



Public Works Committee Agenda

Regular Meeting Wednesday, May 21, 2014 – 6:30PM
City Shop Conference Room

MEMBERS

Joseph A Klejka
Council Rep.
Term Expires
11/2013

Frank Neitz
Chair
Term Expires
12/2013

Scott Guinn
Vice-Chair
Term Expires
12/2014

VACANT
Committee Member
Term Expires
./.

Jennifer Dobson
Committee Member
Term Expires
12/2014

Donna Lindsey
Committee Member
Term Expires
12/2016

Delbert Egoak
Committee Member
Term Expires
12/2015

Bill Arnold
Ex-Officio Member

Betsy Jumper
Secretary/Recorder

AGENDA

- I. CALL TO ORDER
- II. ROLL CALL
- III. PEOPLE TO BE HEARD – (5 Minute Limit)
Mike Nevenzel with ProDev - Pool Update
- IV. APPROVAL OF AGENDA
- V. APPROVAL OF MINUTES
A. Minutes from the previous regular meeting -
April 16, 2014.
- VI. SPECIAL ORDER OF BUSINESS
- VII. UNFINISHED BUSINESS
A. Water & Sewer Master Plan - Bill Arnold
B. Institutional Corridor - Feasibility Study & Funding - Bill Arnold
To decide what to do use the \$7 million on & how far it should go -
Frank Neitz
C. Funding source for Sewer Lagoon & the Dredge - Bill Arnold
D. Unstable Sewer Lagoon Platform - Frank Neitz
E. Establishing a plan of action for a traffic plan for the new Swansons
Store - Frank Neitz
F. Donut Hole options for a shorter route to Tundra Ridge - Bill Arnold
G. Transfer of City Wind Turbine Grant to AVEC
H. Water/Sewer Rate Hike - Frank Neitz
I. RUBA Assessment - When will this possibly be implemented - Frank Neitz
J. AVEC - The Interconnect Agreement for the Pool Wind Mill - Frank Neitz
- VIII. NEW BUSINESS
A. Location of 4th Well for City Subdivision Water Treatment Plant
B. Cigarette Tax Money Funds for the existing Boardwalks, Trails, etc. -
Scott Guinn
- IX. DIRECTOR'S REPORT
- IX. MEMBER COMMENTS
- X. ADJOURNMENT

City of Bethel, Alaska

Public Works Committee Minutes

April 16, 2014

Regular Meeting

Bethel, Alaska

I. CALL TO ORDER

A regular meeting of the Public Works Committee Meeting was held on April 16, 2014 at 6:30 p.m. in the City Shop Conference Room, Bethel, Alaska was called to order by Committee Member Chair Frank Neitz.

II. ROLL CALL

Present: Joseph Klejka, Frank Neitz, Scott Guinn, Delbert Egoak

Excused absence(s): Donna Lindsey, Jennifer Dobson

Unexcused absence(s):

Also in attendance were the following:

Bill Arnold, Interim Public Works Director

Cheryl Roberts, Recorder of Minutes

III. PEOPLE TO BE HEARD

Mike Nevenzel w/ProDev -

Mike updated the committee on the progress of the YK Regional Aquatic Health & Training Center.

IV. APPROVAL OF AGENDA

| | | |
|---------------------|---------------|---|
| MOVED BY: | Joseph Klejka | Motioned carried to approve the agenda. |
| SECONDED BY: | Scott Guinn | |

| | |
|-----------------------|---|
| VOTE ON MOTION | Motion carried by unanimous voice vote. |
|-----------------------|---|

V. APPROVAL OF MINUTES

| | | |
|---------------------|---------------|--|
| MOVED BY: | Joseph Klejka | To approve the minutes of the regular meeting of March 19, 2014. |
| SECONDED BY: | Delbert Egoak | |

| | |
|-----------------------|---|
| VOTE ON MOTION | Motion carried by unanimous voice vote. |
|-----------------------|---|

VI. SPECIAL ORDER OF BUSINESS

VII. UNFINISHED BUSINESS

Item A - Water & Sewer Master Plan

Item B - Institutional Corridor - Feasibility Study & Funding

Item C - Funding source for Sewer Lagoon & the Dredge

Item D - Establishing a plan of action for a traffic plan for the new Swansons Store

Item E - Donut Hole options for a shorter route to Tundra Ridge

Item F - Repair of Dumpsters & Lids

Item G - Review Committee will choose The Pool Management Company on March 17, 2014

Item H - Transfer of City Wind Turbine Grant to AVEC

Item I - Water/Sewer Rate Hike - When will this possibly be implemented

Item J - RUBA Assessment - When will this possibly be implemented

Item K - Possible training program for water/sewer drivers

Item L - RFP on piping for the New Well will be going out on April 28, 2014

VIII. NEW BUSINESS

Item A - AVEC - The Interconnect Agreement for the Pool Wind Mill

Item B - Unstable Sewer Lagoon Platform

Item C - Possible Insurance for Sewer Lagoon Dump Platform

Item D - Main Street Road Repairs near Joe Lomack

IX. DIRECTOR'S REPORT

- See Public Works Monthly Manager's Report

X. MEMBER COMMENTS

Joe Klejka - Good meeting, I said all my comments; thank you Frank, I love our agenda, I think this is the best committee out there.

Scott Guinn - Uh, no, Jenni will listen to the minutes. Congratulations on your baby Jenni, if I don't see ya, & we'll see ya next.

Bill Arnold - No comment

Delbert Egoak - No comments

Frank Neitz - No comments.

XI. ADJOURNMENT

| | | |
|---------------------|---------------|--------------------------------|
| MOVED BY: | Joseph Klejka | Motion to adjourn the meeting. |
| SECONDED BY: | Delbert Egoak | |

| | |
|-----------------------|---|
| VOTE ON MOTION | Motion carried by unanimous voice vote. |
|-----------------------|---|

With no further business before the Committee, the meeting adjourned at 7:48 p.m.

