



City of Bethel

P.O. BOX 1388

Bethel, Alaska 99559

Phone: 907- 543-2047

Fax: 907-543-3781

Regular City Council Meeting

Tuesday, January 12, 2016

6:30 P.M.

Council Chambers; Bethel, Alaska



**City Council Meeting Agenda
Regularly Scheduled Meeting
January 12, 2016 – 6:30 pm
City Hall 300 State Highway, Bethel, AK
City of Bethel Council Chambers**

Rick Robb
Mayor
Term Expires 2017
543-1879
rrobb@cityofbethel.net

Byron Maczynski
Vice-Mayor
Term Expires 2017
545-0970
bmacyznski@cityofbethel.net

Leif Albertson
Council Member
Term Expires 2017
543-2819
lalbertson@cityofbethel.net

Chuck Herman
Council Member
Term Expires 2017
545-5394
cherman@cityofbethel.net

Zach Fansler
Council Member
Term Expires 2017
545-3300
zfansler@cityofbethel.net

Nikki C. Hoffman
Council Member
Term Expires 2017
545-6653
nhoffman@cityofbethel.net

Alisha Welch
Council Member
Term Expires 2017
545-6026
arwelch@cityofbethel.net

Ann Capela
City Manager
543-2047
acapela@cityofbethel.net

Lori Strickler
City Clerk
543-1384
lstrickler@cityofbethel.net

Patty Burley
City Attorney

Mary Sattler
Lobbyist

- I. CALL TO ORDER**
- II. PLEDGE OF ALLEGIANCE**
- III. ROLL CALL**
- IV. PEOPLE TO BE HEARD – Five minutes per person**
- V. APPROVAL OF CONSENT AGENDA AND REGULAR AGENDA**
- VI. APPROVAL OF MEETING MINUTES**
 - a) *12-8-2015 Regular Meeting Minutes P2
- VII. REPORTS OF STANDING COMMITTEE**
 - a) Public Safety and Transportation Commission
 - b) Port Commission
 - c) Planning Commission
 - d) Parks, Recreation, Aquatic Health And Safety Center Committee
 - e) Finance Committee
 - f) Energy Committee
 - g) Public Works Committee
 - h) Marijuana Advisory Committee
 - i) Non-Standing Committee Reports
 - j) Transit Advisory Board Report
- VIII. SPECIAL ORDERS OF BUSINESS**
 - a) United Pools Presentation (Mayor Robb)
- IX. UNFINISHED BUSINESS**
 - a) Public Hearing On Ordinance 15-21: Amending Bethel Municipal Code 5.30, Taxicab, River Taxi, Limousine And Bus Permits, To Requires Video Camera Surveillance System And Global Positioning System Capabilities (Council Member Springer) P37
 - b) Public Hearing Of Ordinance 15-35: Alaska Marine Lines Lease Agreement For Warehouse, City Dock (City Manager Capela) P52
 - c) Public Hearing Of Budget Ordinance 15-14 (a): Amending The Adopted Fiscal Year 2016 Annual Budget (Mayor Robb) P54
- X. NEW BUSINESS**
 - a) *Resolution 16-01: Supporting The State Of Alaska Fiscal Year 2017 Capital Funding Appropriation To Lower Kuskokwim School District (Mayor Robb) P58
 - b) *Resolution 16-02: Addition To The State Of Alaska Capital Request For Funding In Fiscal Year 2017, Recovered Heat Project (City Manager Capela) P59

Agenda posted on January 5, 2016, at City Hall, AC Co., Swanson's, and the Post Office.

Lori Stickler, City Clerk

(Items on the agenda noted with an asterisk (*) are considered the consent agenda.

All Resolutions noted with an asterisk (*) will automatically be adopted on the consent agenda unless removed from the consent agenda by Council. Ordinances introduced with an asterisk (*) on the consent agenda will automatically be introduced and set for **Public Hearing January 26, 2016**)



**City Council Meeting Agenda
Regularly Scheduled Meeting
January 12, 2016 – 6:30 pm
City Hall 300 State Highway, Bethel, AK
City of Bethel Council Chambers**

- c) *Introduction of Budget Ordinance 15-14 (b): Amending The Adopted Fiscal Year 2016 Annual Budget To Account For The Purchase Of Laptops For City Council Members (Council Member Hoffman) P61
- d) *Introduction Of Ordinance 16-01: Establishing A Limited Moratorium On Commercial Marijuana (Council Member Fansler) P63
- e) *AM 16-01: Appointment Of Delbert Egoak To The Public Works Committee (Mayor Robb) P69
- f) *AM 16-02: Approving The 2016 Regular Meeting Dates For The City Council (Mayor Robb) P70
- g) AM 16-03: Directing Administration To Submit Phase 1 Application for Remote Alaska Communities Energy Efficiency Competition And To Begin Planning For Phase 2 Submission (Council Member Herman) P71
- h) AM 16-04: Approval Of Two Council Members To Travel To The National League Of Cities Annual Conference (Mayor Robb) P226
- i) *AM 16-05: Appointment Of Brian Lefferts To The Parks, Recreation, Aquatic Health And Safety Center As An Alternate Member (Mayor Robb) P227
- j) IM 16-01: Update On The Status Of The Killbuck School Fire (Council Member Welch) P228
- k) *Administrative Leave Approval For City Manager To Attend The Nation League of Cities Annual Conference (City Manager Capela)
- l) City Manager's Goals (City Manager Capela) P233
- m) Consideration Of Local Businesses Using A System To Track Sales Taxes (Vice-Mayor Maczynski)
- n) *Personal Leave Request For City Attorney, February 5, 8 And March 23 Through April 4 (Mayor Robb)
- o) *Personal Leave Request For City Clerk, January 22 And 25 (Mayor Robb)

- XI. MAYOR'S REPORT**
- XII. MANAGER'S REPORTS**
- XIII. CLERK'S REPORT**
- XIV. COUNCIL MEMBER COMMENTS**
- XV. ADJOURNMENT**

Agenda posted on January 6, 2016, at City Hall, AC Co., Swanson's, and the Post Office.

Lori Stickler, City Clerk

(Items on the agenda noted with an asterisk (*) are considered the consent agenda.

All Resolutions noted with an asterisk (*) will automatically be adopted on the consent agenda unless removed from the consent agenda by Council. Ordinances introduced with an asterisk (*) on the consent agenda will automatically be introduced and set for **Public Hearing January 26, 2016**)

Approval of the Meeting Minutes

I. CALL TO ORDER

A Regular Meeting of the Bethel City Council was held on December 8, 2015 at 6:30 p.m., in the council chambers, Bethel, Alaska.

Vice-Mayor Maczynski called the meeting to order at 6:33 p.m.

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL

| Comprising a quorum of the Council, the following members were present: | |
|---|--|
| <input checked="" type="checkbox"/> Mayor Rick Robb (participated telephonically) | <input checked="" type="checkbox"/> Council Member Zach Fansler |
| <input checked="" type="checkbox"/> Vice-Mayor Byron Maczynski | <input checked="" type="checkbox"/> Council Member Chuck Herman |
| <input checked="" type="checkbox"/> Council Member Alisha Welch | <input checked="" type="checkbox"/> Council Member Nikki Hoffman |
| <input checked="" type="checkbox"/> Council Member Leif Albertson | |
| Also in attendance were the following: | |
| <input checked="" type="checkbox"/> City Manager Ann Capela | <input checked="" type="checkbox"/> City Attorney Patty Burley |
| <input checked="" type="checkbox"/> City Clerk Lori Strickler | <input checked="" type="checkbox"/> |

IV. PEOPLE TO BE HEARD

Grant Fairbanks- Stated concerns of the upcoming situation with alcohol sales within the community of Bethel. Asked the Council to come up with a game plan, potentially a committee to establish a strategies if the alcohol sales fail.

Mark Hoelsken- A Jesuit priest who works here in Bethel. Asked the Council to work on a strategy for dealing with what alcohol sales may bring to the community.

Mary Nanuwak- Stated the Council must be working on a strategy to help offset the potential hazards related to alcohol sales in Bethel.

V. APPROVAL OF THE CONSENT AND REGULAR AGENDA

Main Motion: Approve the Consent and Regular Agenda.

Moved by: Herman
Seconded by: Robb
Action: Motion carries by a vote of
In favor: Robb Maczynski Welch Albertson Fansler Herman Hoffman
Opposed: -0

Council Member Hoffman and Council Member Welch declared a conflict of interest on Resolution 15-18: Disposition of City Personal Property in an Amount Less than \$5,000 to Orutsararmiut Native Council.

Mayor Robb will rule on the conflict of interest during the consideration of the items.

**Removal
from the
Consent
Agenda:**

New Business Item B Introduction of Budget Ordinance 15-14 (a) and New Business Item C Resolution 15-18.

Moved by: Robb

VI. APPROVAL OF THE MEETING MINUTES

Item A – 11-24-2015 Regular Meeting Minutes

Approved on the consent agenda.

VII. REPORTS ON STANDING COMMITTEES

Public Safety and Transportation Commission

Council Representative, Chuck Herman –

A plan from the Commission for the restructuring of the Police Departments operations.

Port Commission

Port Director, Pete Williams –

A meeting has not been held since the last City Council Meeting. They will meet on December 21.

Planning Commission

Council Representative, Nikki Hoffman-

A meeting has not been held since the last City Council Meeting. They will meet on December 10.

Parks Recreation Aquatic Health and Safety Center Committee

Committee Vice Chair, Judy Wasierski –

Discussed and approved a recommendation to designate the trails improvement fund of \$70,0000 to address safety concerns on the currently-used boardwalks.

Discussed and approved a recommendation to the City Council to allocate a portion of the tobacco tax to construct an at-grade boardwalk between the hospital and the college.

Will work with pool facility to hopefully maintain an adequate temperature of water within the pool.

Will work with fitness center staff on ads, posters, marketing and communications with the public.

Finance Committee

Council Representative Leif Albertson –

A meeting has not been held since the last City Council Meeting.

Public Works Committee

Vice-Mayor, Byron Maczynski-

A meeting has not been held since the last City Council Meeting.

Energy Committee

Council Representative, Zach Fansler –

A meeting has not been held since the last City Council Meeting.

Marijuana Advisory Committee

Council Representative, Zach Fansler –

The Committee reviewed the rules and regulations approved by the State's Marijuana Board.

Will be meeting on Thursday, December 10.

VIII. SPECIAL ORDER OF BUSINESS

Item A – United Pools Presentation.

Raunika Ray provided a report to the City Council.

The annual maintenance took place in November, there were two weeks of closure for the pool however the facility remained open much of the time for the weight room and fitness rooms.

During the annual maintenance the facility had a replacement of chemical relays; one of the pumps wasn't working properly which was fixed. The pool company will be out December 14 to look into other issues.

Put down new rubber flooring in the fitness room.

The pool was acid washed, drained and cleaned.

Suggested, due to the cold temperatures that the pool maintenance take place in August after the kids go back to school.

IX. UNFINISHED BUSINESS

Item A – Public Hearing On Ordinance 15-19: Amending Bethel Municipal Code 5.40.070, Chauffeurs, Carrying Alcoholic Beverages And Controlled Substances And Repealing Bethel Municipal Code 5.40.080 Chauffeurs, Carrying Alcoholic Beverages.

*Vice-Mayor Maczynski opened the public hearing.
No one present to be heard.
Vice-Mayor Maczynski closed the public hearing.*

Main Motion: Adopt Ordinance 15-19.

Moved by: Fansler
Seconded by: Albertson
Action: Motion does not carry by a vote of 0-7
In favor: 0
Opposed: Robb Maczynski Welch Albertson Fansler Herman Hoffman

Main Motion: Postpone indefinitely.

Moved by: Herman
Seconded by: Hoffman
Action: Motion does not carry by a vote of 3-4
In favor: Welch Herman Maczynski
Opposed: Robb Albertson Fansler Hoffman

Main Motion: Strike in 5.40.070 subsections D and E.

Moved by: Hoffman
Seconded by: Fansler
Action: Motion does not carry by a vote of 2-5
In favor: Albertson Hoffman
Opposed: Robb Maczynski Welch Fansler Herman

Item B – Public Hearing On Ordinance 15-20: Amending Bethel Municipal Code 5.20.120 F, Transportation Industry, General Provisions, Penalties And Remedies.

*Vice-Mayor Maczynski opened the public hearing.
No one present to be heard.
Vice-Mayor Maczynski closed the public hearing.*

Main Motion: Adopt Ordinance 15-20.

Moved by: Fansler
Seconded by: Hoffman
Action: A motion to adopt Ordinance 15-20 was not made.

Item C – Public Hearing On Ordinance 15-21: Amending Bethel Municipal Code 5.30, Taxicab, River Taxi, Limousine And Bus Permits, To Requires Video Camera Surveillance System And Global Positioning System Capabilities.

Vice-Mayor Maczynski opened the public hearing.

No one present to be heard.

Vice-Mayor Maczynski closed the public hearing.

Main Motion: Adopt Ordinance 15-21.

Moved by: Fansler
 Seconded by: Hoffman
 Action: Postponed

Primary Amendment: Amend the effective date to reflect "60 days after passage by the City Council".

Moved by: Robb
 Seconded by: Fansler
 Action: Motion carries by a vote of 7-0
 In favor: Robb Maczynski Welch Albertson Fansler Herman Hoffman
 Opposed: -0

Secondary Amendment: Amend to strike "60" and insert "100".

Moved by: Hoffman
 Seconded by:
 Action: Motion does not carry due to a lack of a second.

Main Motion: Postpone until the next regularly scheduled meeting.

Moved by: Welch
 Seconded by: Herman
 Action: Motion carries by a vote of 6-1
 In favor: Maczynski Welch Albertson Fansler Herman Hoffman
 Opposed: Robb

Item D – AM 15-39: University of Alaska Fairbanks Memorandum Of Agreement For The 4-H Program.

Main Motion: A motion to adopt was made at the September 22, Regular meeting.

