

AGENDA

UTILITY ADVISORY BOARD - WORK SESSION BIOSOLIDS RECOMMENDATION TO ASSEMBLY

Wednesday, December 2, 2015 – 5:00 p.m.
Lemon Creek Shop

I. CALL TO ORDER

II. APPROVAL OF AGENDA

III. APPROVAL OF MINUTES

November 20, 2015

IV. PUBLIC PARTICIPATION

V. INFORMATION ITEMS

- A. Update on Hoonah Proposal
- B. Update on Monofill Proposal
- C. Dryer Cost Estimate Update & Layout
- D. Utility Revenue Model Summary
- E. Utility Financial Summary
- F. Re-Cap of Eliminated Options
- G. Staff Draft Recommendation

V. WORK SESSION ON BIOSOLIDS RECOMMENDATION

VI. NON-AGENDA ITEMS

VII. ADJOURNMENT

NEXT MEETING - TBD

**UTILITY ADVISORY BOARD
MEETING MINUTES**

November 5, 2015

Engineering & Public Works Department – Lemon Creek Facility (5433 Shaune Drive)

Board Members Present: Geoff Larson - Vice-Chair; Grant Ritter; Leon Vance; David Hanna; Bill Brown

Board Members Absent: Janet Hall-Schempf; 1 vacant position

Staff Present: Rorie Watt; Samantha Stoughtenger

I. CALL TO ORDER

The meeting was called to order at 5:00 p.m. by Mr. Larson, Vice-Chair.

II. SELECTION OF NEW CHAIR

Leon Vance was affirmed as new board chair. Both incumbent chair and vice-chair recognized the dedication of past chair Scott Willis to the board's mission.

III. APPROVAL OF AGENDA

Agenda approved without amendment.

IV. APPROVAL OF MINUTES

Minutes approved without amendment.

V. PUBLIC PARTICIPATION

None.

VI. WORK SESSION ON BIOSOLIDS RECOMMENDATION TO ASSEMBLY:

- A. NPV Analysis – CBJ staff provided a variety of spreadsheets to compare NPV values to more tangible comparatives. The biosolids final treatment/disposal NPV values (\$28.8M) was compared to the Overall CBJ operating budget (\$4.5B), road maintenance program (\$160M), and Dimond Park Aquatic Center (\$45M). Potential cost savings realized by replacement of heating fuel with liquefied natural gas was discussed. 40 year NPV values were examined for each of the top options.
- B. Updates and/or Review of Concepts Evaluated by UAB
 - Dryer at MWWTP (Staff Recommendation) – no update
 - Hoonah/HIA Proposal – site visit was conducted on November 4th where CBJ staff provided all requested information to the project representatives.

- Bicknell/Gerondale Landfill Proposal – site map provided to UAB. Staff will meet with project representatives before next UAB meeting to provide clarification on additional project details.
 - Incineration – no update
 - Composting – no update
 - Gasification – no update
 - Other – no update
- C. Steps Moving Forward
- Board chair requested a staff recommendation for the Assembly
 - Requested the following information at the next meeting: updates on Hoonah, Monofill, Dryer options, re-cap of the Utility Revenue Model implemented by the recently approved rate increases, update on the current financial health of the utility, re-cap of abandoned options.
- D. Next Meeting Dates
- December 2nd at Lemon Creek Facility

VII. NON-AGENDA ITEMS

None.

VIII. BOARD COMMENTS AND DISCUSSION

None.

IX. ADJOURNMENT

The meeting was adjourned at 6:30 p.m.

Respectfully Submitted,

Samantha Stoughtenger

Samantha Stoughtenger, Utilities Superintendent
CBJ Utilities

WTP to Barge

Juneau Monofill Company (JMC) will pick up the full containers from the water treatment plant staging area 3X's a week, unless more often is warranted due to odor. When JMC picks up the staged container we will take ownership/responsibility for the biosolids at this time. JMC will transport the full containers to the barge landing in Salmon Creek and stage them there for the once weekly trip to the monofill on South Douglas Island. On each trip to the water treatment plant to pick up a full container JMC will drop off an empty container from the previous week's trip.