APPROVED THIS _____ DAY OF MAY, 2014

Frank Neitz, Chair

Cheryl Roberts
Recorder of Minutes

Draft Report

Bethel Institutional Corridor Water System Feasibility Study Update

Prepared for
City of Bethel

May 2014

CH2MHILL®

949 East 36th Avenue
Suite 500
Anchorage, AK 99508

Executive Summary

Executive Summary will be prepared after draft review.

Contents

| Section | Page |
|---|------------|
| Executive Summary | iii |
| Acronyms and Abbreviations | v |
| Background | 1-1 |
| 1.1 Authorization | 1-1 |
| 1.2 Purpose and Need for Project..... | 1-1 |
| 1.3 Planning Area..... | 1-1 |
| 1.4 Scope of Study | 1-2 |
| Existing System..... | 2-1 |
| 2.1 City Subdivision WTP | 2-1 |
| 2.2 Existing wells (private) | 2-1 |
| 2.3 Potable Water Storage..... | 2-2 |
| 2.4 Boiler Equipment | 2-2 |
| Design Criteria | 3-1 |
| 3.1 Site Visit | 3-1 |
| 3.2 Corridor Description | 3-1 |
| 3.3 Fire Marshal | 3-3 |
| 3.4 Design Criteria..... | 3-4 |
| 3.5 Easements..... | 3-5 |
| Conceptual Alternatives | 4-1 |
| 4.1 Larsen Alternative | 4-1 |
| 4.2 Other Options Considered | 4-1 |
| 4.3 New Loop from City Subdivision WTP | 4-1 |
| 4.4 Modeling | 4-1 |
| 4.5 Potable Water Storage Requirements | 4-2 |
| 4.6 City Subdivision WTP Improvements..... | 4-2 |
| 4.6.1 Pumps | 4-2 |
| 4.6.2 Boiler System | 4-3 |
| 4.6.3 Electrical Systems | 4-3 |
| 4.7 Sewer Forcemain Extension..... | 4-3 |
| 4.8 Phasing..... | 4-3 |
| 4.9 Future..... | 4-4 |
| Project Elements to be Completed Prior to Design | 5-1 |
| 5.1 Flow Data | 5-1 |
| 5.2 Geotechnical | 5-1 |
| 5.3 Surveying..... | 5-1 |
| 5.4 Permitting | 5-1 |
| 5.5 Easements..... | 5-1 |
| Cost Estimate..... | 6-1 |
| Conclusions and Recommendations..... | 7-1 |
| References..... | 8-1 |

Acronyms and Abbreviations

| | |
|-------|---|
| °F | degrees Fahrenheit |
| AACEI | Association for the Advancement of Cost Engineering International |
| ADD | Average Daily Demand |
| ADEC | Alaska Department of Environmental Conservation |
| APDES | Alaska Pollutant Discharge Elimination System |
| ASCE | American Society of Civil Engineers |
| City | City of Bethel |
| FPS | Feet per second |
| GCPD | Gallons per capita per day |
| gpm | gallons per minute |
| HDPE | high-density polyethylene |
| IBC | International Building Code |
| IC | Industrial Corridor |
| ISO | Insurance Services Office |
| MDD | Maximum Day Demand |
| mgd | million gallons per day |
| PHD | Peak Hour Demand |
| PSIG | Pounds per square inch gauge |
| WTP | water treatment plant |
| YKHC | Yukon-Kuskokwim Health Corporation |

Background

1.1 Authorization

The City of Bethel (City) retained CH2M HILL to develop this Feasibility Study Update. This effort was accomplished under contract, effective February 5, 2014.

1.2 Purpose and Need for Project

The City would like to extend piped water service from the City Subdivision Water Treatment Plant (WTP) to institutional/commercial users located along the Chief Eddie Hoffman Highway. This area, known as the Institutional Corridor (IC), includes many commercial institutions and businesses for the City. The buildings in the IC currently either receive hauled water from the City or maintain private wells. Three of the largest users, the Yukon-Kuskokwim Health Corporation (YKHC) hospital, the Department of Corrections (DOC) Adult Correctional Facility, and the Department of Health and Human Services (DHHS) Youth Correctional Facility, requested that the City pursue piping water to the area.

Bethel continues to experience economic growth as a hub city for southwestern Alaska. Development is expected continue as service industries provide additional jobs. According to the Alaska Department of Labor and Workforce Development, the estimated population increase in Bethel is approximately 1.25%, bringing the 2010 population of 6,080 to nearly 8,300 by 2035.

The City has a mixed system of piped and hauled water. A recent water and sewer cost allocation and rate study estimates that producing and delivering hauled water costs the City about twice as much as piped water while hauled sewage costs approximately six times as much as piped sewer (CH2M HILL, 2013). The City has been working toward replacing hauled water and sewer with a piped system since the first recommendation was published in the 1996 Bethel Water and Sewer Master Plan.

An Institutional Corridor Water System Feasibility Study was completed by Larsen Consulting Group, Inc. in 2010 (2010 Report). Since the first study was published, development has continued to occur in the IC area requiring a study revision. This revision will serve as an update to those items that have changed since 2010. Unless otherwise noted, all other source data is assumed to remain the same.

1.3 Planning Area

The IC is a 0.7 mile stretch of properties adjacent to the Highway and currently extends from the Yukon Delta National Wildlife Refuge Visitor Center & Bookstore to the Regional Public Health Center. The location is shown in Figure 1. Initially, the users of the IC watermain would be primarily institutional and commercial. Areas of interest for future expansion of this watermain include the Blueberry subdivision to the west and development of land to the south.