Moved by: Albertson
 Seconded by: Springer
 Action: Motion carries by a vote of 7-0
 In favor: Robb Maczynski Welch Albertson Fansler Herman Hoffman
 Opposed: -0

Item E – AM 15-42: Approval of The City Of Bethel Employee Handbook.

Main Motion: Motion to adopt AM 15-42 was made at the September 22, 2015 Meeting.

Moved by: Herman
Seconded by: Albertson
Action: Motion carries by a vote of 7-0
In favor: Robb Maczynski Welch Albertson Fansler Herman Hoffman
Opposed: -0

Main Motion: Five minute break.

Moved by: Hoffman
Seconded by: Herman
Action: Motion carries by a vote of 7-0
In favor: Robb Maczynski Welch Albertson Fansler Herman Hoffman
Opposed: -0

Primary Amendment: Under Section, No Firearms, the section would read "Weapons or firearms are prohibited for on duty city employees anywhere on city premises, except those carried by law enforcement officials."

Moved by: Robb
Seconded by: Albertson
Action: Motion carries by a vote of 7-0
In favor: Robb Maczynski Welch Albertson Fansler Herman Hoffman
Opposed: -0

Primary Amendment: Under Section Smoking and Tobacco Use to read "Smoking and/or the use of tobacco is not permitted in city buildings or vehicles." And strike the rest.

Moved by: Robb
Seconded by: Hoffman
Action: Motion carries by a vote of 5-2
In favor: Robb Welch Albertson Fansler Herman
Opposed: Maczynski Hoffman

Secondary Amendment: Amend to state "Smoking and/or the use of tobacco is not permitted outside of designated smoking areas. The prohibition also includes any private property where employees are engaged in City business." and un-strike the last two sentences.

Moved by: Fansler
Seconded by: Herman
Action: Motion carries by a vote of 4-3
In favor: Welch Albertson Fansler Herman
Opposed: Hoffman Robb Maczynski

Main Motion: Under Section Open Door Policy, strike in its entirety.

Moved by: Robb

| | |
|--------------|--|
| Seconded by: | Albertson |
| Action: | Motion does not carry by a vote of 1-6 |
| In favor: | <input checked="" type="checkbox"/> Robb |
| Opposed: | <input checked="" type="checkbox"/> Maczynski <input checked="" type="checkbox"/> Welch <input checked="" type="checkbox"/> Albertson <input checked="" type="checkbox"/> Fansler <input checked="" type="checkbox"/> Herman <input checked="" type="checkbox"/> Hoffman |

Main Motion: Motion to take a ten minute break.

| | |
|--------------|--|
| Moved by: | Hoffman |
| Seconded by: | Robb |
| Action: | Motion does not carry by a vote of 3-4 |
| In favor: | <input checked="" type="checkbox"/> Hoffman <input checked="" type="checkbox"/> Maczynski <input checked="" type="checkbox"/> Robb |
| Opposed: | <input checked="" type="checkbox"/> Welch <input checked="" type="checkbox"/> Albertson <input checked="" type="checkbox"/> Fansler <input checked="" type="checkbox"/> Herman |

X. NEW BUSINESS

Item A – Introductions Of Ordinance 15-35: Alaska Marine Lines Lease Agreement For Warehouse, City Dock.
Passed on the consent agenda.

Item B – Introduction Of Budget Ordinance 15-14 (a): Amending The Adopted Fiscal Year 2016 Annual Budget.

Main Motion: Introduce Ordinance 15-14 (a).

| | |
|--------------|---|
| Moved by: | Fansler |
| Seconded by: | Robb |
| Action: | Motion carries by a vote of 7-0 |
| In favor: | <input checked="" type="checkbox"/> Robb <input checked="" type="checkbox"/> Maczynski <input checked="" type="checkbox"/> Welch <input checked="" type="checkbox"/> Albertson <input checked="" type="checkbox"/> Fansler <input checked="" type="checkbox"/> Herman <input checked="" type="checkbox"/> Hoffman |
| Opposed: | –0 |

Main Motion: Motion to direct Administration to see if there are other funding options for the \$25,000 rather than the undesignated unreserved fund balance.

| | |
|--------------|---|
| Moved by: | Robb |
| Seconded by: | Fansler |
| Action: | Motion carries by a vote of 6-1 |
| In favor: | <input checked="" type="checkbox"/> Robb <input checked="" type="checkbox"/> Maczynski <input checked="" type="checkbox"/> Welch <input checked="" type="checkbox"/> Albertson <input checked="" type="checkbox"/> Fansler <input checked="" type="checkbox"/> Herman |
| Opposed: | <input checked="" type="checkbox"/> Hoffman |

Item C – Resolution 15-18: Disposition Of City Personal Property In An Amount Less Than \$5,000 To Orutsarmiut Native Council.

Council Member Hoffman and Council Member Welch declared a conflict of interest on Resolution 15-18: Disposition of City Personal Property in an Amount Less than \$5,000 to Orutsarmiut Native Council.

Mayor Robb rules, Council Member Hoffman does have a conflict of interest. Mayor Robb rules, Council Member Welch does not have a conflict of interest.

Council took a five minute at ease.

Vice-Mayor Maczynski departed the meeting at 9:50p.

Main Motion: Nominate Leif Albertson for Mayor Pro Temp

Moved by: Hoffman

Action: Motion carries by a vote of 6-0

In favor: Robb Welch Albertson Fansler Herman Hoffman

Opposed: -0

Main Motion: Postpone until the next regular meeting.

Moved by: Fansler

Seconded by: Welch

Action: Motion carries by a vote of 5-0

In favor: Robb Welch Albertson Fansler Herman

Opposed: -0

Item D – AM 15-54: Reappointment Of Joan Dewey To The Public Safety And Transportation Commission.

Passed on the consent agenda.

Item E – AM 15-55: Approval Of Administrations Selection of The Firm, Carmen Jackson, CPA, To Provide Accounting Services To The City Of Bethel As Needed From Date Of Award Until June 30, 2020.

Main Motion: Approve AM 15-55.

Moved by: Fansler

Seconded by: Hoffman

Action: Motion carries by a vote of 6-0

In favor: Robb Welch Albertson Fansler Herman Hoffman

Opposed: -0

Main Motion: Suspend the rules to hear from the finance director.

Moved by: Hoffman

Seconded by: Herman

Action: Motion carries by a vote of 6-0

In favor: Robb Welch Albertson Fansler Herman Hoffman

Opposed: -0

Item F – AM 15-56: Direct Administration To Review The Potential Incorporation Of A Borough In The Kuskokwim Region.

Main Motion: Approve AM 15-56.

Moved by: Hoffman
Seconded by: Herman
Action: Motion carries by a vote of 4-2
In favor: Welch Fansler Herman Hoffman
Opposed: Albertson Robb

Item G – AM 15-57: Authorizing The Selection Of Cascade Columbia Distribution Co. To Provide The City With A Total Of 600 Cubic Feet Of Anthracite By Air Freight And Barge For Bid Price.

Main Motion: Approve AM 15-57.

Moved by: Hoffman
Seconded by: Herman
Action: Motion carries by a vote of 6-0
In favor: Robb Welch Albertson Fansler Herman Hoffman
Opposed: -0

Item H – AM 15-58: Appointment Of Barbara Mosier To The Parks, Recreation, Aquatic Health And Safety Center Committee.
Passed on the consent agenda.

Item I – *Personal Time Off Request For The City Attorney, December 23 and 24, 2015.
Passed on the consent agenda.

Item J – *Personal Time Off Request For The City Clerk, December 31, 2015.
Passed on the consent agenda.

Item K – AM 15-59: Acceptance Of \$55,817 From ONC For Transit Operations January –June 2016.

Main Motion: Approve AM 15-59.

Moved by: Herman
Seconded by: Welch
Action: Motion carries by a vote of 6-0
In favor: Robb Welch Albertson Fansler Herman Hoffman
Opposed: -0

Main Motion: Extend the meeting past 11:00p.

Moved by: Fansler
Seconded by: Herman

| | |
|-----------|---|
| Action: | Motion carries by a vote of 6-0 |
| In favor: | <input checked="" type="checkbox"/> Robb <input checked="" type="checkbox"/> Welch <input checked="" type="checkbox"/> Albertson <input checked="" type="checkbox"/> Fansler <input checked="" type="checkbox"/> Herman <input checked="" type="checkbox"/> Hoffman |
| Opposed: | -0 |

Council Member Hoffman declared a conflict of interest because of her employment with ONC.

Mayor Robb rules, Hoffman does not have a financial of interest on this issue. Mayor Robb ruled that Council Member Welch does not have a conflict of interest because of her tribal membership.

Item L – AM 15-60: Approval Of Transit Grant Application Submission And Related Match Commitment Of \$80,580 From City Of Bethel FY 2017.

Main Motion: Approve AM 15-60.

| | |
|--------------|---|
| Moved by: | Hoffman |
| Seconded by: | Herman |
| Action: | Motion carries by a vote of 6-0 |
| In favor: | <input checked="" type="checkbox"/> Robb <input checked="" type="checkbox"/> Welch <input checked="" type="checkbox"/> Albertson <input checked="" type="checkbox"/> Fansler <input checked="" type="checkbox"/> Herman <input checked="" type="checkbox"/> Hoffman |
| Opposed: | -0 |

XI. MAYOR'S REPORT

XII. MANAGER'S REPORT

XIII. CLERK'S REPORT

XIV. COUNCIL MEMBER COMMENTS

Council Member Zach Fansler –

First Lego League for LKSD Schools, this was an excellent competition and is thankful for being a judge.

Council Member Chuck Herman –

Appreciate the comments from the community tonight in looking forward to the future and being proactive rather than reactive. It seems as though the Council and the Committees/Commission are working in the right direction.

Council Member Nikki Hoffman –

No comment.

Council Member Alisha Welch –

No comment.

Council Member Leif Albertson –

It is cold outside, please be careful of pedestrians. The Fire Department has iron on reflective tape if anyone needs it.

Mayor Richard Robb –

Winter is here, search and rescue says that river travel is still hazardous.

Bethel Winter House is still looking for volunteers.

XV. EXECUTIVE SESSION

Item A – Executive Session To Discuss The Annual Evaluation Of The City Manager As Per Alaska Statutes 44.62.310: Personnel Matters (Unless the Person Has Requested To Have The Subjects Discussed In Public) Or Subjects That Tend To Prejudice The Reputation And Character Of A Person.

Move into executive session To Discuss The Executive Session To Discuss The Annual Evaluation Of The City Manager As Per Alaska Statutes 44.62.310: Personnel Matters (Unless the Person Has Requested To Have The Subjects Discussed In Public) Or Subjects That Tend To Prejudice The Reputation And Character Of A Person

Main Motion: Those participating in the Executive session will be the City Manager and the Council.

Moved by: Fansler

Seconded by: Welch

Action: Motion carries by a vote of 6-0

In favor: Robb Welch Albertson Fansler Herman Hoffman

Opposed: –0

Main Motion: Postpone until the next meeting.

Moved by: Robb

Seconded by:

Action: Motion does not carry due to a lack of a second.

Council entered executive session at 11:40p.

XVI. ADJOURNMENT

Council adjourned at 1:09p.

ATTEST:

Richard Robb, Mayor

Lori Strickler, City Clerk

Reports of Standing Committees

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Passed unanimously by the Public Works Committee on December 16, 2015.

Received by: _____
Date: _____



MEMORANDUM

To: Muzaffar Lakhani, Public Works Director
City of Bethel

From: Chase A. Nelson, P.E. *CAN*
DOWL

Date: December 11, 2015

Subject: *Revised Technical Memorandum*
Bethel Boardwalk Planning Assistance

The City of Bethel contracted DOWL to provide a planning level assessment of the boardwalk connecting the hospital in Bethel to the Kuskokwim University of Alaska Fairbanks- Campus.

The existing boardwalk is dilapidated to the point the City of Bethel has closed it off to restrict pedestrian access. The existing boardwalk is built on top of driven piles. The piles were installed to elevate and support the waste heat lines from the Alaska Village Electric Corporation power plant.

The existing boardwalk was observed to have the following deficiencies:

- Over time the piles have heaved and settled due to frost movement, resulting in an uneven boardwalk.
- The treated timbers have been weathered, and many are due for replacement.
- The driven piles the waste heat lines were constructed on were not designed for live loads introduced by loads on the boardwalk. This has resulted in substantial horizontal sway when pedestrians use the boardwalk.

Improvements to the existing boardwalk are required for pedestrians to safely use the boardwalk.

DOWL has prepared three (3) planning level estimates to improve the boardwalk. They include repairing the existing boardwalk and two replacement alternatives. The three alternatives are explained below, and the attached figure shows the approximate alignment of the three alternatives. All three of the alternatives assume the following:

- A local contractor would complete construction, which would minimize mobilization costs.
- Only City and State funds will be used for this project, resulting in no need for Davis-Bacon wages.
- No permitting or design efforts are included in the project estimates.
- Construction activities would be conducted using the City of Bethel General Permit for wetlands fill.

Alternative #1 – Replace Existing Boardwalk in Place

This option involves rehabilitating the existing boardwalk in its current location on top of the waste heat line piles. The work would consist of board replacement, leveling, and structural cable tie downs with anchorage for a means to adjust the structural cables. Basic assumptions include the following:

- 50% of the boardwalk lumber will be replaced,
- 50% of the pilings will require leveling,
- 50% of the pilings will require the installation of anchorage (duckbill anchors).

Total estimated cost for Alternative #1 is \$260,000.

Alternative #2 – Construct New At-Grade Boardwalk

This option involves constructing a new 8 ft. wide at-grade boardwalk approximately 125' south of and parallel to the existing elevated boardwalk. This option assumes the following:

- The existing boardwalk will be abandoned, ~~but not removed or salvaged.~~
- The majority of the proposed at-grade boardwalk would be installed on treated timber cribbing, with a small portion installed on helical piers to cross wet areas.
- The existing boardwalk will be removed, and materials would be disposed of or made available for re-use.

Total estimated cost for Alternative #2 is \$330,000.