Once loaded on the barge JMC will haul the containers to South Douglas where the approximately 9 full containers will be off loaded. At this same time the 9 empty containers from the previous week's trip will be loaded on the barge for return to Juneau.

The containers will be maintained and repaired by JMC. JMC has welding facilities at the barge landing in Juneau. In order to have a buffer for possible delays JMC would like to use 40 containers for our operation. The most likely possible delay would be due to weather in the winter. This could cause a potential delay of up to 5 days in delivering the containers to South Douglas; fortunately this delay would be during the colder time of the year and the cold temperature would alleviate any odor problems.

PERMITTING AND BONDING

As part of our process to get all necessary permits from CBJ, DEC and EPA we will purchase any & all bonds required by the DEC for the closure plan we submit to them in our application. We are contracting with 2 firms that have experience in monofill permitting to assist us with this process. These permit applications will be shared with CBJ in order to insure CBJ understand JMC's plans for:

- Security at monofill to ensure the public and wildlife are safe
- Environmental compliance in regards to leachate, possible pathogens, testing & reporting
- Closeout of monofill and longterm plans for the property

While we are working through the 6 month permitting process JMC will reconfirm the test results forwarded to JMC by CBJ in regards to metal content. Based on these confirmations we will adjust the current plan for testing frequency so that we remain in compliance.

PRICE

The price to CBJ would be \$250.00 per wet ton with the following assumptions:

- \$500,000 to be reimbursed for upfront permitting and startup costs (back would be provided for costs)
- 6,500 tons per year minimum
- 5 year minimum contract
- Inflation 2.5%



DATE: December 1, 2015

TO: Utility Advisory Board

FROM: Rorie Watt, Engineering and Public Works Director
Samantha Stoughtenger, Utilities Superintendent

RE: Biosolids Dryer Cost Estimate, Layout, and Disposal Update

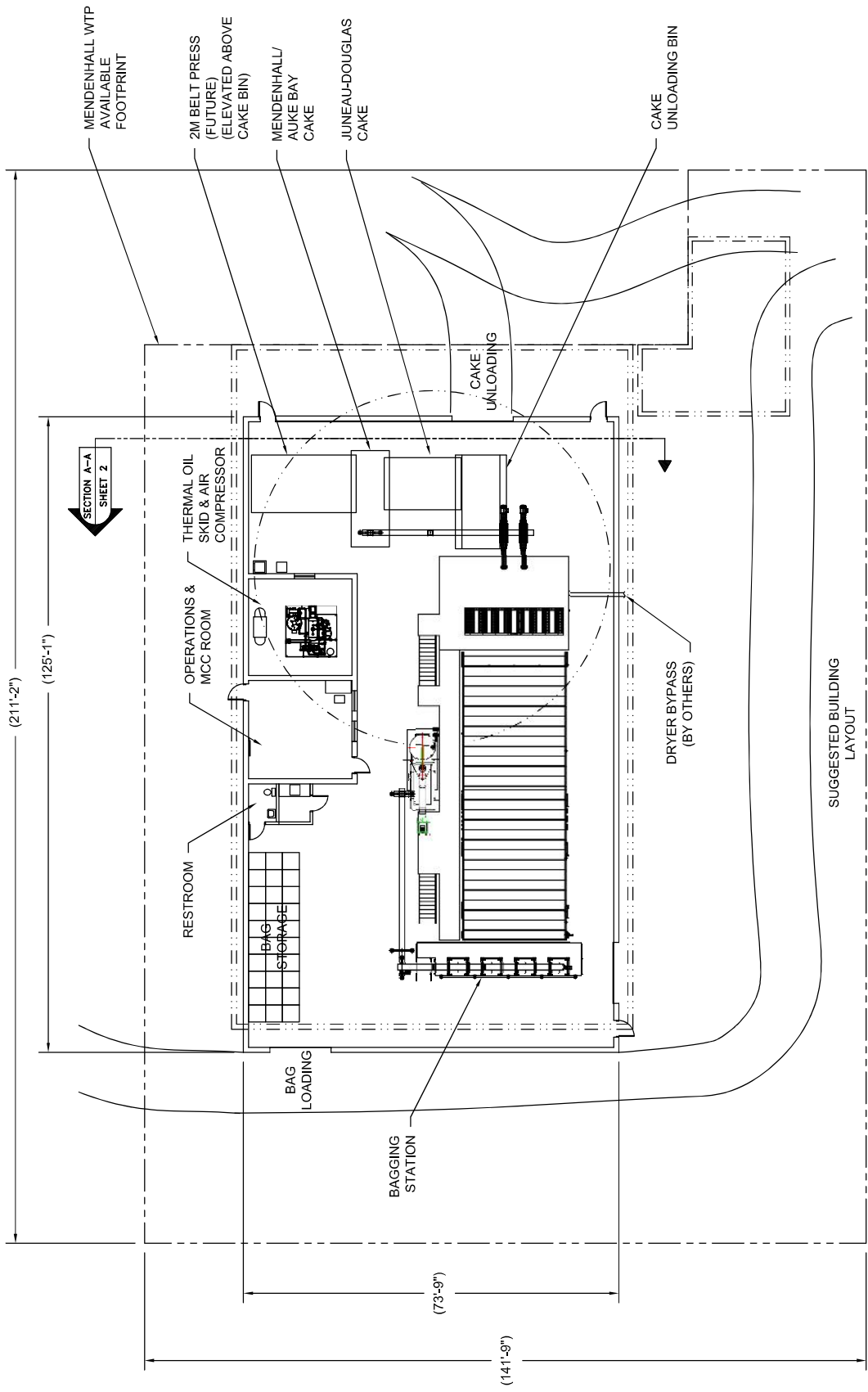
An updated layout of the dryer equipment and facility has been developed by Kruger and CBJ staff. Through efficient layout design and utilization of existing infrastructure, the building size has been reduced by 40% from the original estimate, resulting in significant estimated capital cost savings.