Draft Report

Bethel Institutional Corridor Water System Feasibility Study Update

Prepared for
City of Bethel

May 2014

CH2MHILL®

949 East 36th Avenue
Suite 500
Anchorage, AK 99508

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|---|------------|
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| 3.1 Site Visit | 3-1 |
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| 3.3 Fire Marshal | 3-3 |
| 3.4 Design Criteria..... | 3-4 |
| 3.5 Easements..... | 3-5 |
| Conceptual Alternatives | 4-1 |
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| 4.6.3 Electrical Systems | 4-3 |
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| ADD | Average Daily Demand |
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| APDES | Alaska Pollutant Discharge Elimination System |
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| City | City of Bethel |
| FPS | Feet per second |
| GCPD | Gallons per capita per day |
| gpm | gallons per minute |
| HDPE | high-density polyethylene |
| IBC | International Building Code |
| IC | Industrial Corridor |
| ISO | Insurance Services Office |
| MDD | Maximum Day Demand |
| mgd | million gallons per day |
| PHD | Peak Hour Demand |
| PSIG | Pounds per square inch gauge |
| WTP | water treatment plant |
| YKHC | Yukon-Kuskokwim Health Corporation |

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1.3 Planning Area

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Existing System

The City of Bethel operates two water treatment plants (WTP) which serve approximately 1,470 customers. 435 of those customers are on piped water systems while over 1,000 receive hauled water. However, the current piped demand is 60% of the total water produced (CH2M HILL, 2013). The City Subdivision WTP provides water for truck-haul operations, government offices and homes in the City Subdivision, the IC, and beyond. The Bethel Heights WTP supports the Bethel Heights subdivision, the high school, and can also provide water for the haul system if necessary.

2.1 City Subdivision WTP

The City Subdivision WTP was constructed in 2000. It was designed to produce 0.5 million gallons per day (mgd) and relies on one groundwater well capable of producing about 400 gallons per minute (gpm). The plant is currently operating at approximately 69 gpm average daily flow to serve the existing piped system and truck-haul operations which is less than 20% capacity. The piped system serves 180 properties within City Subdivision through three Loops (A, B & C). 3,500 to 4,000 gallon trucks are filled roughly twenty times per day.

Water storage at the City Subdivision WTP is in a 60 foot diameter by 24 feet high, 505,000 gallon welded steel tank. The 2010 report states that the tank storage capacity is sufficient for the needs of the existing system only and can store several days' worth of the existing average daily flow of approximately 100,000 gallons per day, as well as meet peaking demands and fire flow requirements. Based on the recommendation of the 2010 report, a second well will be installed in the summer of 2014. The WTP was designed to have a back up well but one was never installed.

The water distribution system in the City Subdivision consists of three heated watermain circulation loops; Loop A, Loop B and Loop C. The water mains are aboveground 6-inch diameter HDPE pipe, featuring insulated arctic pipe construction. According to the City Fire Chief, 990 gpm are available for fire flows in the loops.

2.2 Existing wells (private)

The users in the IC that are not on hauled water service are currently maintaining their own water wells. Based on discussions with IC building owners, this is proving to be an expensive and time consuming task for maintenance staff who are stretched thin at these facilities. The majority of users are very interested in hooking onto piped water service and abandoning their individual wells. Issues cited include: expensive glycol systems for freeze protection, maintaining operator training for water systems for maintenance staff, subsidence at well location, labor hours for water sampling and well maintenance.

Design Criteria

3.1 Site Visit

CH2M HILL staff conducted a site visit and project kick-off meeting with City staff on January 30, 2014. During their visit, they were able to meet with several of the users in the Industrial Corridor study area and discuss expansion plans for new and existing facilities. Several buildings have been built or relocated since the 2010 report was completed. These facilities are listed in Table 1.

TABLE 1
New or relocated buildings in the Bethel Institutional Corridor

| New/Relocated Building | Location | Status |
|--|--|---|
| BNC Kipusvik Movie theatre/restaurant | Adjacent to YKHC administrative offices; east side of highway | Currently under construction; Estimated completion – Summer 2014 |
| 12 YKHC Residential Houses | Adjacent to Post Office; north side of highway | Occupied, hauled water and sewer; Ready to plumb to water and sewer at any time |
| YKHC Medical Records Building | Adjacent to Post Office; north side of highway | Existing building, no water or sewer connection or plumbing currently, construction of fire suppression system anticipated |
| YKHC Phillips Ayagnirvik Treatment Center | Behind Post Office; north side of highway | Currently under construction; Estimated completion – May 2016 |
| YKHC Centering Building | Adjacent to new Pre-Maternal bldg; north side of highway | Currently under construction; Estimated completion – Late 2014 |

3.2 Corridor Description

Currently, the majority of potential customers in the IC would be institutional users with some commercial users. There is land available for development on the south side of the Chief Eddie Hoffman Highway. The City is also interested in the possibility of expansion to nearby areas like the Blueberry Subdivision. Build out capacity will be discussed in Section 3.5. The anticipated connections to the new watermain are listed in Table 2. Water use data for the new facilities has been estimated while actual usage data of the existing buildings collected in 2010 has been used to complete modeling of the proposed system.

TABLE 2
Anticipated Water and Sewer Connections (listed from west to east along Chief Eddie Hoffman Highway)

| Potential Client | Water Use (gal/day) | 2010 Notes | 2014 Notes | Expansions anticipated? | Connected to Sewer? |
|---|---------------------|--|-----------------------------|--|---------------------|
| New movie theatre/restaurant | | | tank, hauled water | | |
| @avartarvik YKHC - @outpatient Hostel | | Served by hospital well | | | Yes |
| YKHC-Annex "800 bldg" | | Served by hospital well | | | Yes |
| YKHC - Keys Receiving Home | | Served by hospital well | Moved behind 800 bldg | | Assume yes |
| YKHC - Hospital | 35,000 | Well with fire protection storage tank | | Yes, future expansion of intake facility | Yes |
| YKHC - Main Administrative Office | | Served by hospital well | | | Yes |
| YKHC - Special Needs Housing | 660 | Hauled water | Additional building in 2014 | | Need to verify |
| Alaska State Fish and Wildlife | 1,100 | Hauled water | Well, no sprinklers | | Yes |

3.3 Fire Marshal

The State Fire Marshal and Plan Review Bureau cover areas of rural Alaska and has affirmed that the City must follow the 2009 Fire Code and the 2010 version of NFPA 13, 20, and 24. These state that a minimum fire flow of 1,500 gpm must be met at the farthest reach of the system.

The City Fire Chief has also requested that the design allow for adequate access to all sides of the buildings. Above ground waterlines must not impede hose layout and fire prevention. The City Fire Department also wants to maintain or improve the City's Public Protection Classification, a point system from the Insurance Services Office (ISO) which rates the City's fire suppression capabilities.