Alternative #3 – Construct New Gravel Pathway

This option involves constructing a 12 ft. top width gravel pathway approximately 1,075' in length. This option assumes the following:

- The existing boardwalk will be abandoned, ~~and not removed or salvaged.~~
- The proposed gravel pathway will be constructed by placement of geotextile fabric directly on tundra, followed by a suitable soil material, and topped with 4" of surface topping. Side slopes of the pathway would be approximately 3H:1V.
- The existing boardwalk will be removed, and materials would be disposed of or made available for re-use.

Total cost for Alternative #3 is \$180,000.

Removal cost for existing boardwalk has been added
to Alternate #2 and #3 @ \$60,000.00



Approximate Alignments

- Alternative 1 (950')
Replace Existing Boardwalk
- Alternative 2 (890')
New At-Grade Boardwalk
- Alternative 3 (1,075')
New Gravel Pathway



NOT TO SCALE

Boardwalk Replacement Planning

Bethel, Alaska



October 16, 2015

Figure 1



City of Bethel, Alaska

Public Works Committee Agenda

Wednesday, December 16, 2015

Regular Meeting

6:30PM

City Hall

Council Chambers

MEMBERS

Byron Maczynski
Council Rep.
Term Expires
10/2016

Frank Neitz
Chair
Term Expires
12/2016

Scott Guinn
Vice-Chair
Term Expires
12/2017

Robert Champagne
Committee Member
Term Expires
12/2017

Jennifer Dobson
Committee Member
Term Expires
12/2017

Donna Lindsey
Committee Member
Term Expires
12/2015

Delbert Egoak
Committee Member
Term Expires
12/2015

Joseph Klejka
Alternate Member
Term Expires
12/2017

Muzaffar Lakhani
Ex-Officio Member

Secretary/Recorder
Pauline Boratko

- I. CALL TO ORDER
- II. ROLL CALL
- III. PEOPLE TO BE HEARD – (5 Minute Limit)
- IV. APPROVAL OF AGENDA
- V. APPROVAL OF MINUTES
 - A. Minutes from the previous regular meeting – November 18, 2015 (there was a meeting).
- VI. SPECIAL ORDER OF BUSINESS
- VII. UNFINISHED BUSINESS
 - A. Water & Sewer Master Plan/Institutional Corridor Piped Water Supply Project, alternate routing of the pipe alignment if Hospital does not allow the pipe to pass through their property. – The negative impact on revenue if Hospital does not tie into the city water supply system. Hospital is curious about the quality of the city supplied water. Frank Neitz
 - B. Sewer Lagoon, – RFP (Request for Proposal) for PER (Preliminary Engineering Report) & ER (Environmental Report) for Truck Dump Site and other options. -Frank Neitz.
 - D. Need of safety lighting in different Neighborhoods- Scott Guinn.
 - E. Installing the slip lining inside the old metallic water pipes in the Bethel Heights subdivision- Byron Maczynski.
- VIII. NEW BUSINESS
 - Cost estimate to remove the existing board walk between the Hospital and the College.
 - Cost from DOWL for different options of the Boardwalk-Jennifer Dobson
- IX. Director’s Report
- X. MEMBER COMMENTS
- XI. ADJOURNMENT

City of Bethel, Alaska

Public Safety & Transportation Commission

December 1, 2015

Regular Meeting

Bethel, Alaska

I. CALL TO ORDER

A regular meeting of the Public Safety and Transportation Commission was held on December 1st, 2015 in the Bethel City Hall Council Chambers.

This meeting was called to order at 7:05PM

II. ROLL CALL

Present: Joan Dewey *Chair*
Chuck Herman *Council Representative*
Eileen Henrickson
Julene Webber

Absent: Naim Shabani
Deborah White

Ex-Officio Present: Andre Achee *Chief of Police* (via telephone conference)
Bill Howell *Fire Chief*
Christina Him *Recorder and Transportation Inspector Designee*

III. PEOPLE TO BE HEARD

None

IV. APPROVAL OF AGENDA

| | | |
|----------------------------|---------------|-------------------------------|
| MOVED: | Herman | Motion to approve the agenda. |
| SECONDED: | Henrickson | |
| VOTE ON MAIN MOTION | All in favor. | |

V. APPROVAL OF MINUTES

| | | |
|----------------------------|---------------|---|
| MOVED: | Herman | Motion to approve the minutes from the regular meeting of November 3. |
| SECONDED: | Henrickson | |
| VOTE ON MAIN MOTION | All in favor. | |

VI. SPECIAL ITEM OF BUSINESS

A. Nominations for Vice Chair

| | | |
|----------------------------|---------------|--|
| MOVED: | Webber | Motion to nominate Eileen Henrickson for Vice Chair. |
| SECONDED: | Herman | |
| VOTE ON MAIN MOTION | All in favor. | |

VII. CHIEFS' COMMENTS

Chief Bill Howell – *See Report in Commission Packet.*

Chief Andre Achee – *Staffing issues since the last PSTC meeting - we are down one position, Lt. Corbett's last day was a couple of weeks ago, he has relocated to the Soldotna area. Sgt. Limani and Davis have been conducting interviews for potential candidates. We have good prospective candidates and their backgrounds are done. We will probably be extending several conditional offers of employment. If these candidates pass everything, they will make a fine addition to our team. Dispatch is at full staff.*

Yesterday was the grand opening for the Willow Place Apartments. Michelle DeWitt with Bethel Community Services Foundation (BCSF) did a phenomenal job and assisted us with the grant application for Public Safety.

I have spoken with APSC (Alaska Police Standards Council) and am currently attending AACOP (Alaska Association of Chiefs of Police) to speak with other chiefs in regards to retention and recruitment and what is working for them.

The fire department did a phenomenal job; we and AST troopers assisted them with fire

Currently, the police department is budgeted for 8 patrol officers, but we are down 4. We have 1 patrol officer who is currently the acting investigator. We have 2 patrol sergeants and 1 investigative sergeant. Our night shifts start at 7pm-7am, and it is staffed at minimum staffing, which is 2 officers. We are staffed with 1 patrol officer for half of the week during day shift and I assist them as need be, as well as AST - we appreciate their efforts as well.

Our dispatch supervisor is in Utah attending a conference with eForce which is the records management system software that we use at the police department. She will be learning all the functions of the software that we use in dispatch.

The Police Department participated in the Public Health Nursing Health Fair that was also co-sponsored by YKHC. It was a good turn-out, our employees showed up and we used our command mobile trailer to assist.

Preventative maintenance is an issue that City and Public works is working on regarding mechanical staffing. We are trying our best to ensure our public safety and emergency response vehicles are maintained and operational. We have addressed this issue with the city manager and we are hoping that we find good mechanics

VIII. TRANSPORTATION INSPECTOR REPORT

See Report in Commission Packet

IX. COUNCIL MEMBER’S COMMENTS

Council Member Herman – *Item E (Ordinance #15-32 Repealing and Replacing BMC 5.08, Alcoholic Beverages) has been passed by Council. Item D (Ordinance #15-31, Amending Operation of Low Speed Vehicles) has also passed. We’ll talk about agenda item B (Ordinance #15-19, 15-20, 15-21) when we get to it. Essentially, the goal of these ordinances was to cut down alcohol sales in cabs. We voted to not approve all 3 proposed ordinances, however the reason it hasn’t gone back to council is because we did not follow the proper process/procedures to vote on it as a body. Generally a lot of the issues will be addressed by legal alcohol sales.*

X. UNFINISHED BUSINESS

A. Drug Screening Policy for Chauffeurs (Commission Member Shabani)

Discussed, no action taken, will continue discussion at the next scheduled PSTC Meeting when Shabani is present.

B. Formal Recommendations/Clarification for disapproval of Ordinance #15-19, 15-20, 15-21 (Council Member Herman)

The goal is to cut down on alcohol sales in cabs. PSTC voted to not recommend the ordinances. We formally move to disapprove.

- 15-19 - PSTC does not support this as there are concerns with the lack of due process for taxi drivers. PSTC would be more interested in a tiered system
- 15-21 - PSTC does not support this ordinance as it is cost prohibitive, estimated at about \$2,200 and there are also concerns with privacy.

| | | |
|----------------------------|---------------|---|
| MOVED: | Herman | Motion to disapprove Ordinance #15-19 for the reason of concerns with the lack of due process for taxi drivers and an interest in a tiered system of punishment by PSTC |
| SECONDED: | Webber | |
| VOTE ON MAIN MOTION | All in favor. | |

| | | |
|----------------------------|---------------|---|
| MOVED: | Herman | Motion to disapprove Ordinance #15-21 for the reason of concerns that the system is cost prohibitive and concerns with privacy. |
| SECONDED: | Webber | |
| VOTE ON MAIN MOTION | All in favor. | |

C. Curfew Policy (*Council Member Herman*)

The idea was to discuss and clarify other options other than monetary citations to juveniles, such as offering community service for curfew violations. The court has always gone with offering community work instead of a fine. The discretion that is given is usually community service work.

D. Ordinance #15-31 Amending Operation of Low Speed Vehicles

No action taken, ordinance passed by council.

E. Ordinance #15-32 Repealing and Replacing BMC 5.08, Alcoholic Beverages

No action taken, ordinance passed by council.

XI. NEW BUSINESS

A. Police Department Staffing Levels

We discussed this a little bit during the last PSTC meeting, however we are still working on some issues. Money can't just be thrown into it, we have to throw other ideas into it, and we are still working on the ideas, but money does play a little of a role. We do compete with the State of Alaska for employees, not only for the police department, but for the City of Bethel. We normally don't compete with Alaska State Troopers, but we do compete with other criminal justice organizations within the City, i.e. Correctional Officers. The starting pay for CO1 (Correctional Officer 1), with minimum requirements of being 19 years of age or older, with a clear background, is \$31/hour. Whereas police officers start at around \$21/hr. After a year of probation, a correctional officer's pay increases to around \$34/hour. The City of Bethel does offer good benefits packages, however we have to compete with salaries.

We offered two conditional offers to two experienced officers; unfortunately we were not able to compete with the salary so they turned down the job. If we offer them more money than our own current staff that has been in Bethel for 2-5 years, then this would cause a disparity among the ranks. It is a morale issue and it has happened about 10 years ago in this department.

We are working on trying to get support from PSTC and the finance director. I am looking within our existing budget to satisfy some of the monetary issues that my employees may have and bring it to council. I am not going to council to ask to throw more money at the police department, but I am looking at the existing budget to satisfy the monetary issues that some of my employees may have. This will help to retain existing officers as well as help with recruitment.

Shift issues may help with the morale and help recruit some individuals, but there are some contractual issues. We have to make sure the contractual issues are legal due to of PERs requirements, etc.

The way that the City of Bethel currently advertises for Police Officers is done through our Human Resources manager. The police department advertises the positions on free websites for law enforcement - i.e. www.policeone.com, which is a free national website for law enforcement agencies to post vacant positions on. For certain executive type of positions or supervisor positions, there are other free websites such as, APOA and AACOP as well. Word of mouth from past employees or current employees has also helped with recruitment. We have not paid for professional recruiters or paid for advertisement. We use resources that are free and get the message out there. At the recent job fair, our HR manager Laura Cloward attended and we tried to send a couple of officers there as well to assist with recruitment.

A far as housing for law enforcement officers, The Willow House Apartments is a private company, however if there is a vacancy, law enforcement officers will have priority. There are incentives for relocation expenses, housing allowance, employees are reimbursed, however they are required to sign a commitment contract.

We have been basically between 70-50% for over a year in staffing. For emergency situations, AST will assist BPD, but not in basic patrol coverage. Even if we hired a brand new police officer, who is ready to go to the academy, they will not be available for 3 months, as they will be attending the academy for that period. All Police Officers that are hired have a polygraph examination and a psychological examination done, as well as complete a full background prior to employment; this helps eliminates applicants.

B. Fire Department Staffing in Anticipation for Increased Calls for Service due to Liquor Sales

We have a couple of things going on here, the fire department is currently a reactive department, but in the areas that we can be proactive, we are trying to be - one area is staffing. We have been successful at hiring people immediately, and that is strength for us. The opening of liquor stores is going to be a pretty intense period for Bethel in Public Safety. We deal with a lot of issues that the PD is facing, especially with turnovers.

We are currently training a new employee and we just finished training 3 other new employees. We have a really new crew at the department. Employees getting burned out are a huge concern, as a lot of times, they are asked to standby when they are off duty. They get compensated for it, however even with that being said, when you are constantly cutting into another person's off time, it is tough. We are having to do the coverage because we have 3 shifts and only 5 people to cover it. The assumption is that we are going to have a lot of activity when the liquor

stores are open. If you need evidence, look at what happens during Dividend time. There were 162 calls for service in October for the fire department and the percentages for alcohol related incidents were significant.

The City of Bethel went “wet” in October of 2009, and after that, it was busier for alcohol related calls for services. From 2011 through 2015, our call volumes have just continued to increase year after year. In FY 2015 (2014) our 6th firefighter position was defunded. Based on call volume and numbers, we are up about 23% in call volumes. Alcohol related calls are up about 35% within those 4 years.

I really believe that the liquor store is going to create a lot more call volume for the police department and fire department.

The fire department assists the police department when they are not available. The EMTs will be called to handle these calls and transport inebriated individuals.

We would like to refund the currently vacant positions in our department and we are going to aggressively go after grant funding for these positions (firefighter and EMT positions). We would like to see two firefighters on shift for firefighter safety – if one firefighter goes into the house before the second firefighter or volunteer comes in, they are at risk of safety because their resources are going to be stressed. We would like to take the fire captain off a working shift position, so that he can manage day to day basis operations, such as pre-fire planning and working/training with the crew. We are looking for support from the PSTC and would like to keep this on the agenda and give PSTC more information at the next meeting.