Holding all prior assumptions, the updated project capital cost for the dryer installation is reduced to \$16M with an NPV at 20 years of \$26.9M.

The following information responds to various questions received from the Board about disposal of the dried pellets.

- Dried pellets have an 8% moisture content and can be placed in supersacks, sealable bags at the facility for easy transport or storage.
- Volume of pellets produced is approximately 2000 CY/year.
- Waste Management, Capitol Disposal (Landfill), has indicated that they can use the pellets as an organic soil amendment for the required daily landfill cover and for periodic closure activities year round. CBJ can also use the pellets for municipal turf and re-vegetation projects.
- The O&M estimate in the 20 year NPV chart includes costs of transport and delivery of the product. No revenue is assumed for sale or disposal of the pellets.
- We do not support the inclusion of the manufacturer supplied Energy Recovery System. The system burns the dried pellets to supply heat to run the dryer and has not been proven out at other facilities. We do not support linking of energy recovery with dryer operation. Supply (not installation or building costs) of the energy recovery system at the time of construction is estimated to cost \$3.3M. The conveyance and storage of the pellets is complex, the pellets do not have uniform heat values, and do not burn cleanly – causing intensive maintenance needs. We do not believe it makes sense to couple a cranky heating system with a dryer.
- The pellets do have potential value as an energy source and there may be an opportunity to find and enterprising re-use.

- The concern of contaminants such as pharmaceuticals, personal care products, polymer, hydrocarbons, etc. in the pellets has been researched more for compost than for drying systems. It is not clear which contaminants break down through the drying process. However, dried biosolid pellets are approved by the EPA as fertilizer on agriculture and is the primary method of disposal in the lower 48. We do not recommend distribution of the pellets for residential use or in food production applications, but rather as landfill cover or soil amendments on municipal turf and re-vegetation projects.



NOTES:
 1. SUGGESTED EQUIPMENT ARRANGEMENT. FINAL ARRANGEMENT TO BE DETERMINED.