As seen in Table 2, several of the larger buildings in the IC already have water storage tanks with fire suppression systems. The assumption of this study is that the City will be responsible for providing adequate fire flow at the main. The users would be responsible for fire suppression in their buildings.

TABLE 4
Waterline Use Design Criteria

| Component | Criteria |
|-----------------------------|---|
| Peak Hour Demand (PHD) | 4.5 x Annual ADD ² |
| Minimum Pressure | 20 PSIG |
| Maximum Pressure | 100 PSIG |
| Minimum Pipe Diameter | 6 inches |
| System capacity | Fire flow demand will govern. Design based on peak hourly demand (PHD). |
| Pressure Pumps | Design based on peak hourly demand (PHD). |
| Water Heating System | Maintain temperature of return water from distribution system @ 45 to 55 °F. |
| Water Storage Tank | Insulated, welded steel tank. Tank inlet and outlet shall be located to minimize short-circuiting. |
| Circulation Systems | Size system to meet peak hourly demands. |
| Emergency Standby Generator | Required as back up for power outages. |
| Circulation Loops | Provide between 1 - 2 ft/sec flow rate for water distribution loop circulation. ² |

² Cold Regions Utility Monograph, 3rd Ed., 1996.

3.5 Easements

Plats for the IC area were researched for the 2010 study to determine the locations and dimensions of recorded utility easements and existing right of ways. CH2M HILL concurs that additional research, such as Title Searches and Reports should be commissioned prior to design implementation to verify whether or not easements are available along the full alignment. The alignment chosen for this study more closely follows the existing sewer forcemain where easements are already established. Easements will likely need to be obtained behind lots 8, 9, and 10 (from the Prematernal Home to the Sobering Center) and alongside Calista Drive, by the Post Office. Across the highway, there are several existing plats and recorded documents that control the property, but there are also areas where there are no recorded easements. A Utility Agreement will also need to be obtained from ADOT for the pipelines that parallel the Chief Eddie Hoffman Highway.

Conceptual Alternatives

The conceptual alternatives are shown in the attached drawings in Appendix A.

4.1 Larsen Alternative

The 2010 Institutional Corridor Water System Feasibility Study recommended a direct pipeline from the City Subdivision WTP to a 655,000 gallon storage tank and adjacent pump station located in the empty lot between the Public Health Nurse and the Post Office. The pipeline would be heat traced for freeze protection. The storage tank would then feed a circulating loop along both sides of the Chief Eddie Hoffman Highway. The Larsen alternative maintains consistency with the Bethel Water and Sewer Master Plan but discussions with the City indicate that maintaining a water storage tank separate from the WTP is not a desirable option.

4.2 Other Options Considered

A connection to Loop A from the City Subdivision WTP was briefly considered to decrease the length of new pipe installed. However, as Loop A is only a 6-inch line, it does not have sufficient capacity for the required fire flows.

An alternative route along the north side of the Chief Eddie Hoffman Highway was presented to the City for consideration. This option could provide an access point for some of the properties from the front of their properties. The City preferred the back lot line access because easements have already been granted for the existing sewer forcemain.

4.3 New Loop from City Subdivision WTP

The recommended alternative is an 11,000 foot, 8-inch insulated line that loops from the City Subdivision WTP, west along the back of lots, and south to the Chief Eddie Hoffman Highway, see Drawing C-0 in Appendix A. It would then go under the highway through a new road crossing to serve the south side before crossing again through an existing carrier pipe to return to the WTP, Drawing C-0. It is assumed that City ordinances will require one service per lot.

Pipe construction would be similar to the existing lines in Bethel. The lines should be installed with a heat trace channel but the system will be operated as a circulating heated water loop to prevent freezing.

If shifts are increased at the City Subdivision WTP, the construction of a new reservoir can be avoided for this proposed waterline addition.

4.4 Modeling

Modeling confirmed the base assumption that an 8-inch pipeline is needed for the loop. A 6-inch pipe provides insufficient capacity to deliver fire flow to the end of the loop without the line pressure dropping well below the 30 psig hydrant residual requirement or exceeding the maximum loop pressure of 100 psig.

The pipe direction of circulation was modeled in a counterclockwise direction. This direction minimizes system losses as the highest demands are closest to the discharge of the pump, which lowers the average loop velocity.

The loop has the capability to carry at least 130 gpm of extra demand flow, beyond the assumed flow demands, before supply pressure needs to be increased above 50 psig. This flow can be carried to any point in the loop. This extra demand flow can be increased depending on where the flow is withdrawn.

The consideration of additional future demand, or "build out", was also assessed. Build out, a term referencing additional capacity in the pipe loop, is highly dependent on where the additional flows are

4.6.2 Boiler System

After analyzing boiler loads for both average day and peak day, it was determined the boiler and all heat exchangers have adequate capacity for the modeling assumptions.

TABLE 6
Boiler loads

| | Peak Day (Btu/hr) | Average Day (Btu/hr) |
|---|---------------------|----------------------|
| Existing boiler capacity | 2,724,000 | 2,724,000 |
| Raw water preheating for existing loops | (949,990) @ 159 gpm | (413,040) @ 69 gpm |
| Existing loop circulation heating | (565,000) | (565,000) |
| Tank heating | (37,574) | (37,574) |
| Sewer loop heating | (117,700) | (117,700) |
| Building heating | (227,160) | (227,160) |
| Raw water preheating for new loop load | (495,647) @ 83 gpm | (215,499) @ 36 gpm |
| New loop recirculation heating | (129,093) | (129,093) |
| Excess boiler capacity (Btu/hr) | 201,834 | 1,018,934 |
| Excess boiler capacity (%) | 7.4% | 37.4% |

It should be noted that the above results are conservative for a variety of reasons. Recirculation water temperature could be reduced to the minimum treatment process temperature, which would reduce raw water heating demands. Flow balancing using the storage tank could reduce the raw water flow required to be heated. Additionally, heating loads for the tank, sewer lines, and recirculation loops were assumed at heat exchanger stated loads, and as such, probably include excess capacity in the heat exchanger.

