

ATTACHMENT #3



Memorandum

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TO: Patricia deLaBruere
Airport Manager

DATE: August 5, 2014

FROM: Catherine Fritz, AIA
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SUBJECT: Utility Consumption for JNU Terminal

Summary

The Airport Projects Office has gathered utility consumption/cost data for the terminal to better understand the costs of operating the building, and to consider effective energy conservation and cost savings measures. Additionally, the data may allow for new strategies of allocating utility costs amongst tenants in the terminal. The utilities considered in this memo are electricity, diesel heating fuel, water/sewer, and solid waste (garbage).

Electricity

Electricity usage in the terminal consists of power and lighting, including power for the heat pumps. The City and Borough of Juneau's Accounts Payable office receives invoices for electrical usage directly (Airport does not receive the invoice). However, Alaska Light and Power (AEL&P) provides monthly billing information and consumption data, measured in kilowatt hours (KWH) online at its website. The website provides a table that compares the current year's monthly electrical consumption to the previous year and to the average monthly KWH usage of prior years.

The 2010 renovation/addition project of the terminal building was designed with usage zones to separately meter some areas for electrical consumption by tenants in those zones. The terminal's ten meters comprise an internal system that does not report to AEL&P. While AEL&P cannot directly bill from the internal meters, the Airport can monitor tenants' electrical consumption and bill tenants based on the meter readings that are managed through a software program. There are some limitations to the current set-up of the internal meters, but the Airport is working with the electrical engineering firm Haight & Associates to improve its effectiveness.

Diesel Heating Fuel

The Airport Terminal has diesel fired boilers in a hydronic configuration that serve the older portions of the building. The long-term goal is to replace the diesel boilers with ground source (electric) heat pumps. There is one 10,000 gallon buried fuel tank that serves the terminal.

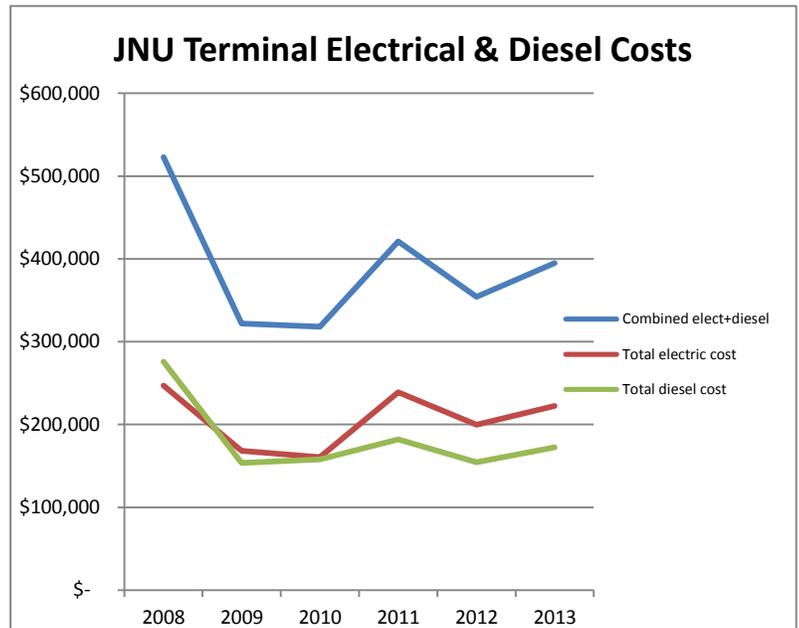
The CBJ Purchasing Office, aka 'Purchasing,' administers the contract for the purchase of all of the CBJ's fuel needs. Currently, the CBJ is riding the State of Alaska contract with Delta Western as its supplier of heating fuel. This is a recent change, effective July 1, 2014, and may or may not be significant when reviewing historical fuel cost data. Riding the state contract is expected to achieve economies of scale and resultant cost savings that would have been, according to Purchasing's estimate, \$42,600 CBJ-wide in FY 2013 had current contract pricing been in effect at that time. Purchasing has advised the Airport that the current contract with Delta Western

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expires at the end of September 2014, but there are two one-year renewal periods that could extend the contract through September 2016. Under the new contract, fuel pricing will be variable, reflecting a price based on an Oil Price Information Service (OPIS) average on the date of delivery.