REV	DESCRIPTION	DATE
C	REVISED LAYOUT, ADDED ACCESS PATHS & SECT A	11.03.15
B	REVISED SUGGESTED LAYOUT	10.26.15
A	PRELIMINARY RELEASE	06.12.15

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VEOLIA
 400 WEST PARKWAY
 SUITE 200
 JUNEAU, AK 99801
 5700102402
 JUNEAU, AK

REV	SHEET	DRAWING NO	SCALE
C	1 of 2	850M-0002	1 : 240

BIOCON
 SITE LAYOUT
 8318 DRYER



DATE: 18 November 2015

TO: UAB Committee

FROM: Rorie Watt, Engineering and Public Works Director
Samantha Stoughtenger, Utilities Superintendent

RE: Utility Rate Model Assumptions

The CBJ Ordinance 2014-36(b)(am), adopted on 30 June 2014, increased the Water Utility Rate 6.5% and Wastewater Utility Rate 8% effective January 1, 2015 and annually on July 1st in 2015, 2016, and 2017. The recommended rate increases resulted from the 2014 FCS Group rate study to finance annual operating budgets for water (\$4.6M in FY15) and wastewater (\$11M in FY15), a \$72M 10-year Capital Improvement Projects (CIPs) list for the critical infrastructural upgrades, and maintain a 30-day operating expense cash reserve.

In the development of this rate model, the consultants assumed the following revenue/funding sources in addition to the utility rate increases already adopted by the CBJ Assembly.

Water

- FY15 - \$1.2M from Passenger Fees
- FY16 - \$1.0M from Revenue Bond Sale
- FY17 - \$1.1M from Revenue Bond Sale
- FY18 - \$425k from Revenue Bond Sale
- FY20 - \$1.8M from Revenue Bond Sale
- FY21 - \$200k from Revenue Bond Sale
- FY23 - \$500k from Revenue Bond Sale
- FY18 through FY24 - 6.5% Annual Utility Rate Increase

Wastewater

- FY19, 20, 21, 22 & 23 - \$4.5M from Special Sales Tax each year (\$22.5M total)
- FY17 - \$2.3M from Revenue Bond Sale
- FY18 - \$19.8M from Revenue Bond Sale
- FY19 - \$150k from Revenue Bond Sale
- FY18 through FY24 - 8.0% Annual Utility Rate Increase

CBJ Wastewater Projected Expenditures and Fund Balance

	<i>CIP Spending</i>	<i>DEC Loans</i>	<i>Transfer of Fund Balance OR Rates to CIP</i>	<i>Bond Sales</i>	<i>Sales Tax</i>	<i>FY Operating Surplus or (Deficit)</i>	<i>Fund Balance</i>
FY15							8,762,657
FY16	15,940,000	12,000,000	3,940,000	-	-	(264,967)	4,557,690
FY17	10,549,578	10,549,578	-	-	-	(1,022,441)	3,535,249
FY18	3,219,800	-	3,219,800	-	-	568,711	884,160
FY19	6,068,906	-	1,568,906	-	4,500,000	1,379,903	695,157
FY20	2,943,108	-	-	-	4,500,000	2,682,226	3,377,383
FY21	3,470,198	-	-	-	4,500,000	1,963,822	5,341,205
FY22	2,673,549	-	-	-	4,500,000	2,532,508	7,873,713
FY23	3,343,714	-	-	-	4,500,000	1,644,555	9,518,268
FY24	3,253,471	-	3,253,471	-	-	377,872	6,642,669

Notes:

- 1) CIP is shown as fully funded

	<i>CIP Spending</i>	<i>DEC Loans/ Grants</i>	<i>Transfer of Fund Balance OR Rates to CIP</i>	<i>Bond Sales</i>	<i>Sales Tax</i>	<i>FY Operating Surplus or (Deficit)</i>	<i>Fund Balance</i>
FY15							4,733,821
FY16	4,330,000	3,000,000	1,330,000	-	-	1,322,025	4,725,846
FY17	2,362,214	-	1,223,165	1,139,049	-	1,094,315	4,596,996
FY18	1,699,339	-	1,276,956	422,383	-	1,127,509	4,447,549
FY19	1,601,344	-	1,601,344	-	-	1,270,201	4,116,406
FY20	3,746,602	-	1,975,772	1,770,830	-	941,947	3,082,581
FY21	2,148,801	-	1,953,008	195,793	-	626,165	1,755,738
FY22	1,754,872	-	1,754,872	-	-	474,489	475,355
FY23	3,574,059	-	3,085,067	488,992	-	187,510	(2,422,202)
FY24	1,557,628	-	1,557,628	-	-	73,137	(3,906,693)