The raw water heat exchanger only has 4% excess capacity (when counting new loop's load) under peak day loading during a design winter event. The likelihood of both events coinciding is low, however, so this heat exchanger should be sufficient to serve loads. Additionally, flow balancing or reducing the raw water temperature to 41 degrees would reduce demand at this heat exchanger.

4.6.3 Electrical Systems

The 2010 report stated that no upgrades were needed for the addition of two new pumps. A new investigation was not conducted for this update.

4.7 Sewer Forcemain Extension

Properties on the north side of the Chief Eddie Hoffman Highway have access to the existing sewer forcemain. When the watermain is extended to the south side of the highway, a sewer line should be placed in the same easement so that every building with unlimited access to water also has access to the public sewer. If the existing topography allows, a 6-inch, above ground, sewer line would run by gravity from the west end across from the Public Health Nurse and from the east end near the Fish and Wildlife Center. A lift station at the low point would pump flow through a new road crossing to the existing forcemain on the north side.

4.8 Phasing

The City of Bethel is committed to providing piped water to its population. There are strong drivers for completing the IC water loop as described above. However, the City has limited funds for completing this

Project Elements to be Completed Prior to Design

5.1 Flow Data

A thorough investigation of actual flows for existing buildings should be conducted prior to design. The Water and Sewer rate study also recommended implementation of tracking water production and demand at the WTP for data for future engineering (CH2M HILL, 2013).

5.2 Geotechnical

Previous information and published geologic data indicate fairly uniform subsurface conditions in the area. In undisturbed or undeveloped areas, soils in the upper 1 to 2 feet generally consist of a layer of organic materials (including vegetative matter, topsoil, and muskeg) underlain by loose fine sand, silty sand, and silt. These soils are typically marginally frozen (thermally-sensitive permafrost) below 2 ft. A desktop evaluation performed for the 2010 report determined that shallow and warm permafrost conditions will require foundation designs that reduce the potential for utility damage as a result of permafrost thawing and settlement. Large structures, such as storage tanks, should also be insulated to maintain permafrost integrity. A detailed subsurface investigation should be conducted along the alignment to characterize the existing soils.

5.3 Surveying

CH2M HILL concurs that surveying must be performed to provide topographic information and horizontal location of the existing lines and right of way. Detailed information will be required at road crossings so that elevations can be established for design.

5.4 Permitting

As the state Office of Project Management and Permitting no longer coordinates the Coastal Project Questionnaire (CPQ), it will be the responsibility of the City or its consultant to coordinate with the pertinent regulatory agencies during the design phase. Interested parties which may require notification include the Alaska Department of Fish and Game and the Alaska Department of Natural Resources (ADNR). For any fill placed in wetlands or other waters of the U.S., the City will contact the US Army Corps of Engineers for approval under the General Permit issued to the City for activities including creating foundation pads for structures and utilities.

As stated in the 2010 report, an ADOT/PF Utility Agreement permit will likely be required for any road crossings on state property or for construction in the Highway right-of-way. An ADEC Approval to Construct and Operate will also be required.

5.5 Easements

As stated in Section 3.5, suitable easements and rights-of-way must be confirmed or established, as necessary, prior to design. Easements established for the sewer forcemain may need to be widened to accommodate two pipelines. Use of the State of Alaska's Right-of-way along the south side of the Chief Eddie Hoffman Highway should be coordinated with ADOT/PF by obtaining a Utility Agreement.

SECTION 6

Cost Estimate

The cost estimate was completed on a conceptual plan and is considered a Class 4 Estimate with an accuracy range of -30% to +50%. The project completion costs include construction, City administration, design, and construction support services. The cost range is shown in Table 7.

TABLE 7
Bethel IC Watermain Project Completion Cost Accuracy Range

| | Capital Total | Accuracy High Range +50% | Accuracy Low Range -30% |
|-------------------------|---------------|-----------------------------|----------------------------|
| Project Completion Cost | \$10,547,000 | \$15,820,000 | \$7,383,000 |

A total project cost estimate for the complete loop, WTP improvements, and a new sewer main was completed. As explained in Section 4.8, the total project costs exceed the available funds and the project will need to be completed in at least one additional phase.

SECTION 7

Conclusions and Recommendations

References

Appendix A
Schematic Drawings



100 Hedstrom Drive
 Ashland, OH 44805
 Toll Free: 888-434-5891 / 419-289-9310
 Fax: 419-281-3090

QUOTE

| | |
|-----------|------------|
| Date | Estimate # |
| 4/16/2014 | 697-041614 |

| | |
|-----------|-----------|
| QUOTE BY: | Mark Conn |
| SHIPPING | |
| FRT QTE# | |

| |
|---|
| NAME / ADDRESS |
| City of Bethel Port Director- Peter Williams 907 .54302310 or 907- 545-4150 pwilliams@cityofbethel.net |

| | | | Terms | FOB |
|--|-------------------|-----|--------------|-------------------|
| NOTE: Please make Checks Payable to: BALL,BOUNCE & SPORTS,INC. | | | | |
| Item | Description | Qty | Rate | Total |
| 6Y061 | 6 YARD FRONT LOAD | 4 | 961.00 | \$ 3,844.00 |
| 8Y081 | 8 YARD FRONT LOAD | 4 | 1176.00 | \$ 4,704.00 |
| Quote valid for 60 days. Thank you for considering Nuwave Container! | | | Total | \$8,548.00 |

NUWAVE CONTAINER

A PRODUCT OF HEDSTROM PLASTICS

NUWAVE UNIBODY CONTAINERS



Setting new standards for manufacturing integrity, Nuwave rotationally molded Unibody containers feature integrally molded-in pockets and hinges. Available in many sizes, their innovative design embodies true strength, durability and quiet operation.

Headquartered in Ashland, Ohio, Nuwave Container is a division of Hedstrom Plastics/Ball, Bounce & Sport, Inc. Hedstrom is a member of the Association of Rotational Molders and is ISO 9000:2008 certified. Because of its storied history as a custom rotational molder Hedstrom Plastics has made a name in the plastics industry for quality products and service.