XII. COMMISSION MEMBER COMMENTS

Joan Dewey – *I think this has been one of our more important meetings and I think that it’s great to see people having a quorum and being able to have these meetings.*

Julene Webber – *I just value our police and our fire departments and I’d like to see that be supported in this community, and so I’m going to do what I can do to help make that happen.*

Eileen Henrickson – *No comments.*

Chuck Herman – *No comments.*

XIII. ADJOURNMENT

| | | |
|----------------------------|---------------|--------------------|
| MOVED: | Herman | Motion to adjourn. |
| SECONDED: | Webber | |
| VOTE ON MAIN MOTION | All in favor. | |

Meeting adjourned at 9:25pm

APPROVED THIS _____ DAY OF _____, 2015.

Christina Him, Recorder

Joan Dewey, Chair

DRAFT

City of Bethel, Alaska

Port Commission

November 23, 2015

Rescheduled Meeting

Bethel, Alaska

I. CALL TO ORDER

A rescheduled meeting of the Port Commission held on November 23, 2015 at 7 p.m. in the City Council Chambers, Bethel, Alaska

Chair, Alan Murphy called the meeting to order at 7:03 P.M.

II. ROLL CALL

Comprising a quorum of the Commission, the following members were present for roll call: Comm. Murphy, Comm. Roczicka, Comm. Pope, Comm. Welch

Ex-Officio members present were:
Peter Williams, Allen Wold, and Nathan Greydanus

III. PEOPLE TO BE HEARD

None

IV. APPROVAL OF AGENDA

| | | |
|----------------------------|-------------------|--------------------|
| MOVED: | Comm. Pope | Approval of Agenda |
| SECONDED: | Comm. Roczicka | |
| VOTE ON MAIN MOTION | 4-0 All in favor. | |

V. APPROVAL OF MINUTES

| | | |
|----------------------------|-------------------|--|
| MOVED: | Comm. Pope | Approval of Minutes for April, August, September, and October 2015 |
| SECONDED: | Comm. Welch | |
| VOTE ON MAIN MOTION | 4-0 All in favor. | |

VI. DEPARTMENT HEAD COMMENTS

- Finished RFP for the Port Building.
- Training with Target Solutions.
- Port Staff is helping out City Hall with picking up the mail and bank deposits.
- USACE Permit to excavate/dredge Brown Slough

VII. UNFINISHED BUSINESS

| | | |
|----------------------------|-------------------|-----------------------|
| MOVED: | Comm. Roczicka | AML's Warehouse Lease |
| SECONDED: | Comm. Welch | |
| VOTE ON MAIN MOTION | 4-0 All in favor. | |

-Abandoned and Derelict Vessel Task Force (ADV)

-Steam Boat slough has become the focal point. ONC is also involved.

VIII. NEW BUSINESS

None

IX. COMMISSION MEMBERS COMMENTS

Comm. Murphy - Welcomed Alisha Welch to the Commission.

X. ADJOURNMENT

| | | |
|----------------------------|--------------|-------------------|
| MOVED: | Comm. Murphy | Motion to adjourn |
| SECONDED: | Comm. Pope | |
| VOTE ON MAIN MOTION | | |
| 4-0 All in favor. | | |



Alan Murphy, Chairperson

ATTEST:


Allen Wold, Recorder

City of Bethel, Alaska

Planning Commission Meeting

Dec. 10, 2015

Regular Meeting

Bethel, Alaska

I. CALL TO ORDER

A regular meeting of the Planning Commission was held on Thursday, Dec. 10, 2015, at 6:30 PM at the City Hall Chambers in Bethel, Alaska. Chair Shantz called the meeting to order at 6:30 pm.

II. ROLL CALL

Compromising a quorum of the Commission, the following members were present for roll call: John Guinn, Joy Shantz, Lorin Bradbury, Kurt Kuhne, Kathy Hanson, and Nikki Hoffman. Cliff Linderoth was excused. Also present was Planning Director Ted Meyer, Recorder Betsy Jumper and Port Director Pete Williams.

III. PEOPLE TO BE HEARD: Nobody wished to be heard.

IV. APPROVAL OF AGENDA

MOTION TO APPROVE THE AGENDA OF DEC. 10, 2015

| | | |
|-----------------------|--|---|
| MOVED: | Kathy Hanson | To approve the agenda for the meeting of December 10, 2015. |
| SECONDED: | Lorin Bradbury | |
| VOTE ON MOTION | All in favor 6 yes and 0 opposed. Motion carries. | |

V. APPROVAL OF MINUTES FROM THE NOV. 12, 2015 PLANNING MEETING

MOTION TO APPROVE THE MINUTES

| | | |
|-----------------------|--|---------------------------------------|
| MOVED: | John Guinn | To approve the Nov. 12, 2015 minutes. |
| SECONDED: | Nikki Hoffman | |
| VOTE ON MOTION | All in favor 6 yes and 0 opposed. Motion carries. | |

VI. NEW BUSINESS: A. Introduction of Mr. Ted Meyer, Planning Director. Ted introduced himself to the Planning Commission and gave an overview of his experiences and history in Alaska and planning and is looking forward to being in Bethel.

B. City of Bethel owned Property – Lot 1B, Block 7, Plat Number 82-23. The physical address is 251 East Avenue (ACTION ITEM). Port Director Pete Williams presented the history of the building and what the Port would like to use the building for to the Planning Commission.

MOTION MADE TO RECOMMEND TO CITY COUNCIL THAT THE PORT OFFICE USE THE SHOP.

| | | |
|------------------|----------------|--|
| MOVED: | Lorin Bradbury | To recommend to Council the Port Office use the shop for repairing vehicles, storing boats, etc. |
| SECONDED: | Kathy Hanson | |

| | |
|-----------------------|--|
| VOTE ON MOTION | All in favor 6 yes and 0 opposed. Motion carries. |
|-----------------------|--|

VII. COMMISSIONER'S COMMENTS: **Kathy**—no comments; **Nikki**—glad to be here, this is a very short and sweet meeting and I like the idea of putting a time limit on any extra meetings we may have and I'm glad everyone's here, it's nice to see new faces. Also, the marijuana commission is meeting frequently; I don't know if we'll be meeting as often, but I think if we did, I would be in favor of added meetings with a time limit, just an option, so we don't get burnt out. And, was the Planning Commission satisfied with Council representation about the recommendations of Ordinance 15-32?; **John**—no comments; **Lorin**—I'll mention the Port in relation to Donlin Creek Gold mine, how many acres they would need for example—this topic came up in a Chamber of Commerce meeting-- and I feel this should be discussed with the Planning Commission. Also, the potential for a borough should be discussed as well. Let's be proactive and get moving on it. **Kurt**—I would like those 2 things to be on a future agenda as well (Donlin and borough). The main thing I would like to comment on is the concern I have with Donlin, and the YKHC hospital expansion-- 400 new jobs with the hospital and 3000 with Donlin which potentially may create more development here. How can the City promote development of land? In this town you can let your land sit, and there's no reason to develop it because there's no taxes. In other places you lose money if you don't do something with your land. So, in the near future I would like to see how we can forward think this in getting the administration involved too. Also, in regards to more meetings in the future, I'm not opposed for a temporary period of time. **Joy**—I am very happy to welcome Mr. Meyer to the Planning Director position, much needed and welcome to Bethel. Also, something I wanted to say at the last meeting was Happy Veteran's Day to John—thank you for your service. Another comment is, and I've heard so much about it the past few days, is about the AVEC tower being right on the snow machine trail, and the concern for safety, that somebody might not see the wires. My idea was to make it a giant Christmas tree and light that baby up, that'd be beautiful. It could be like White Alice, a navigational aid. This just illustrates the importance of involving the Planning Commission. This did not come to us-- we were completely skirted and circumvented on that. And, if it would have come to us, we have a lot of minds here that we could put it together and say, look, maybe that's not the best place. These decisions coming to the Planning Commission/and or other Commissions and Committees, are so important. As a Councilmember, if you get something that doesn't have a recommendation—it's the Councilmember's responsibility to say this needs to go to the Commission or the Committee. Don't act on it until all the minds (there's a wealth of knowledge and experience) have been tapped.

VIII. ADJOURNMENT

| | | |
|-----------------------|--------------------------------------|--|
| MOVED: | Kurt Kuhne | Motion to adjourn the meeting at 7:45. |
| SECONDED: | Kathy Hanson | |
| VOTE ON MOTION | 6 yes and 0 opposed. Motion carries. | |

The next meeting will be on January 14, 2016

ATTEST: _____, Joy Shantz, Chairman
 _____, Betsy Jumper, Recorder

Special Order of Business

Unfinished Business

Introduced by: Council Member Springer
Date: July 28, 2015
Public Hearing: December 8, 2015
January 12, 2016
Action:
Vote:

CITY OF BETHEL, ALASKA

Ordinance #15-21

AN ORDINANCE BY THE BETHEL CITY COUNCIL AMENDING BETHEL MUNICIPAL CODE, CHAPTER 5.30, TAXICAB, RIVER TAXI, LIMOUSINE AND BUS PERMITS, TO REQUIRE VIDEO CAMERA SURVEILLANCE SYSTEM AND GLOBAL POSITIONING SYSTEM CAPABILITIES

NOW, THEREFORE BE IT ORDAINED, that the City of Bethel authorizes a change to the Bethel Municipal Code as described herein.

SECTION 1. Classification. This ordinance is of a general and permanent nature and shall become a part of the Bethel Municipal Code.

SECTION 2. Amendment. The Bethel Municipal Code is to be amended as follows (new language is underlined and old language is stricken)

Chapter 5.30 TAXICAB, RIVER TAXI, LIMOUSINE AND BUS PERMITS

Sections:

- 5.30.010 Taxicab permit required.
- 5.30.020 River taxi permit required.
- 5.30.030 Bus permit required.
- 5.30.035 Limousine permit required.
- 5.30.040 Application for permits.
- 5.30.050 Issuance of new nontransferable taxicab permits.
- 5.30.055 Taxicabs – Renewal of existing permits.
- 5.30.060 Taxicabs – Transfer of existing permit.
- 5.30.065 Posting of taxicab permit.
- 5.30.070 Taxicabs – Number of vehicles operated per permit.
- 5.30.080 Taxicabs – Subscription to dispatch service.
- 5.30.090 Taxicabs – Vehicle markings.
- 5.30.100 Required equipment.
- 5.30.120 Insurance required.
- 5.30.130 Posting of insurance notice.

Introduced by: Council Member Springer
Date: July 28, 2015
Public Hearing: December 8, 2015
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Action:
Vote:

- 5.30.140 Records.
- 5.30.160 Single use of vehicle.
- 5.30.170 Vehicle horn honking.
- 5.30.180 Safety equipment tampering prohibited.

5.30.010 Taxicab permit required.

- A. No person may provide taxicab service in the city unless that person:
 - 1. Is a permittee in possession of a valid taxicab permit issued to him or her, and is in compliance with Chapters 5.20 through 5.50 BMC; or
 - 2. Has entered into an agreement with a permittee as a lease operator which allows that person to provide taxicab services pursuant to the permittees authority only for as long as the permittee is lawfully in possession of the permit and complies with all terms and conditions of issuance of the permit, and only if such an arrangement is approved in advance by the transportation inspector. In order to obtain such approval from the transportation inspector, the transportation inspector must approve the language of a written lease agreement and determine that the lease operator meets all requirements imposed on chauffeurs and taxicab permittees by Chapters 5.20 through 5.50 BMC. A decision of the transportation inspector denying a lease operator arrangement can be appealed to the commission in accordance with BMC 5.20.100.
- B. No permittee shall allow another person to provide taxicab service under the authority of his or her permit except as allowed in subsection A of this section. Violation of this section is grounds for immediate revocation of a taxicab permit.
- C. No person may operate or dispatch a vehicle as a taxicab unless that vehicle is described on a taxicab permit as provided in subsection A of this section. Violation of this section is grounds for immediate revocation of a license or permit.
- D. No person may provide taxicab service pursuant to a taxicab permit except in accordance with Chapters 5.20 through 5.50 BMC. Violation of this section is grounds for immediate revocation of a permit.
- E. The permittee shall utilize as chauffeurs only currently licensed chauffeurs who have satisfactorily completed a commission-approved driver training and testing

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program and who are otherwise in compliance with all of the requirements of Chapters 5.20 through 5.50 BMC.

5.30.020 River taxi permit required.

- A. No person may provide river taxi service within the city without a river taxi permit. A river taxi permit, or any interest in a river taxi permit issued pursuant to this section, shall not be transferable through sale, lease, rental, power of attorney, or any other manner of conveyance, and shall become void and revert to the commission if it is revoked or not renewed in accordance with the provisions of Chapters 5.20 through 5.50 BMC.
- B. A person may apply for an original or renewal river taxi permit by complying with the requirements of BMC 5.30.040. If the applicant is in compliance with all of the terms and conditions of Chapters 5.20 through 5.50 BMC that apply to river taxis, he or she shall be issued a permit.

5.30.030 Bus permit required.

- A. A person may provide bus service within the city with a bus permit. A permit, or any interest in a permit issued pursuant to this section, shall not be transferable through sale, lease, rental, power of attorney, or any other manner of conveyance, and shall become void and revert to the commission if it is revoked or not renewed in accordance with the provisions of Chapters 5.20 through 5.50 BMC.
- B. A person may apply for an original or renewal bus permit by complying with the requirements of BMC 5.30.040. If the applicant is in compliance with all of the terms and conditions of Chapters 5.20 through 5.50 BMC that apply to buses, he or she shall be issued a permit.
- C. A bus must operate on a defined route. The route must be submitted to the transportation inspector. Any changes in the route must be submitted to the transportation inspector. Bus operators may deviate from the defined route up to three-fourths (3/4) of a mile to accommodate handicapped passengers.

