting
Should Contact The Borough ADA Coordinator At 861-8432 At Least One Week In Advance Of The Meeting.**

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

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

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)

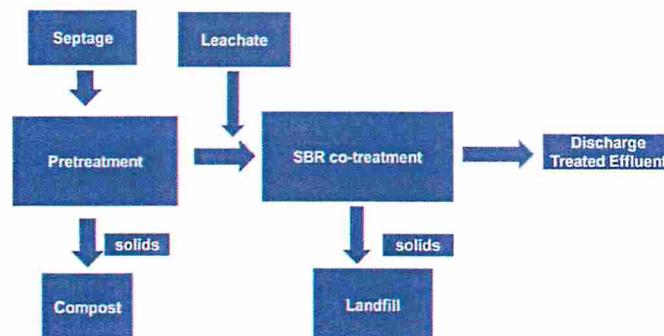
2015

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

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

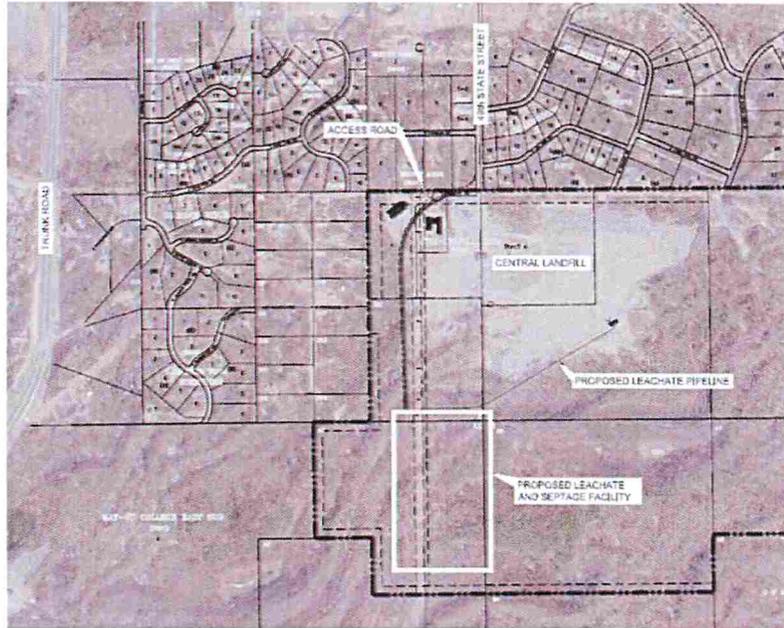
Facility Design Concept

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

I. CALL TO ORDER

The special meeting of the Matanuska-Susitna Borough Assembly was held on Tuesday, January 26, 2016, at the Borough Assembly Chambers, 350 E. Dahlia Avenue, Palmer, Alaska. The meeting was called to order at 4 p.m. by Mayor Vern Halter for the purpose of discussing a septage and leachate facility.

II. ROLL CALL

Assembly members present and establishing a quorum were:

Mr. Jim Sykes, Assembly District No. 1
Mr. Matthew Beck, Assembly District No. 2 (*Deputy Mayor*)
Mr. Dan Mayfield, Assembly District No. 5
Ms. Barbara Doty, Assembly District No. 6 (*arrived at 4:22 p.m.*)
Mr. Randall Kowalke, Assembly District No. 7

Assembly members absent and excused:

Mr. George McKee, Assembly District No. 3
Mr. Steve Colligan, Assembly District No. 4

Staff in attendance were:

Ms. Lonnie R. McKechnie, Borough Clerk
Mr. John Moosey, Borough Manager
Mr. George Hays, Assistant Borough Manager
Mr. Nicholas Spiropoulos, Borough Attorney
Ms. Brenda J. Henry, Assistant Clerk
Mr. Jude Bilafer, Capital Projects Director
Mr. Terry Dolan, Public Works Director
Mr. Mike Campfield, Environmental Engineer
Mr. Eric Wyatt, Information Technology Director

III. APPROVAL OF AGENDA

Mayor Halter inquired if there were any changes to the agenda.

GENERAL CONSENT: The agenda was approved as presented without objection.

IV. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Mayor Halter.

V. AUDIENCE PARTICIPATION (Three minutes per person.)

The following persons spoke to the need for a regional wastewater and septage facility: Mr. Tom Stoelting; Ms. Arlene Stoelting; Mr. Tom Healy, Wastewater and Septage Advisory Board Chair; Mr. Steven Linkhart; Mr. Tom Munoz; and Ms. Helen Munoz.

The following person spoke to concerns regarding the public process: Mr. Eugene Carl Haberman.

VI. ITEMS OF BUSINESS

A. Septage And Leachate Facility

Mr. Mike Campfield, Matanuska-Susitna Borough Environmental Engineer; and Mr. Tom Wolf and Mr. Cory Hinds, of CH2M Hill Engineering, provided a project overview, rate analysis, and funding options for a septage and leachate facility.

VII. MAYOR, ASSEMBLY, AND STAFF COMMENTS

Assemblymember Beck:

- noted that a septage and leachate facility is at the top of the Assembly's priority list;
- thanked the Wastewater and Septage Advisory Board for their hard work; and
- opined that it is time to keep the issue moving forward.

Assemblymember Sykes:

- spoke in appreciation of the presentation; and
- spoke in support of exploring alternative funding options.

Assemblymember Doty:

- spoke in support of exploring green options;
- stated that she would like to see a public informational campaign for the public;
- opined that the general public does not understand what septage and leachate are; and
- noted that it is an important issue that needs to be addressed.

Mayor Halter spoke in appreciation of the presentation.

VIII. ADJOURNMENT

The special meeting adjourned at 5:12 p.m.



VERN HALTER, Borough Mayor

ATTEST:



LONNIE R. McKECHNIE, CMC, Borough Clerk
Minutes Approved: 02/16/16