Hedstrom Plastic offers custom molding solutions with materials including; molded polyethylene, flexible pvc, polypropylene moldings, nylon molding, thermoplastic urethanes. Capabilities include project management with design and development engineering services, CAD programs, assembly services, including trimming, drilling, router work, spin weld fittings, threaded inserts, in-mold labeling, product assembly and packaging, customized quality assurance.

Hedstrom operates three plastic manufacturing facilities with a total of 232,000 square feet, equipped with 31 rotational molding machines. Other plastics processing equipment includes 5-axis CNC twin table routers, liquid and dry color blending equipment and polyethylene foam filling equipment. Thanks to its large rotomolding facilities, Hedstrom is also able to provide in-house maintenance on all plastic molds, PVC plastisol compounding and polyethylene storage systems.

The Nuwave Container line focuses directly on providing quality products for the solid waste industry. The Unibody™ design is unique in the sense that the entire dumpster is a solid piece of plastic, giving it a structural integrity unseen anywhere else.

NUWAVE CONTAINER

A PRODUCT OF HEDSTROM PLASTICS

NUWAVE UNIBODY CONTAINERS

**Plastic Dumpsters
Ranging in Size From
1-8 Cubic Yards**



Nuwave Features

- One-piece HDPE Unibody construction
- Up to 50% lighter than steel containers
- Substantially quieter than metal bins
- Dent resistant
- UV protected against damaging effects of sun
- 100% recyclable



Nuwave Benefits

- No painting required
- Won't rust or leak
- No weld repairs
- No bottom replacement
- Stackable for easy shipping and storage
- Easy to clean and graffiti resistant



100 Hedstrom Drive • Ashland, Ohio 44805 • Office (855)556-6755 • Fax (419) 281-3090

www.nuwavecontainer.com

1 YARD



4 YARD



1.5 YARD



6 YARD



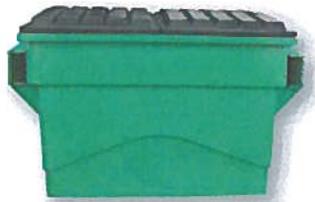
2 YARD



7 YARD



3 YARD



8 YARD



**1 1/2, 2 & 3 YARD
Rear Loaders**



Ideal for use with...

- Restaurant waste
- Food/Organic waste collection
- Noise sensitive areas
- Environmentally sensitive areas
- Push outs
- Humid, tropical environments
- Agricultural applications
- Front load collection
- Rear load collection



Options

- Custom colors available
- Lock bars
- Custom permanent logo
- Drain plugs
- Various caster styles available





Dark Blue



Blue



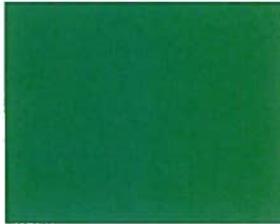
Gray



Brown



Forest Green



Green



Black



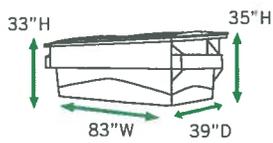
Tan

Containers are available in 8 standard colors. Custom colors available upon request.

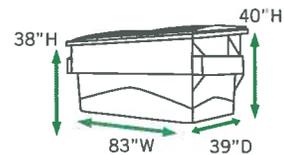
Colors shown may vary slightly from actual product.

| MODEL | WIDTH | DEPTH | FRONT HEIGHT | MAX HEIGHT | LOAD RATING | TRUCKLOAD QTY | PRODUCT WEIGHT |
|-------------|-------|-------|--------------|------------|-------------|---------------|----------------|
| 1.5 YARD RL | 78" | 32" | 48" | 53" | 750 LBS | 55 | 225 LBS |
| 2 YARD RL | 78" | 58" | 48" | 53" | 1000 LBS | 55 | 240 LBS |
| 3 YARD RL | 78" | 58" | 54" | 58" | 1500 LBS | 55 | 280 LBS |
| 1 YARD FL | 83" | 39" | 33" | 35" | 750 LBS | 70 | 180 LBS |
| 1.5 YARD FL | 83" | 39" | 38" | 40" | 750 LBS | 70 | 200 LBS |
| 2 YARD FL | 83" | 40" | 48" | 58" | 1000 LBS | 42 | 210 LBS |
| 3 YARD FL | 83" | 50" | 52" | 66" | 1500 LBS | 36 | 300 LBS |
| 4 YARD FL | 83" | 60" | 55" | 69" | 2500 LBS | 20 | 350 LBS |
| 6 YARD FL | 83" | 76" | 48" | 69" | 3500 LBS | 16 | 475 LBS |
| 7 YARD FL | 83" | 76" | 55" | 76" | 4200 LBS | 16 | 590 LBS |
| 8 YARD FL | 83" | 76" | 62" | 83" | 5000 LBS | 16 | 640 LBS |

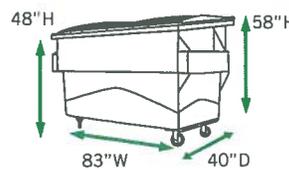
* Container specifications vary slightly based on product mold and are subject to change without prior notice.