The Airport does not receive or review the invoices for diesel prior to payment. CBJ Accounts Payable pays the invoices upon receipt. Historically, CBJ Purchasing has supplied reports to all CBJ departments twice each year detailing costs and consumption of diesel by department/user group and tank. Delivery dates are not consistent, and the previous vendor was known to supply fuel to the Airport based on what it had leftover in its truck after other valley deliveries. This helped keep costs down from the supplier, but makes it difficult to identify trends and consumption rates over time since the tank was not filled on a regular basis.

The chart at right illustrates the overall changes in electrical and diesel costs before, during, and after the terminal renovation projects to date.



Water and Sewer

In 2004, the Airport, through a memorandum of agreement with CBJ departments became a “sub-utility,” enabling the Airport to set water/sewer rates that it passes on to its tenants, such rates being independent of utility rates established by the Assembly. In essence, the Airport buys water and pays for sewer service from Public Works, then establishes its own financial structure for recouping those costs from its tenants.

CBJ Utilities provides the Airport water service at the “large commercial client” rate, a discounted price based on the high volume of water consumed at the Airport. There is no similar discount or special rate for sewer service. Water is billed to the Airport through readings of two meters that make up the sub-utility. CBJ Utilities charges the Airport for sewer service based directly on water meter readings. The cost model assumes that all water consumed will ultimately end up in the sewer system.

The Airport property and its tenants are served by municipal water and sewer (except that the Northeast quadrant of the airfield where Temsco Helicopters is located does not have sewer). Most of the Airport’s tenants have water meters, but a few are billed as flat rate. This poses a challenge as the Airport attempts to equitably allocate costs for water and sewer amongst its tenants. Water consumption for metered tenants can be readily determined. For purposes of managing the sub-utility, the Airport terminal building and Airfield shop are metered as if it were a tenant. These two are in-turn allocated to the maintenance and operations budget for appropriate cost center fees.

When Airport property boundary meters were installed in June 2012, a variance between what was metered at the boundary versus what was metered at each tenant meter was detected. This “lost water” or “non-revenue water,” may be due to leakages in the Airport’s water network, a common problem that is difficult to solve, according to the Public Works Department. This affects the cost of both water and sewer, since sewer billings are calculated directly from water entering the sub-utility. Another possible explanation of the lost water is that the

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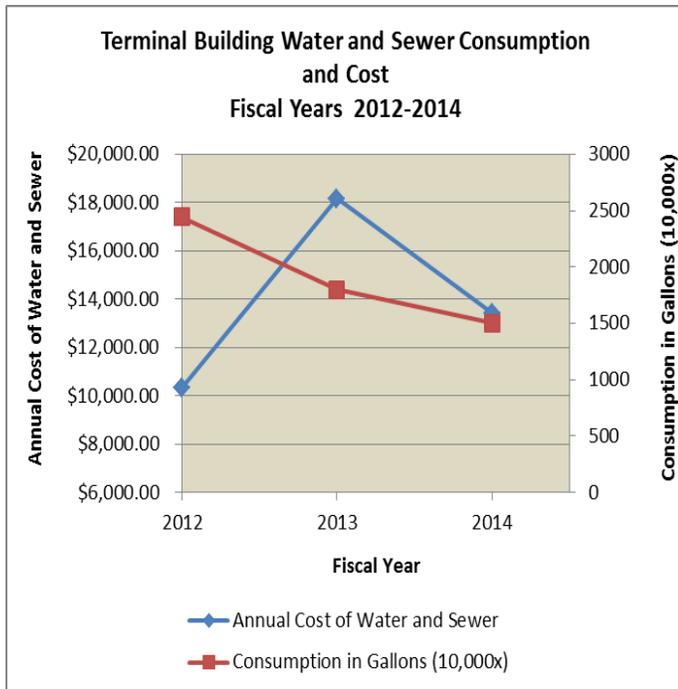
few non-metered water users are using high quantities of water or are leaving hoses/faucets running. Even if the Airport cannot fix the leakage problems, it needs to consider a way to recover the costs of all of the water it buys from CBJ Utilities, whether the water is consumed by the Airport’s tenants or “lost” as the lost water is part of the cost of business and affects the sub-utility’s ability to be self-sustaining.