5.30.035 Limousine permit required.

- A. A person may provide limousine service in the city if that person:

Introduced by: Council Member Springer
Date: July 28, 2015
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Action:
Vote:

1. Is a permittee in possession of a valid limousine permit issued to him or her, and is in compliance with Chapters 5.20 through 5.50 BMC;
 2. Operates a limousine;
 3. Utilizes currently licensed chauffeurs who have satisfactorily completed a commission-approved driver training and testing program and who are otherwise in compliance with all of the requirements of Chapters 5.20 through 5.50 BMC.
- B. A limousine will provide service by reservation or prearranged call for service. It is unlawful for a limousine chauffeur to provide flag stop service to passengers by curbside hail or the use of fixed routes.
- C. The current rates to be charged by a limousine permittee shall be provided to the transportation inspector in the form of a rate sheet. The permittee is responsible for providing the inspector with a new rate sheet as prices change. The prices on the rate sheet must be greater than the maximum rates allowed for the provision of a similar ride by taxicab.

The following rates are established as minimum rates for limousine operators:

One-half (1/2) hour or less arranged ride: fifty dollars (\$50.00);

One (1) hour arranged ride: eighty dollars (\$80.00).

5.30.040 Application for permits.

- A. An application for an original or renewal taxicab, bus, limousine or river taxi permit shall be made to the transportation inspector.
- B. An application for a permit shall be submitted on a form approved by the transportation inspector and shall be accompanied by:
 1. The fee specified in BMC 5.20.160;
 2. Proof of insurance for the vehicle as required by Chapters 5.20 through 5.50 BMC;
 3. Proof that the applicant is at least eighteen (18) years of age; and

Introduced by: Council Member Springer
Date: July 28, 2015
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4. Proof that the applicant is in compliance with the drug and alcohol testing requirements of BMC 5.20.085.
- C. An applicant shall not be granted an original or renewal permit unless the applicant meets the requirements imposed on chauffeurs in BMC 5.40.030.
- D. If the commission determines that the public convenience and necessity requires issuance of additional taxicab permits in accordance with BMC 5.30.050, the following persons may apply for such a permit:
1. Currently active chauffeurs licensed under Chapters 5.20 through 5.50 BMC with no fewer than two (2) years of continuous experience as a taxicab chauffeur in good standing in Bethel;
 2. Applicants who have not had a felony or misdemeanor conviction entered by a court of competent jurisdiction within five (5) years of the date of application for:
 - a) Assignment, prostitution, solicitation for the purpose of prostitution, offering to secure another for the purpose of prostitution, maintaining vehicle for the purpose of prostitution or accepting money from a prostitute; or
 - b) Sale, transportation, possession or use of any controlled substance as defined by AS 11.71 or a similar law of another jurisdiction, or engaging in an act prohibited under AS 04.11, 04.16 or 04.17.
- E. If the commission decides to issue an additional permit or permits in accordance with this chapter, a taxicab permit may be issued by the commission only if the applicant complies with subsections B through D of this section, and is certified as required by BMC 5.20.150.
- F. Each representation made in an application for an original or renewal permit shall be correct. Any false or misleading statement or misrepresentation as to a material matter in an application shall be grounds for denial of the application for a permit or revocation of a permit.

5.30.050 Issuance of new nontransferable taxicab permits.

- A. The total number of outstanding taxicab permits shall be determined by the public convenience and necessity. Any person or any member of the commission

Introduced by: Council Member Springer
Date: July 28, 2015
Public Hearing: December 8, 2015
January 12, 2016
Action:
Vote:

may initiate commission inquiry into the public convenience and necessity for issuance of additional permits. Hearings regarding public convenience and necessity shall be held to determine if the public convenience and necessity warrants issuance of one (1) or more additional nontransferable permits. The commission shall hold an inquiry into the public convenience and necessity at least once in a twenty-four (24-) month period.

- B. At the hearing conducted pursuant to subsection A of this section, the commission may consider, among other things, evidence of:
1. The public demand for additional taxi service;
 2. The unfulfilled requests for service;
 3. The reasonableness of waiting time for service; and
 4. The economic impact of additional permits on the viability of the existing taxicab industry.
- C. If the commission finds that it is more likely than not, based on the evidence presented at hearing, that the public convenience and necessity would be best served by the issuance of one (1) or more new taxicab permits, such permit or permits shall be issued in the manner provided in subsection D of this section.
- D. No later than ninety (90) days after the commission determines that a new taxicab permit should be issued, the transportation inspector shall conduct a public auction as follows:
1. The auction shall be conducted by sealed bid, and the permit shall be issued to the highest qualified bidder;
 2. To be responsive, a bid must equal or exceed the taxicab permit issuance fees provided for in BMC 5.20.160;
 3. The term "qualified bidder" means a person who meets the requirements of BMC 5.30.040, and tenders the successful full bid price in cash within five (5) days after notice that he or she is the highest bidder;
 4. If the highest bidder is not a qualified bidder, the permit shall be issued to the next highest bidder who is also a qualified bidder. If none of the bidders are

Introduced by: Council Member Springer
Date: July 28, 2015
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also qualified bidders, the transportation inspector shall again offer the permit at auction as provided by this section within one hundred eighty (180) days after the previous auction.

- E. No person may apply for a hearing pursuant to subsection A of this section within one hundred twenty (120) days after one (1) or more new permits authorized for issuance pursuant to this section have been actually issued. The commission may consolidate multiple hearing requests if it deems it appropriate to do so.
- F. A permit, or any interest in a permit, issued pursuant to this section shall not be transferable through sale, lease, rental, power of attorney, or any other manner of conveyance, and shall become void and revert to the commission if the permit is revoked or not renewed in accordance with the provisions of Chapters 5.20 through 5.50 BMC.
- G. Permittees issued nontransferable permits in accordance with this section are subject to all revocation, suspension, and penalty provisions of Chapters 5.20 through 5.50 BMC, as well as all other requirements of Chapters 5.20 through 5.50 BMC.

5.30.055 Taxicabs – Renewal of existing permits.

An application for renewal of an existing taxicab permit made in accordance with BMC 5.30.040 shall be renewed only if the applicant is in compliance with all of the requirements of Chapters 5.20 through 5.50 BMC that apply to taxicabs and taxicab permittees. A permit that is not renewed shall become void and revert to the commission.

5.30.060 Taxicabs – Transfer of existing permit.

- A. A person may transfer an interest (whether financial or proprietary in nature, a security interest, or some other form of interest) in a taxicab permit originally issued prior to December 31, 2000, or any interest in the corporation, joint venture, association, partnership, or other group or entity which owns an interest in a taxicab permit originally issued prior to December 31, 2000, only if the person obtains the prior approval of the transportation inspector.
- B. An application for transfer of a taxicab permit in accordance with subsection A of this section shall be made to the transportation inspector on forms approved by

Introduced by: Council Member Springer
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the transportation inspector and shall be accompanied by the proposed contract for sale or other interest transfer which states the specific consideration to be paid by the transferee, as well as all other material conditions of the sale or other transfer of interest. The application for transfer shall also identify all parties who have or are proposed to have a financial, proprietary, security or other interest in the permit. The application may request other information necessary to determine if the transfer is in the best interests of the public, including but not limited to evidence of the financial ability to meet the consideration requirements of the contract for sale or other interest transfer. If the transferee meets the requirements of this section and all other requirements for obtaining a taxicab permit contained in Chapters 5.20 through 5.50 BMC, and the transportation inspector approves the language of the contract for sale or other interest transfer, the transportation inspector may approve the transfer.

- C. A decision of the transportation inspector with respect to transfer of an interest under this section may be appealed to the commission in accordance with BMC 5.20.100.
- D. If transfer of a permit is not approved in accordance with this section and the permittee no longer wishes to operate under the permit or the permittee is no longer in compliance with the provisions of Chapters 5.20 through 5.50 BMC, the permit shall become void and revert to the commission.
- E. New permits issued in accordance with BMC 5.30.050 shall not be transferable, and shall become void and revert to the commission if the permit is revoked or not renewed in accordance with the provisions of Chapters 5.20 through 5.50 BMC.

5.30.065 Posting of taxicab permit.

The permit for each taxicab, river taxi, limousine or bus shall be posted in the interior of the taxicab, river taxi, limousine or bus in the manner designated by the transportation inspector. No person may operate a taxicab, river taxi, limousine or bus unless the permit is so posted.

5.30.070 Taxicabs – Number of vehicles operated per permit.

- A. Except as otherwise provided in this section, only one (1) vehicle, which shall be designated on the taxicab permit application, may be operated pursuant to that permit.

Introduced by: Council Member Springer
Date: July 28, 2015
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- B. Upon application to the transportation inspector, payment of the appropriate fee, and a demonstration of need, the transportation inspector may authorize operation of a substitute vehicle for a period of time not to exceed thirty (30) consecutive days. The transportation inspector shall be notified prior to substitution of the date, time, and substitution vehicle being placed in service, the permit number utilizing the substitute vehicle, the reason for the use of the substitute vehicle and the signature of the person authorizing the use of the substitute vehicle. If substitution is authorized, the transportation inspector shall subsequently be immediately notified of the date and time the substitute vehicle is removed from service and the original permitted vehicle is placed back in service. The transportation inspector shall require an inspection of the original vehicle before it is returned into service. No person may operate a substitute vehicle under this section unless the substitution has been authorized by the transportation inspector in accordance with this section, and a copy of the authorization is carried in the substitute vehicle at all times.
- C. If the use of the substitute vehicle was occasioned by a mechanical problem or vehicle accident affecting the safe operation of the original vehicle, the transportation inspector may allow a permanent vehicle transfer.
- D. The transportation inspector may permit a permanent vehicle transfer not more than four (4) times before the expiration of the original permit for reasons other than mechanical problems.

5.30.080 Taxicabs – Subscription to dispatch service.

Every taxicab permittee shall subscribe to a dispatch service permitted pursuant to Chapter 5.50 BMC for the taxicab operated under his or her permit. No taxicab may be dispatched by more than one (1) dispatch service. Failure to comply with this section shall be grounds for immediate revocation of a permit or license.

5.30.090 Taxicabs – Vehicle markings.

- A. Every taxicab shall display the trade name under which it operates and the vehicle number assigned to it by the transportation inspector in the area between the back bumper and the top of the trunk of the taxicab on the rear end of the taxicab with permanent contrasting letters and numbers no less than four (4) inches high.

Introduced by: Council Member Springer
Date: July 28, 2015
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- B. Every taxicab shall bear its vehicle number, as assigned to it by the transportation inspector, on all sides of the taxicab with permanent letters no less than four (4) inches high. Every taxicab shall display its vehicle number assigned by the transportation inspector on the front fender adjacent to the front door jam on both the driver and passenger side of the vehicle in numbers no less than four (4) inches high. The number shall be placed in the middle of the fender, but in no event less than two (2) inches above the bottom of the fender, or more than four (4) inches below the top of the fender.
- C. The transportation inspector will provide every taxicab permit holder with reflective decals bearing the assigned vehicle number required to meet the requirements of this section. Taxicab permit holders shall display trade names on vehicles with reflective decals that meet the requirements of this section.
- D. Except as otherwise provided by law, no taxicab may be used or sold for any purpose other than for use as a taxicab until all signs, insignia, license plates, lights or other markings have been removed or an "out of service" sign is posted on the taxicab in the form and manner designated by the transportation inspector.

5.30.100 Required equipment.

In addition to the mechanical equipment required in BMC 5.20.080(D), every taxicab shall have the following equipment:

- A. Every taxicab shall be equipped with an operable two-way radio that receives and transmits a signal only on the frequency used by that taxicab's dispatch service. At no time may a taxicab be equipped with an apparatus capable of monitoring a frequency used by a dispatch service other than that used by that taxicab's dispatch service. The radio of each taxicab shall be identifiable through the dispatch company through which the taxicab is dispatched.
- B. Every taxicab shall be equipped at all times with an interior light of not less than two (2) candlepower arranged so as to illuminate the entire passenger compartment. The light shall be illuminated whenever passengers are being loaded or unloaded from the taxicab between one-half (1/2) hour after sunset of one (1) day and one-half (1/2) hour before sunrise the next day. No shades or blinds shall be drawn over any windows of the taxicab while occupied by a passenger.

Introduced by: Council Member Springer

Date: July 28, 2015

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- C. Every taxicab shall be equipped with a nonflashing light on the exterior of the roof of a type approved by the transportation inspector. The light shall be illuminated only when the taxicab is in service.
- D. All taxicabs, limousines and buses must have factory seat belts for the maximum number of passengers that may be transported in a particular vehicle.
- E. River taxis shall have the following:
1. Four-wheel drive vehicle with at least twelve- (12-) inch clearance;
 2. VHF radio;
 3. Dual battery system;
 4. All equipment listed in subsections A through C of this section in addition to the following: a come-a-long or winch and shovel; ground and air flares; carbon monoxide detector; first aid kit; safe alternate form of heat, i.e., candles, canned heat, etc., one (1) wool blanket, one (1) survival or space blanket for each potential passenger, spare tire, and tools required to change a tire, i.e., jack lug wrench, etc.;
 5. A river taxi driver shall carry clothes appropriate for the weather conditions and the number of passengers for a particular trip, to include but not be limited to, winter hats, boots, gloves, pants and coats.
- F. Every regulated vehicle shall be equipped at all times with a video camera surveillance system and have global positioning system capability. The surveillance and GPS systems shall be capable of recording and storing the data of at least 72 hours of in-service operations. The recorded data shall be stored on board the taxicab or transmitted for storage. The stored data for the immediately preceding 72 hours of recording shall not be altered or manipulated by any person, and shall be made available for review and inspection by the transportation inspector for purposes of enforcement of chapters 5.20, 5.30 and 5.40 or by a peace officer as defined in AS 1.10.060 upon request. For good cause, the Transportation Inspector may order retention of recorded data of specific dates, trips, or incidents for up to two years.

Introduced by: Council Member Springer

Date: July 28, 2015

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1. The video camera surveillance system shall have the capability to operate 24 hours a day, record video only, and be compatible with surveillance during both daytime and nighttime. The surveillance system shall either have continuous operation or be activated by the opening of a door, or some other self-initiating device which does not require the specific decision or action by the chauffeur to activate the surveillance system. The system shall be capable of producing high-quality pictures for law enforcement use. The system shall have cameras facing the front and rear and positioned in a manner that provides views of the regulated vehicle interior that are visible to passerby and does not violate privacy rights. A limousine shall not have video surveillance of the passenger area designed and intended to provide privacy from the chauffeur and public view, but may have a view into that area when a privacy partition or device is open.