Notes:

- 1) CIP is shown as fully funded



DATE: 18 November 2015

TO: CBJ Assembly

FROM: Rorie Watt, Engineering and Public Works Director
Samantha Stoughtenger, Utilities Superintendent

RE: Biosolids Treatment and Disposal Alternatives Elimination

The Utility Advisory Board (UAB) has been evaluating proposed alternatives for the treatment and disposal of the wastewater biosolids since March 2015. This process entailed a thoroughly vetting of alternatives to applicability, reliability, availability, and expense for use in Juneau.

The following full-scale alternatives recommended for elimination are:

- A. Incineration – USEPA determined that the existing JDTP may not be refurbished under current air quality regulations. Therefore installation costs (\$23M) for a new compliant incinerator eliminated this option from further consideration.
- B. Composting – Due to the SE Alaska rains, indoor or in-vessel composting would be required. Costs to build and land required for such composting facility are high. Additionally, the amount of product generated from a full-scale facility would be significant and more product than could be adequately disposed of. Therefore, it was determined that composting all of the CBJ wastewater biosolids would not be a feasible solution for the community.
- C. Gasification – In addition to evaluating technical and industrial data, UAB members directly contacted various gasification vendors and users. The Board concluded that no one is able to provide this technology for full-scale application yet.

The following full-scale alternatives recommended for consideration are:

- A. Drying – The staff recommended alternative of drying is a reliable technology used throughout the United States. This alternative is more cost effective to install than other technologies (incineration) and produces a high quality (particularly when compared to composting), but small quantity byproduct.
- B. Landfilling – Numerous (unsuitable) sites for landfilling have been proposed and discussed at the UAB. There remain two pieces of property (one in Douglas and one on Chichagof Island) proposed by one contractor for landfilling.



City and Borough of Juneau
Engineering & Public Works Department
155 South Seward Street
Juneau, Alaska 99801
Telephone: 586-0800 Facsimile: 463-2606

TO: Leon Vance, Chair
Utility Advisory Board

DATE: December 1, 2015

FROM: Rorie Watt, Engineering and Public Works Director *DWR*

RE: Biosolids Treatment and Disposal Recommendation

At the 11/5 Utility Advisory Board meeting, the board asked staff to draft a recommended course of action for the UAB for its consideration.

Of all of the options considered, and in light of the best information available, the installation of a biosolids dryer at the Mendenhall WW Plant, complete with an odor control system, is the best available municipally operated option. This dryer option offers the following benefits:

- CBJ Control
- Very Low Risk
- Low Operating Cost (\$800,000/year)
- Least Capital Cost (as compared to other CBJ operated options)

Negative attributes of the dryer appears to be limited to the upfront capital cost (though recent work has provided reason to reduce that estimate to \$16M).

A private contractor has come forward with an interesting private monofill proposal. The proposal would outsource the disposal of the biosolids to a private company (working title Juneau Monofill Company). For a fixed contract price, JMC can secure a large tract of property on South Douglas which is off of the road system. JMC would develop a barge landing and construction grade road and using the existing shipping containers would regularly truck, barge and bury the biosolids on the property. JMC offers a price of approximately \$1.75M/year (depending on actual tonnage) for a minimum of a five year contract. The monofill proposal offers the following benefits:

- Very Little Capital or Up Front Costs
- Support of a Nascent Local Business

Negative attributes could include a general or specific opposition to landfilling, high annual CBJ payments to JMC and a lack of CBJ control of the waste stream.

Recommendation:

As both of these options present radically different Capital and O&M cost approaches, with different policy implications, I recommend that you forward both options to the Assembly. I also recommend that you acknowledge the staff preference for the dryer given the similarity of life cycle costs and the ability for CBJ to control the disposal of the waste stream.