On June 30, 2014, CBJ approved increases to the CBJ-wide, the rates for both water and sewer. These are scheduled to increase substantially over the next five years beginning January 1, 2015.

Since the Airport terminal building is organized in the sewer/water reports as a tenant, the following table illustrates terminal usage.

Terminal Building Water and Sewer Consumption and Cost by Fiscal Year

Fiscal Year	Gallons (10,000x)	Water Cost	Sewer Cost	Combined Water and Sewer Costs
2012	2447	\$ 3,116.00	\$ 7,200.30	\$ 10,316.30
2013	1800	\$ 4,429.10	\$ 13,729.10	\$ 18,158.20
2014	1505	\$ 3,100.00	\$ 10,328.60	\$ 13,428.60



The chart at left compares consumption to costs and illustrates two anomalies. The water/sewer rates charged to the Airport sub-utility remained constant during the FY 2012-2014 period, which suggests a high correlation between consumption and cost over time. However, despite a trend of decreasing water/sewer consumption at the terminal during that period, costs have not decreased. The terminal has not been financially rewarded for its water conservation.

A second, related anomaly focuses on FY 2012-2013 when sewer costs rose more sharply than water costs. Since sewer costs are based on water consumption, a direct correlation could be expected between the two costs. However, water costs rose 42% while sewer costs rose 91%, at the same time water/sewer consumption decreased by 26%. This is in part due to the installation of property water meters in June 2012 rather than a total estimated use. Additionally, tenants not hooked up to sewer were not backed out as it had been in the past (i.e., urea tank, Temsco, etc.).

Solid Waste (Garbage)

The Airport owns two 30-yard compactors. One is used by the Airport’s food concessionaire, JDA. The second compactor is used for all other terminal solid waste, including Airfield Maintenance's solid waste. Alaska Pacific Environmental Service hauls the waste from the Airport and disposes it at the local landfill. Other airfield tenants must dispose of their own solid waste, using their own dumpsters, or other means.

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Like other utility invoices, the CBJ Accounts Payable office processes invoices for hauling and disposing of the solid waste collected in the Airport’s compacter. The airport does not review or approve invoices prior to payment. Upon request, Accounts Payable can generate records showing payment of past invoices for the most recent years. However, around 2012, the CBJ converted to the Lawson financial system; records prior to that conversion are more difficult to retrieve, read, and interpret.

Solid waste is removed from the Airport on an as-needed basis because they are compactors rather than dumpsters. The irregularity of the timing of solid waste disposal poses a challenge for analyzing monthly and seasonal variations. This challenge is compounded by the delay between the “production” of the waste and the invoice posting date noted by CBJ Accounts Payable.

Although quantities of solid waste, measured by tonnage, are noted in the invoices Alaska Pacific Environmental Service sends to CBJ Accounts Payable, neither the vendor nor the CBJ are set up to generate reports that include that data. Therefore, to determine monthly tonnage of solid waste based on dates of service, the individual hard copy invoices were examined from files in the Accounts Payable Office. This was extremely labor intensive, and demonstrates the need for a more efficient data retrieval system if solid waste is to be analyzed further to consider savings.

The chart below summarizes waste disposal costs and tonnage during FY 2012-2014.



Airport Terminal and Airfield Maintenance staff currently participate in the CBJ office recycling program. It is limited to paper, cardboard, and plastics that are generated by CBJ offices. Alaska Airlines independently recycles waste generated from their jet flights and ground operations, and other tenants make efforts to recycle on a case by case basis.

This is an area currently being looked at for expansion. There are multiple aspects to an Airport-wide recycling program that could include greater public recycling. Recently, public recycling bins have been placed in the Terminal building, but there are still many details to work out to make the program effective and efficient. A comprehensive recycling program has potential to reduce solid waste costs.