2. The global positioning system capability of any regulated vehicle shall either have continuous operation or be activated by a self-initiating device which does not require the specific decision or action by the chauffeur to activate the global positioning system. The global positioning system in taxicabs must be capable of alerting the monitoring station of emergencies. The dispatch company or a company within the municipality approved by the transportation inspector will be the monitoring station for a taxicab's global positioning system.

5.30.120 Insurance required.

- A. Before any permit is issued for any taxicab, river taxi, limousine or bus, the applicant shall furnish to the transportation inspector the insurance policies required by this section, issued by an insurance company that is authorized to do business within the state.
- B. The insurance required by this section for vehicles with a manufacturer's rated seating capacity of six (6) persons or less, or, if a mini-van, six (6) persons or less seating capacity after seat removal to accommodate baggage, shall provide coverage as follows:
 1. Combined single limit for all bodily injury or property damage arising from one (1) accident: three hundred thousand dollars (\$300,000); and
 2. For all persons injured or dead in any one (1) accident caused by an uninsured motorist: One hundred thousand dollars (\$100,000).

Introduced by: Council Member Springer
Date: July 28, 2015
Public Hearing: December 8, 2015
January 12, 2016
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- C. The insurance required by this section for vehicles with a manufacturer's rated seating capacity of seven (7) persons or more, or if a mini-van, seven (7) persons or more seating capacity after seat removal to accommodate baggage, shall provide coverage as follows:
1. Combined single limit for all bodily injury or property damage arising from one (1) accident: Seven hundred thousand dollars (\$700,000); and
 2. For all persons injured or dead in any one (1) accident caused by an uninsured motorist: One hundred thousand dollars (\$100,000).
- D. Every insurance policy or certificate shall contain a clause obligating the insurer or surety to give the transportation inspector written notice no less than thirty (30) days before the cancellation, expiration, nonrenewal, lapse, or other termination of such insurance, unless the specified policy is for a vehicle which will no longer be used as a taxicab. A lapse, cancellation, expiration, nonrenewal, or termination of insurance coverage shall work an automatic suspension of any permit for so long as the permittee is without insurance as required by this section, and it shall be a violation of this chapter to provide taxicab service with a vehicle not insured as required by this section. The insurance policy shall list the city as a certificate holder.

5.30.130 Posting of insurance notice.

Proof of insurance as required by Chapters 5.20 through 5.50 BMC shall be carried in the passenger compartment of all taxicabs at all times.

5.30.140 Records.

- A. Every taxicab, river taxi, and limousine permittee shall maintain a current and accurate daily list of the regulated vehicles operated pursuant to the permit. The daily list shall contain the following information:
1. The name, address, telephone number, chauffeur's license number and expiration of each chauffeur operating such regulated vehicles;
 2. The daily hours worked by each chauffeur operating such regulated vehicles;
 3. The number of days each such regulated vehicle is operated during each calendar month;

Introduced by: Council Member Springer
Date: July 28, 2015
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4. The records maintained pursuant to subsection A of this section as well as many other records related to the operation of the permit shall be retained by the permittee for at least six (6) months and shall be made available upon the request of the transportation commission or the transportation inspector. The transportation inspector may request that the permittee forward the record to him or her on a monthly basis.
- B. The records maintained pursuant to subsection A of this section as well as any other records related to the operation of the permit shall be retained by the permittee for at least six (6) months and shall be made available upon request of the transportation commission or the transportation inspector. The transportation inspector may request that the permittee forward the record to him or her on a monthly basis.

5.30.160 Single use of vehicle.

It is unlawful to use a regulated vehicle for any other transportation service regulated by Chapters 5.20 through 5.50 BMC other than that service which is authorized on the permit.

5.30.170 Vehicle horn honking.

It is unlawful to honk the horn of a taxicab from 10:00 p.m. to 7:00 a.m., Sunday through Thursday, and from 12:00 a.m. to 7:00 a.m., Friday and Saturday.

5.30.180 Safety equipment tampering prohibited.

A. Except for maintenance or repair, no person shall disconnect, cover, misdirect or cause to be non-functional the radio identifier, silent electronic alarm, surveillance or security camera, or global positioning system in a regulated vehicle. Tampering with the safety equipment as described herein is a violation subject to civil penalty of:

1. First violation. \$250.00.
2. Second violation. \$500.00
3. Third violation. \$750.00.
4. Fourth violation. \$1,000.

Introduced by: Council Member Springer
Date: July 28, 2015
Public Hearing: December 8, 2015
January 12, 2016
Action:
Vote:

SECTION 3. Effective Date. This section shall become effective upon passage by the City Council.

ENACTED THIS ___ DAY OF _____ 2015, BY A VOTE OF ___ IN FAVOR AND ___ OPPOSED.

Richard Robb, Mayor

ATTEST:

Lori Strickler, City Clerk

Introduced by: City Manager Capela
Date: December 8, 2015
Public Hearing: January 12, 2016
Action:
Vote:

CITY OF BETHEL, ALASKA

Ordinance #15-35

AN ORDINANCE BY THE BETHEL CITY COUNCIL APPROVING THE DISPOSAL OF CITY PROPERTY, IDENTIFIED AS, AN UNIMPROVED BUILDING (WAREHOUSE) LOCATED ON THE BETHEL CITY DOCK, USS 3230 A&B; BLOCK 20, LOT 3 IN ACCORDANCE WITH 4.08.050 C, DISPOSAL OF PROPERTY, LEASE RENEWAL

WHEREAS, in accordance with Bethel Municipal Code 4.08.030 the City Council may dispose any interest in real property; and

WHEREAS, Alaska Marine Lines has leased an unimproved building (warehouse) located on the Bethel City Dock, USS 3230 A&B; Block 20, Lot 3 from the City of Bethel with a lease term expiration of October 31, 2015; and

WHEREAS, Alaska Marine Lines have continued to pay a monthly lease amount in the amount of \$2,000 for the month of November and December of 2015; and

WHEREAS, Alaska Marine Lines has been current on lease payments and is on a month to month lease in accordance with the previous lease until a new lease can be approved;

WHEREAS, the new lease term will commence from January 1, 2016 through December 31, 2017 with the lease rate of \$2,030 per month plus applicable tax rates;

NOW, THEREFORE BE IT ORDAINED, the City Council hereby authorizes the disposal of property of the unimproved building (warehouse) located on the Bethel City Dock, USS 3230 A&B; Block 20 Lot 3 thorough lease renewal:

SECTION 1. Classification. This ordinance is of a general nature and shall not become a part of the Bethel Municipal Code.

Introduced by: City Manager Capela
Date: December 8, 2015
Public Hearing: January 12, 2016
Action:
Vote:

SECTION 2. Authorization. Pursuant to Bethel Municipal Code 04.08.030 Disposal of Real Property, and Bethel Municipal Code 4.08.050 C.

SECTION 3. Effective Date. This Ordinance shall become effective upon the passage by the Bethel City Council.

BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF BETHEL ALASKA, THIS 12th DAY OF JANUARY 2016, BY A VOTE OF _IN FAVOR AND _ OPPOSED.

Richard Robb, Mayor

ATTEST:

Lori Strickler, City Clerk

Introduced by: Mayor Robb
 Introduction Date: December 8, 2015
 Public Hearing: January 12, 2016

Action:
 Vote:

CITY OF BETHEL, ALASKA
ORDINANCE #15-14(a)

An Ordinance of the Bethel City Council Amending the Adopted Annual FY 2016 Budget

Section 1. That the following sums of money as may be needed or deemed necessary to provide for increased expenses and liabilities of the City of Bethel are hereby appropriated for the corporate purposes and objects of the City hereinafter specified for Fiscal Year 2016.

Section 2. The following is a summary of the changes by fund and department:

Budget Modification 16-01

| | | |
|--------------|---|-----------------------|
| | Increases | |
| 10-56-642 | Legal Services Budget for City Attorney | \$ 25,000.00 |
| | | |
| | Total Increases | \$ 25,000.00 |
| | Decreases | |
| 10-39-900 | Undesignated Unreserved Fund Balance | \$ (25,000) |
| | | |
| | Total Decreases | \$ (25,000.00) |
| TOTAL | Net Change to Appropriations | \$25,000 |

Section 3. Effective Date. This ordinance becomes effective immediately upon adoption.

PASSED AND APPROVED THIS ___DAY OF JANUARY 2016 BY A VOTE OF _ IN FAVOR AND _ OPPOSED.

ATTEST:

 Richard Robb, Mayor

 Lori Strickler, City Clerk

Budget Modification

| | | |
|--------------|---|-----------------|
| | Increases | |
| 10-56-642 | Legal Services Budget for City Attorney | \$66,000 |
| | | |
| | | |
| | Total Increases | \$66,000 |
| | Decreases | |
| 10-65-501 | Bethel Police Department | \$30,000 |
| | Fire Department | \$6,000 |
| | IT Department | \$6,000 |
| | Finance Department | \$6,000 |
| | Public Works | \$6,000 |
| | Planning Department | \$6,000 |
| | Port | \$6,000 |
| | | |
| | | |
| | | \$66,000 |
| TOTAL | Net Change to Appropriations | \$0 |



CITY OF BETHEL

Finance Director's Office

P.O. Box 1388

Bethel, Alaska 99559

Ph. (907) 543-1376

Fax (907) 543-5294

Memorandum

To: Bethel City Council
Cc: Ann K. Capela
From: Hansel L Mathlaw, Finance Director
Date: December 17, 2015
Re: Justifications for Budget Modification Request

Listed below is an explanation for the budget modification requested in Ordinance #15-14A

The City Attorney's Office is requesting an increase to the budget of \$66,000 in order to supplement the now depleted legal assistance budget line item.

During the budget process, the city council was made aware that there were three matters which could become costly: one where the city attorney was conflicted out so it had to go to outside counsel (a personnel matter); an attempt by the department directors to unionize which required a specialist in labor organizations and the bankruptcy for the Omni Corporation (also requiring a specialist in bankruptcy). To date the union matter has taken a significant amount of resources, approximately \$48,000. While the trial is now completed and expenses are expected to significantly reduce, the results of the trial are not known.

Some of the larger legal expenses this year have been as follows:

| | |
|------------------------------|----------|
| Alcohol Issues: | \$13,600 |
| Department Director's Union: | \$48,000 |
| Personnel Matter | \$22,000 |
| Omni Bankruptcy: | \$2,200 |

New Business

Introduced by: Mayor Robb
Date: January 12, 2016
Action:
Vote:

CITY OF BETHEL, ALASKA

Resolution # 16-01

A RESOLUTION BY THE BETHEL CITY COUNCIL SUPPORTING GOVERNOR WALKER'S ALLOCATION OF \$7,129,765 TO LOWER KUSKOKWIM SCHOOL DISTRICT-BETHEL REGIONAL HIGH SCHOOL CENTRAL KITCHEN AND MULTIPURPOSE ADDITION FOR FISCAL YEAR 2017

WHEREAS, Governor Walker, included in his proposed capital budget for Fiscal Year 2017, \$7,129,765 for the Lower Kuskokwim School District (LKSD) Bethel Regional High School Central Kitchen and Multipurpose Addition;

WHEREAS, after the fire at the Ayaprun Elitnaurviat elementary school/Kuskokwim Learning Academy in November, the Bethel schools have been without a central kitchen for their approximately 1,300 students;

WHEREAS, Bethel Regional High School students do not have a cafeteria, many students scatter the school hallways during lunch service;

WHEREAS, the funding for this project provides for an addition to the Bethel Regional High School which is currently operating at 111 percent capacity;

NOW, THEREFORE, BE IT RESOLVED that Bethel City Council supports Governor Walker's allocation of \$7,129,765 in the Fiscal Year 2017 State Budget for the Lower Kuskokwim School District-Bethel Regional High School Central Kitchen and Multipurpose Addition.

ENACTED THIS ___ DAY OF JANUARY 2016 BY A VOTE OF ___ IN FAVOR AND ___ OPPOSED.

Richard Robb, Mayor

ATTEST:

Lori Strickler, City Clerk

CITY OF BETHEL, ALASKA

Resolution # 16-02

A RESOLUTION BY THE BETHEL CITY COUNCIL ADDING A SIXTH FUNDING PRIORITY FOR THE FY 2017 STATE OF ALASKA CAPITAL BUDGET

WHEREAS, the Bethel City Council is a seven-member body elected by resident voters of Bethel to act in the best interest of the community and intends to exhibit transparency, oversight, and accountability for all funds awarded through this request;

WHEREAS, the funding priorities established herein are rank-ordered and vital to the well-being of the community and municipality of Bethel;

WHEREAS, the Bethel City Council approved Resolution #15-17 on November 10, 2015 that set the following five City of Bethel priority requests for FY 2017 State Capital funding:

1. Sewage Lagoon Rehabilitation and Excavation (\$9,200,000 request)
2. Institutional Corridor Water Delivery System – Phase 2 (\$4,500,000 request)
3. Road Around H-Marker Lake (\$1,820,752 request)
4. Water and Sewer Trucks (\$2,660,000 request)
5. Bethel Small Boat Harbor Improvements – Final Phase (\$2,500,000 request)

WHEREAS, the City of Bethel is using this resolution to add a sixth priority to its FY 2017 State of Alaska funding request:

6. Recovered Heat Project (\$280,000 request)

WHEREAS, a contract dispute between the City of Bethel and Bethel Utilities Corporation (BUC) resulted in a discontinuation of waste heat (now called “recovered heat”) from BUC to the City in 2006;

WHEREAS, the City has five buildings that were formerly connected to recovered heat pipes: (1) City Hall, (2) Bethel Courthouse, (3) Fire Station, and (4) Phillips Alcohol Treatment Center (2 buildings);

Introduced by: Ann Capela, City Manager
Date: January 12, 2016
Action:
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WHEREAS, Alaska Village Electric Cooperative bought the electric utility in Bethel from Bethel Utilities Corporation and began operating the power plant in 2014;

WHEREAS, the City and AVEC have discussed the reconnection of the City's five buildings and AVEC has been encouraging the City to secure funds to pay for equipment and installations on its side of the connection so that reconnection could occur as early as summer 2016;

WHEREAS, once the recovered heat project is completed, the City expects to save money over the next twenty years by paying less for recovered heat that it would have paid for diesel fuel to heat the buildings;

NOW, THEREFORE BE IT RESOLVED that the Bethel City Council hereby requests that the State of Alaska provide \$280,000 in its FY 2017 Capital Budget to fund the Bethel Recovered Heat Project;

THEREFORE, BE IT FURTHER RESOLVED that the Bethel City Council hereby sets and affirms the following six project priorities for the City's FY 2017 State of Alaska Capital Budget funding request: (1) Sewage Lagoon Rehabilitation and Excavation, (2) Institutional Corridor Water Delivery System – Phase 2, (3) Road Around H-Marker Lake, (4) Ten Water and Sewer Trucks, and (5) Bethel Small Boat Harbor Improvements – Final Phase, (6) Recovered Heat Project (\$280,000).