1 YARD FL



1.5 YARD FL



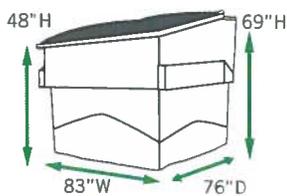
2 YARD FL



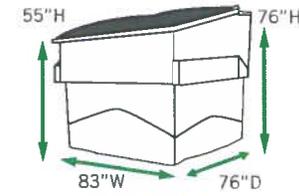
3 YARD FL



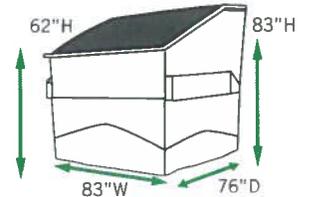
4 YARD FL



6 YARD FL



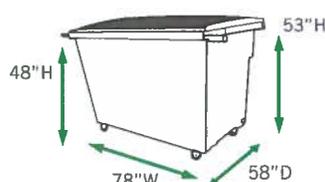
7 YARD FL



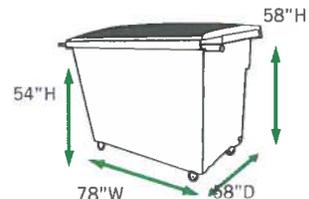
8 YARD FL



1.5 YARD RL



2 YARD RL



3 YARD RL



VILLAGE SAFE WATER

CH2MHILL

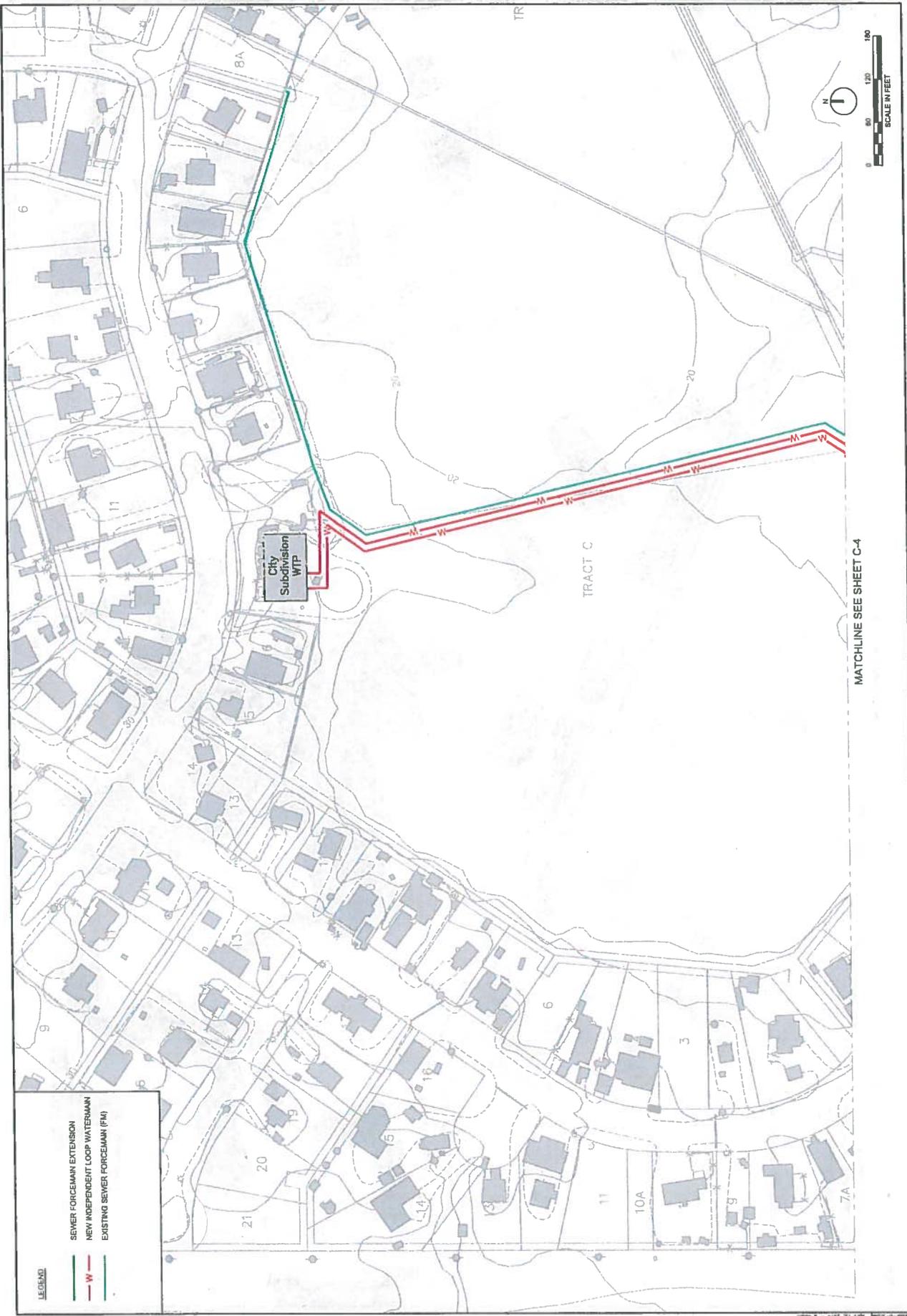
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Bethel, Alaska
NEED NEW NAME
OF PROJECT

| REVISION | BY | DATE |
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Project No. 2014-0001
 Date MAY 2014
 Designed K. Weber
 Drawn R. Brinkley
 Approved T. Boyd

Sheet No. C-5
 Project No. 2014-0001



LEGEND

- SEWER FORCEMAIN EXTENSION
- NEW INDEPENDENT LOOP WATERMAIN
- EXISTING SEWER FORCEMAIN (FM)



VERITY SCALE
 1" = 100'-0"
 1" = 200'-0"
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MEMORANDUM

DATE: 05/01/2014
TO: Pete Williams, Interim City Manager
FROM: Bill Arnold, Interim Public Works Director
SUBJECT: Manager's Report

Programs/Divisions

Public Works Director:

Utility Maintenance:

This month we responded to seven after hour callouts, all of them in City Sub. We also started leveling and flushing sewer lines in ASHA housing .We also gave Road Maintenance a hand thawing culverts out with steamer. Our water plants continue to operate on a daily basis. We also continue to monitor our liftstations daily. We continue to Blue Tag customers for our Utility Billing Department.

Hauled Utilities:

Another month has come and gone!! This month we start clean up, green up. There is still an issue with contractors and homeowners throwing copious amounts of lumber, as well as stoves, refrigerators, furniture and some hazardous things like oil, fuel, gas, and batteries, and tires into the dumpsters. Or they just throw it onto the ground surrounding the dumpsters.

I was hoping to start a new schedule this month, 4 consecutive 10 hour days, with three consecutive days off, for the water, sewer and garbage crew, however, we just don't have the manpower at this point.

Although, it had been getting better, prior to April, there is still a gap in the hauled utility truck repair system. Whether, it is the fault of the driver, the road conditions, or the environmental conditions, the fact remains the trucks need to be repaired, in order for the hauled utilities department to service the community.