ENACTED THIS 12th DAY OF JANUARY 2016 BY A VOTE OF _____ IN FAVOR AND _____ OPPOSED.

Richard Robb, Mayor

ATTEST:

Lori Strickler, City Clerk

Council Member
 Introduced by: Hoffman
 Introduction Date: January 12, 2016
 Public Hearing: January 26, 2016
 Action:
 Vote:

CITY OF BETHEL, ALASKA

ORDINANCE #15-14(b)

An Ordinance of the Bethel City Council Amending the Adopted Annual FY 2016 Budget to Provide for the Purchasing of Laptops for City Council Members

Section 1. That the following sums of money as may be needed or deemed necessary to provide for increased expenses and liabilities of the City of Bethel are hereby appropriated for the corporate purposes and objects of the City hereinafter specified for Fiscal Year 2016.

Section 2. The following is a summary of the changes by fund and department:

Budget Modification 16-02

| | | |
|--------------|---|----------------|
| | Increases | |
| 10-52-683 | City Clerk-Minor Equipment | \$3,200 |
| | | |
| | Total Increases | \$3,200 |
| | Decreases | |
| 10-55-683 | Information Technology Services-Minor Equipment | \$3,200 |
| | | |
| | Total Decreases | \$3,200 |
| TOTAL | Net Change to Appropriations | \$0 |

TOTAL CHANGE TO OVERALL CITY BUDGET

| | | |
|--|---|----------|
| | <i>Change to Revenues Increase/(Decrease)</i> | |
| | <i>Change to Appropriations Increase/(Decrease)</i> | <i>0</i> |
| | These changes <u>INCREASE</u> ↑ the overall expenditures/expenses of the City by | 0 |

Section 3. Effective Date. This ordinance becomes effective immediately upon adoption.

PASSED AND APPROVED THIS _____ DAY OF JANUARY 2016 BY A VOTE OF _____ IN FAVOR AND _____ OPPOSED.

ATTEST:

 Richard Robb, Mayor

 Lori Strickler, City Clerk

City of Bethel, Alaska

City Clerk's Office

MEMORANDUM

TO: City Council Members
FROM: Lori Strickler, City Clerk *LS*
DATE: January 5, 2016
SUBJECT: Electronic Devices for City Council Members

The City of Bethel recognizes the benefits of utilizing digital communication and information, and supports the utilization of electronic devices such as laptops for the City Council.

The electronic device, Internet and email access provided are tools for conducting City business. Thus, City use of such tools will be primarily for City business related purposes; i.e., to review City Council agenda materials, obtaining useful information for City-related business communications as appropriate.

With the approval of the budget modification listed in Budget Ordinance 15-14 (b), the City Administration would work with the City Clerk's Office to purchase laptops for Council to ensure the most appropriate devices are procured.

The technological life of an issued device might not exceed three years; therefore, the electronic device will be assessed every three years and, if necessary, the City will purchase upgraded devices through the budgeting process.

It is the recommendation of the City Clerk's Office, the Council considers and adopts a use policy if laptops are issued.

Introduced by: Council Member Fansler
Date: January 12, 2016
Public Hearing:
Action:
Vote:

CITY OF BETHEL, ALASKA

Ordinance #16-01

AN ORDINANCE BY THE BETHEL CITY COUNCIL ESTABLISHING A LIMITED MORATORIUM ON COMMERCIAL MARIJUANA

WHEREAS, on November 4, 2014 Alaskan voters approved Ballot Measure 2, An Act to Tax and Regulate the Production, Sale, and Use of Marijuana; codified as Alaska Statute Chapter 17.38;

WHEREAS, the initiative, which went into effect on February 24, 2015, requires the State to begin accepting and processing applications for the registration of marijuana establishments by February 24, 2016;

WHEREAS, subsequently, the State established the Marijuana Control Board, which has proposed regulations for commercial marijuana establishments;

WHEREAS, neither Ballot 2, nor the proposed regulations by the Marijuana Control Board have specifically addressed Marijuana Clubs, which allow for the consumption of marijuana or marijuana products on the premises;

WHEREAS, the Alaska Statute Chapter 17.38 creates classes of registrations, licenses, or permits to enable the lawful conduct of certain types of marijuana commerce and businesses;

WHEREAS, the conduct of these commercial and business activities is unlawful without the appropriate registration, license or permit;

WHEREAS, AS 17.38.110 Local Control, enacted by Ballot Measure 2, empowers municipalities to limit and prohibit the operation of these businesses by enactment of ordinance or voter initiative;

WHEREAS, the initiative also authorizes local governments to enact legislation concerning the time, place and manner related to the operation of registered marijuana establishments;

WHEREAS, it is in the public's best interest that the City of Bethel thoughtfully consider and adopt land use regulations that ensure the orderly development and regulation of marijuana establishments, including sale, cultivation, manufacture, transport, and/or consumption of marijuana by persons

Introduced by: Council Member Fansler
Date: January 12, 2016
Public Hearing:
Action:
Vote:

assembled within a commercial or industrial structure within the City of Bethel;

WHEREAS, it is also in the best interest of the City of Bethel to establish a moratorium prohibiting the consumption of marijuana and marijuana products in Marijuana Clubs, until further guidance is provided by the Marijuana Control Board or State Legislature or local ordinance ensuring minimum health and safety standards are met to protect consumers, the public, first responders, and employees of such establishments;

WHEREAS, the purpose of this moratorium is to allow the City of Bethel a reasonable period of time to consider and enact legislation concerning the operation of marijuana establishments, including Marijuana Clubs, within the City

WHEREAS, enacting a six (6) month moratorium on the operation of certain commercial marijuana businesses does not infringe upon personal use rights guaranteed by Alaska Statute Chapter 17.38;

WHEREAS, Alaska Statute 17.38.110 Local Control, specifically allows for municipalities to prohibit and regulate commercial marijuana establishments in a manner that does not conflict with the applicable statutes and, the City, as a second class municipality, has all legislative powers not prohibited by law.

THEREFORE BE IT ORDAINED by the City Council of Bethel, Alaska, as follows:

SECTION 1. Form. This is a non-codified Ordinance and shall not become part of the Bethel Municipal Code.

SECTION 2. Moratorium. The City Council finds and determines a situation affecting the life, health, property, and the public peace exists in that, the processing of any land use, zoning, or licensing approvals for marijuana operations with the City are not in the public's interest until such time the City has adopted marijuana regulations.

To address this situation, the City Council, imposes a six month moratorium on the processing of any land use approvals or licensing applications for marijuana establishment businesses within the City of Bethel.

Section 3. Definition. "Marijuana Club" means a licensed or non-licensed place where: (1) Marijuana or marijuana products are received or kept, or to which marijuana or marijuana products are brought (2) for consumption by the public or members of a club, association, or corporation on the licensed or non-licensed premises and (3) any

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fee, including but not limited to a membership fee, cover charge, or the sale of food, ice, mixers, or other drinks occurs, or a fee is charged for the use of marijuana accessories for use in the consumption of marijuana or marijuana products.

Section 4. Disclaimer. Nothing in this Ordinance endorses or is intended to endorse the legality of a Marijuana Business or Marijuana Club operating within the State of Alaska.

Section 5. Effective Date. This ordinance shall become effective immediately upon the adoption by the City Council.

**BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF BETHEL, ALASKA
THIS ____ DAY OF JANUARY 2016, BY A VOTE OF ____ IN FAVOR AND ____
OPPOSED.**

Richard Robb, Mayor

ATTEST:

Lori Strickler, City Clerk



Top Twelve Marijuana Licensing FAQs

Q1: Can I apply for a marijuana license right now?

A1: No, for two reasons—

- 1) The regulations have been adopted by the Marijuana Control Board but applications cannot be accepted until the regulations take effect. Applicants must initiate the application process by filling out an online form that will be available by February 24, 2016. See Question 8 for additional information about the regulations timeline.
- 2) The Marijuana Control Board has not yet approved the application form; the board will do so at its meeting on February 11, 2016.

Q2: Where can I find the online application?

A2: The forms will be available on the [Alcohol and Marijuana Control Office \(AMCO\) website](#) after the board approves them and once the regulations have taken effect.

Q3: When will licenses be issued?

A3: Licenses will be issued within 90 days of receipt of a completed application, as outlined in the statute and regulations. The exact date is dependent upon several factors including the 1) type of license applied for, 2) response time from local governments, and 3) the implementation of the marijuana inventory tracking system.

- 1) Type of license and completed application – AS 17.38.100(b) calls for the board to begin accepting and processing applications one year after the effective date of the act; therefore, applications will be accepted beginning on February 24, 2016. The board will grant or deny an application for a license within 90 days after a *completed* application is received. It is possible the Marijuana Control Board will issue testing facility and cultivation facility licenses first, with retail store and product manufacturing facility licenses to follow. This sequential issuing of license types may be necessary so the latter license types can have legally grown and tracked marijuana in their inventory before opening for business.
- 2) Response time from local governments – After the director of the Alcohol and Marijuana Control Office deems an application to be complete, staff will transmit the application to the local government with jurisdiction over the proposed licensed premises. The local government has 60 days from the date of receipt of the notice of the application to file a protest to the application or waive its right to protest. If a protest is received, the Marijuana Control Board will consider the application and protest at its next meeting.
- 3) Marijuana inventory tracking system – All marijuana license types will be required to use the State of Alaska-selected marijuana inventory tracking system to assure that marijuana sold in licensed retail stores was grown, produced and tested by licensed establishments. The

board will not issue any licenses before the marijuana inventory tracking system is implemented; the anticipated date of implementation is May 23, 2016.

Q4: How many licenses will the MCB issue?

A4: The Marijuana Control Board is not limited in the number of marijuana licenses it can issue at the state level. However, AS 17.38.110(b) provides that local governments can restrict the time, place, manner and number of marijuana licenses.

Q5: Can I submit a paper application for a marijuana license?

A5: No, the regulations anticipate that the entire process will be conducted electronically, other than attachment of non-electronic documents such as payment and fingerprint cards. 3 AAC 306.020 states that the application must be initiated electronically; the completed application and fees may be filed electronically, or mailed, or delivered to the director at the office of the board.

Q6: Why do I have to initiate my application online?

A6: By regulation, applications must be submitted electronically in order for applicants to demonstrate their capability to enter and submit data/documents electronically. All marijuana licensees are required to use the statewide marijuana inventory tracking system, which is electronic and requires a stable internet connection and basic computer literacy.

Q7: Where do I get the marijuana regulations?

A7: You may download and save the [final regulations](#) as amended and adopted by the Marijuana Control Board. Because of the length of the packet, if you choose to print the regulations you may want to consider printing two pages on one sheet of paper, i.e., the “booklet” option on your print properties screen.

Q8: What happens now that the Marijuana Control Board has adopted the regulations?

A8: The Department of Law is currently reviewing the regulations and will send them to Lt. Governor Mallott once their review is complete. The regulations will take effect 30 days after the Lt. Governor signs them into law. Lt. Governor Mallott will need to sign the regulations by January 24, 2016 in order for the Alcohol and Marijuana Control Office to begin accepting online applications by February 24, 2016, as outlined in AS 17.38.100(b).

Q9: Can I own more than one license?

A9: Yes, with one exception—testing facility licenses are independent of all other license types. According to 3 AAC 306.610, a licensed marijuana testing facility may not have any licensee, employee, or agent who holds any type of marijuana establishment license other than a testing facility license.

Q10: Can I own more than one license type at the same premises?

A10: Yes, except as set out in Question 9.

Q11: The location of the premises I am considering is near a park. Is that allowed?

A11: The only location rules defined by the State of Alaska are the buffer zones set out in 3 AAC 306.010(a), which prohibit a marijuana establishment license from being issued within 500 feet of a school, recreation or youth center (defined in 3 AAC 306.900(35)), a building in which religious services are regularly conducted, or a correctional facility. Please see the regulation for instructions regarding how to measure the distance. All other zoning issues are locally established; contact your local government to inquire about zoning restrictions.

Q12: What can I do now, since I cannot apply for a license yet?

A12: Prepare to submit your application—

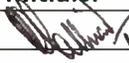
- 1) Read 3 AAC 306 articles 1, 7, 8, 9 and the specific article(s) that pertains to the type of license(s) you plan to apply for. When you apply for a license, you are stating that you have read and understand all of the marijuana regulations, and are prepared to follow them.
- 2) Work on your operating plan. All license types are required to submit an operating plan with their application. Requirements for the operating plan are set forth in 3 AAC 304.020(c). The format in which the operating plan will have to be submitted will be approved by the Marijuana Control Board on February 11, 2016. In the meantime, you can begin drafting your operating plan based on the information requirements outlined in the regulations.
- 3) Attend the Marijuana Control Board meeting on February 11, 2016 in Juneau. A public call-in number will be available for those unable to attend in person.