Also, the dumpsters are in dire need of repairs at best and/or replacement at worst. The bottoms are starting to come out of many of them. As well as many, lids are either broken or missing in some cases. I am going to check with the schools to see if there could be an in-kind service for the welding educators/students to do some repairs for dumpster service for their particular establishments.

Lastly I am still in need of some more applicants with C.D.L.'s for the Hauled Utilities Department. I would also like to thank the Road Maintenance and the Landfill for the use of their manpower, from time to time, to fill-in for drivers for the hauled utility department.

Property Maintenance:

Building checks are made every day to monitor heat with the changing of the seasons, adjusting winter settings to summer. There are always issues with windows and doors now that we are going from winter to spring with the movement of the foundations and having to service the hardware that has reached its useful life span. The fluorescents lights keep us busy with having to upgrade from the T-12s, which they no longer make, to T-8's, which are more energy efficient when we have to replace bulbs and ballast.

Repairs were made to the Youth Facility with the break in there. Steel bars were added over the windows to prevent any more access through that area. Repairs are also being made to the boardwalks throughout town. Health and Safety items are being addressed at Public Works and in all our buildings to prevent any problems.

We are getting ready to start some preventative maintenance projects to keep problems to a minimum. Thank you.

Road Maintenance:

Streets and Road has been steaming culverts for the past three weeks with two steamers. The larger red steamer has been broke down more, than it has been running for the first week and half. The two steamers we have are over 32 years old, so in the next year or so, we will need to look at maybe getting a new steamer to replace one of the old steamers. We are now pretty much caught up on the culverts this spring, with just a few left. With no snow left to melt, and no rain this spring, so far, has made it a lot easier, steaming the culverts with not much water.

Streets and Roads has also been hauling in sand and gravel in order to make the roads a lot smoother, after the roads thawed out this spring the has been a lot more muddier this year, then in years past. This was cause from all the rain that we got last fall, and also throughout the winter on the roads that froze. But the roads did dry out a lot quicker this spring with no rain so far.

Streets and Roads now has the D8N dozer out at the city sand pit, and also stated pushing up a pile of sand. We will push sand at the city sand pit as it thaws, and will keep working at it until we have a big pile of sand.

Streets and Roads now has the water pump set up in Brown's Slough on Ptarmigan Street, and we have now started watering roads with the road watering truck in order to keep the dust down. In the next few days, we will be laying down some Calcium Chloride on some of the main road to help keep the dust down, and also it helps keep the road smoother longer. We have 26- 2000 lb. bags of Calcium from last year, and will used these on the roads that are used more.

Vehicles and Equipment:

We have been very busy lately with servicing and tire changes of the smaller vehicle fleet. The change over from the winter studded tires back to the summer tires has been filling up about 90% of our daily schedules these past few weeks.

We are feeling the effects of being shorthanded, which is also a safety issue of not having enough employees to cover the full workload on a regular daily basis and hope that we can possibly look at hiring another mechanic for our dept soon. At times we are finding it hard to keep up with some of the small repairs like brake adjustments and light bulb replacements as well as services and greasing of our big trucks. We have also been trying to get our work areas cleaned up and reorganizing our work stations and our parts supply room to help eliminate some safety issues and ease of reorganizing our parts inventory. We have received a list of safety issues that we have been trying to complete also to comply with a possibility of an OSHA inspection, which has also taken up a lot of our departments' time away from vehicle repair to help with this task over the past couple of weeks. Now with that stuff about completed and out of the way we are able to get the mechanics back to getting caught up with work orders and the regular maintenance.

Transit System:

For the March, 2014, the Bethel Transit System transported a total of 1845 passengers, compared to last year this shows an increase of 778 riders, about 53%. Of these, 153 of those riders had disability, and approximately 367 were elders. In April of 2014 there were 382 monthly passes. The use of the \$5 Day Pass has caught on and we sell 15 to 20 Day Passes each day. The Saturday Route, 5 hours has dropped the past couple of Saturdays and if it continues this way we will stop it for the summer. On a daily bases about 75-80% of the passengers are regular riders, they ride once or twice every day.

The buses, #436 /#437 and #438, are really beginning to show their age and the affects of the roads / weather conditions in Bethel. Unfortunately a lot of the problems with the buses are "hidden" and aren't discovered until it's too late and the bus is down for weeks waiting for parts. When I was checking the lug nuts on the rear wheels of bus #438, the small gas bus, one of the nuts and part of the lug bolt came off in my hand. I check all the other lug nuts and they were okay.

However I asked the City Shop to order new lug bolts / nuts for both of the rear wheels and while they were putting them in they discovered there were problems with the brakes and brake pads. Bus #437 has been in the shop for over two weeks replacing the fuel injectors.

I'm sure this is just the tip of the ice berg, not only on bus #438 and 437 but the other bus as well. We're real lucky and have been able to order a new bus and it

should arrive on this summer barge. The new bus is a 12 passenger bus with a flip down seat that will accommodate two more passengers for a total of 14, plus a wheel chair passenger. It's a gas bus and two wheel drive. It will be lower and easier for elderly people to get in.

Our Part-Time Driver resigned and took a full time job with the City's Public Works Utility Department. I promoted the On-Call Driver into that Part-Time Driver position and we're advertising for a new On-Call Driver. It will be difficult to fill this position, with the budget reduction (cut), they will only work 5-8 hours per week and receive no benefits. I've been filling in during the week and driving also on Saturday.

The City Council is in the process of reviewing the Bethel Public Transit System FY 15. There is considerable amount of difference between the FY 13, FY 14 and the purposed FY 15 budget. I will need to wait for the City Council's final approval of the budget before I can make adjustments for FY 15.

Bill Ferguson
Transit Manager

Landfill / Recycle Center:

I am so glad April is over because this has been mud city, which is always a trial in spring time at the Landfill. We continue to cover trash with mud, dirt and sand. With that being said, DEC should be a lot happier with us this year. The Construction of the new store, the pre-maternal home and the pool has brought a lot of construction debris to us.

We are trying to hire a new person for the Recycle Center as Larry had to quit due to health issues.

Staffing Issues/Concerns/Training:

The Hauled Utilities Dept is down a total 2 Water/Sewer Drivers.

Budget/Financial:

See each Department.