City of Bethel Action Memorandum

| | | | |
|-------------------------|------------------|-----------------------------------|---------------------------------|
| Action memorandum No. | 16-01 | | |
| Date action introduced: | January 12, 2016 | Introduced by: | Mayor Robb |
| Date action taken: | | <input type="checkbox"/> Approved | <input type="checkbox"/> Denied |
| Confirmed by: | | | |

SUBJECT/ACTION:

Approve Mayor's reappointment of Delbert Egoak to the Public Works Committee.

| Route to: | Department/Individual: | Initials: | Remarks: |
|-----------|--------------------------|---|----------|
| | M. Lakahni, Public Works |  | 12/15/15 |
| | | | |

Attachment(s): None

| Amount of fiscal impact | | Account information: |
|-------------------------|------------------|----------------------|
| X | No fiscal impact | |

Action memorandum 16-01 is sponsored by the Mayor at the request of the City Clerk.

Delbert Egoak has requested re-appointment to the Public Committee. If appointed, he would be appointed to a term of three years with a term expiration of December 31, 2018.

City of Bethel Action Memorandum

| | | | |
|-------------------------|--|----------------|--------|
| Action memorandum No. | | | |
| Date action introduced: | | Introduced by: | |
| Date action taken: | | Approved | Denied |
| Confirmed by: | | | |

| Route to: | Department/Individual: | Initials: | Remarks: |
|-----------|------------------------|-----------|----------|
| | | | |
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Attachment(s):

| Amount of fiscal impact: | Account information: |
|--------------------------|---|
| | No fiscal impact |
| | Funds are budgeted for. |
| | Funds are not budgeted. Budget modification is required. |

2016 Regular City Council Meeting Dates

| | | |
|------------------|----|----|
| January | 12 | 26 |
| February | 9 | 23 |
| March | 8 | 22 |
| April | 12 | 26 |
| May | 10 | 24 |
| June | 14 | 28 |
| July | 12 | 26 |
| August | 9 | 23 |
| September | 13 | 27 |
| October | 11 | 25 |
| November | 8 | 22 |
| December | 13 | NA |

November 8, 2016 is an Election day, the City Clerk's Office will not be available for the Council Meeting. Administration will need to designate staff for this meeting. The second meeting in December would be held on the 27th. If the Council wishes to hold a meeting that day, the Action Memo should be amended.

City of Bethel Action Memorandum

| | | | |
|-------------------------|------------|-----------------------------------|---------------------------------|
| Action memorandum No. | 16-03 | | |
| Date action introduced: | 01-12-2016 | Introduced by: | Council Member Herman |
| Date action taken: | | <input type="checkbox"/> Approved | <input type="checkbox"/> Denied |
| Confirmed by: | | | |

SUBJECT/ACTION: Direct Administration to submit an Application for Pledge Designation for The Technical Assistance (NOTA) for Remove Alaska Communities Energy Efficiency Competition and prepare for Phase 2 requirements.

| Route to: | Department/Individual: | Initials: | Remarks: |
|-----------|------------------------|-----------|----------|
| X | Finance | | |
| X | City Manager | | |
| X | Public Works Director | | |

Notice of Opportunity; Summary page from U.S. Department of Energy.

| Amount of fiscal impact | | Account information: |
|------------------------------|-----------------------------|---|
| Administrative time required | Funds are not budgeted for. | Administration, Public Works, and Finance |

By submitting an Application for Pledge, due on January 26, 2016, the City will be making a commitment to try to reduce the communities per capita energy usage by at least 15% by 2020. To do this, the City would need to establish agreements among all local leadership to work towards the pledge.

The team would need to develop a community-wide plan and schedule to achieve energy savings, as well as to identify and develop methods to track energy use and the impact of energy efficiency. This plan would need to be submitted by March 31, 2016.

Phase 1 is a designation program that recognizes communities that are committed to reducing energy use as well as a willingness to participate in the peer networking opportunity. In participating in Phase 1, the community is encouraged to provide baseline energy use data to include building inventory, energy use measurement and benchmarking. The application to be included with the Pledge Form will include population size, remote location, current energy use, plans to reduce energy use, cost of current energy use estimate and corresponding methodology.

Phase 2, will provide Technical Assistance for selected communities to gather baseline energy data and develop plans to implement energy efficiency improvement projects. If selected for Phase 2, we could receive Technical Assistance valued between \$5,000 and \$100,000, and be eligible to apply for future funding opportunities.

City of Bethel Action Memorandum

| | | | |
|-------------------------|------------|-----------------------------------|---------------------------------|
| Action memorandum No. | 16-03 | | |
| Date action introduced: | 01-12-2016 | Introduced by: | Council Member Herman |
| Date action taken: | | <input type="checkbox"/> Approved | <input type="checkbox"/> Denied |
| Confirmed by: | | | |

Successful applications will focus on energy efficiency improvements in key areas such as, heating and weatherization, community infrastructure with high energy usage/costs such as but not limited to, water treatment and distribution systems as well as electrical efficiency improvements. Examples of projects that could be developed under Phase 2 are: Weatherization and retrofitting, developing and implementing improved long-term maintenance programs; heat pumps; biomass fueled heating systems; heat recovery systems; remote monitoring systems; digital control systems; upgrades to generators and power controls; water treatment system operations improvements; LED lighting and outdoor lighting upgrades; more efficient boilers; and combined heat and power.



U.S. DEPARTMENT OF ENERGY

Remote Alaskan Community Energy Efficiency Competition Community Efficiency Champion Pledge

The Department of Energy's (DOE's) Remote Alaska Communities Energy Efficiency (RACEE) Competition is intended to significantly accelerate efforts by remote Alaskan communities and native Alaskan villages to adopt sustainable energy strategies through a competitive effort to elicit the best approaches. To participate in this effort, Communities commit to improving energy use and through that commitment will gain access to a Community Efficiency network.

The Community Efficiency Champion Agrees to:

✓✓ Commit

- ◆ Publicly pledge to a reduce per capita energy usage by at least 15% by 2020 across the community
- ◆ Establish agreement among all local leadership to work together toward the pledge and to appoint a single Point of Contact for this project
- ◆ Participate in the Community Efficiency Champion peer-network to share information and support other Remote Alaskan Communities in improving energy efficiency

✓✓ Take Action

- ◆ Develop a community-wide plan and schedule to achieve energy savings pledge
- ◆ Identify and develop methods to track energy use and the impact of energy efficiency measures

✓✓ Report Results

- ◆ Share information on the energy efficiency implementation models used to achieve the energy savings pledge
- ◆ Provide regular quarterly progress reports on energy efficiency improvements, energy savings across the community, and energy performance at the facility level as the basis for recognition

The Department of Energy Agrees to:

✓✓ Assist

- ◆ Provide targeted technical assistance (TA) resources, including access to TA partners, DOE and Alaska-specific energy analysis software tools, training and education activities, and technical guidance documents, to support Community Efficiency Champions' commitments to measure, track, and reduce energy use
- ◆ Collaborate, via TA partners, with community Efficiency Champion on a regular basis
- ◆ Provide financial assistance opportunity open only to Community Champion TA recipients to implement community energy plans.

✓✓ Connect

- ◆ Establish a Community Efficiency network to connect Champions with peer communities to foster the exchange of information and tools needed to make more informed, strategic decisions regarding their energy plans

✓✓ Recognize Success

- ◆ Provide national recognition to Champion for achieving program milestones and energy efficiency results
- ◆ Showcase Community Energy Champions who leverage, develop, and share innovative and cost effective implementation models



U.S. DEPARTMENT OF ENERGY

Remote Alaskan Community Energy Efficiency Competition Community Efficiency Champion Pledge Agreement

Community Name:

Population:

Energy data for this community:

What methods/formats/tools (ARIS, AEA inventory template and protocols, PCE or other relevant databases) were used to compile the Energy Data:

Is the Applicant a current or former recipient of AEA program? (If yes, please describe).

Community Information:

Please provide 2-4 sentences to describe the community, including proximity to large population center, major employer type and name, economic burden of energy on the community and any other major issues that affect the community.

Energy Strategy:

Please describe how you plan to reduce energy use in 2-4 sentences. Include past successes with energy efficiency projects, barriers to energy efficiency projects and any TA you have received on energy efficiency projects. Name and describe why the potential building or project would help the Community achieve their pledge, including estimated costs, suggested technical providers and partners to implement projects. Please identify the source of the estimates.



U.S. DEPARTMENT OF ENERGY

General Terms

- ◆ Both parties concur that this agreement is wholly voluntary and may be terminated by either party at any time, and for any reason, with no penalty.
- ◆ Community Efficiency Champions will not construe, claim, or imply that its participation in the RACEE Competition constitutes federal government approval, acceptance, or endorsement of anything other than Champion's commitment to the program.
- ◆ The Community Efficiency Champion understands its participation in the RACEE Competition does not constitute federal government endorsement of Community Efficiency Champions or its buildings, homes, products, services, or industrial facilities.
- ◆ The Community Efficiency Champion understands that the activities it undertakes in connection with the RACEE Competition are voluntary and not intended to provide services to the federal government. Technical Assistance Organizations that partner with the Community Efficiency Champion on the TA projects will not submit a claim for compensation to any federal agency.
- ◆ My community/native Alaskan village is committed to at least a 15% reduction in energy use on a per capita basis by 2020, and agrees to the General Terms of the RACEE Competition [for more than three signatures, add additional signatures and contact information below].

Community/Government Leader (signature)

Contact Information: [affiliation, title, address, phone, email]

Community/Government Leader (signature)

Contact Information: [affiliation, title, address, phone, email]

Community/Government Leader (signature)

Contact Information: [affiliation, title, address, phone, email]

DE-FOA-0001479: Notice of Opportunity for Technical Assistance (NOTA) for Remote Alaska Communities Energy Efficiency Competition

Fiscal Year 2016

Office of Energy Efficiency and Renewable Energy

And

Office of Indian Energy Policy and Programs

| Key Dates | |
|---|--|
| Notice of Technical Assistance Issue Date | December 18, 2015 |
| Informational Webinar (Optional) | Please register for Remote Alaska Communities Energy Efficiency Competition Notice of Technical Assistance Webinar on December 22, 2015. Slides will be available on EERE Exchange after the webinar. |
| Submission Deadline for Applications | Phase 1: Applications for Pledge Designation may be submitted beginning December 18, 2015 until 5 p.m. ET on January 26, 2016 date. Phase 2: Applications for Energy Efficiency Technical Assistance may be submitted beginning March 1, 2016 until 5p.m. ET on March 31, 2016. |
| Expected Date for EERE Selection Notifications | For Phase 1: February 24, 2016 For Phase 2: April 27, 2016 |
| Summary Information | |
| Means of Submission | Applications for both Phases will be accepted: <ul style="list-style-type: none"> • online through the online application portal; EERE Exchange at https://eere-Exchange.energy.gov, • via email at AlaskaCompetition@hq.doe.gov • via fax at 240-562-1640 |
| Total Value of Technical Assistance to be Provided | Up to \$600,000 |
| Value of Technical Assistance Provided Per Project | DOE anticipates providing approximately \$5,000 to \$100,000 per selected project in the form of Technical Assistance provided by Technical Assistance teams. |
| Period of Performance | For Phase 1: The pledge designation and Community Efficiency Champion peer network will be active for up to 48 months. For Phase 2: Technical Assistance period of performance will be for up to 36 months. |
| Eligible Entities | For Phase 1: Alaskan communities with no more than 8,000 residents For Phase 2: Entities designated as Community Efficiency Champions under Phase 1 For detailed Eligibility Qualifications refer to Section II. D. of this NOTA |
| Cost Share Requirement | There is no Cost Share Requirement for either Phase under this Notice |
| Submission of Multiple Applications | Applications may request Technical Assistance for multiple projects. Only one application may be submitted per community. Though an organization may apply on behalf of multiple communities, only one application may be submitted per community. |
| Additional Information | Additional information can be found at http://energy.gov/remote-alaskan-communities-energy-efficiency-competition |
| Questions | Questions may be directed to AlaskaCompetition@hq.doe.gov . or via phone to U. S. Dept. of Energy, Golden Field Office 720-356-1764 |

SECTION I: DESCRIPTION AND PHASE

A. SUMMARY

The purpose of this Notice of Technical Assistance (NOTA) is to support the goals of the Department of Energy's (DOE) Remote Alaskan Communities Energy Efficiency Competition (RACEE Competition), announced by President Obama.¹

The RACEE Competition will empower Alaskan communities and native Alaskan villages to develop effective tools to advance the use of reliable, affordable, and energy efficient solutions that are replicable throughout Alaska and other Arctic regions. This NOTA is intended to implement the first two phases of the RACEE Competition: Phase 1 will designate qualified Alaskan communities that pledge to reduce energy use as "Community Efficiency Champions". These "Champions" will gain access to a peer network and become qualified to apply for Phase 2, which will provide Technical Assistance (TA) to selected Community Efficiency Champions.

Applicants that become designated as Community Efficiency Champions will be expected to actively share information, best practices and lessons learned with their peers related to their energy efficiency plans and actions. This will be done through quarterly reporting for Phase II recipients and participation in monthly peer network activities for all recipients.

B. GOALS

DOE has several goals for the RACEE Competition that should be kept in mind by Applicants to this NOTA. Some of those goals include:

- Accelerating efforts by remote Alaskan communities to adopt sustainable energy strategies and technologies;
- Addressing high energy costs by incentivizing clean energy and energy-efficiency solutions;
- Empowering Alaskan communities to develop solutions that can effectively advance the use of reliable, affordable clean-energy and energy-efficient solutions that can be replicated throughout Alaska and other Arctic regions.
- Engaging with existing convening efforts and Technical Assistance expertise by Alaska stakeholders to foster or enhance peer networks and benefit all Community Efficiency Champions.

C. BACKGROUND

DOE coordinates with the Arctic Executive Steering Committee (AESC), established in January 2015 by executive order "to prepare the Nation for a changing Arctic and enhance coordination of national efforts in the Arctic". DOE's Office of Energy Efficiency and Renewable Energy (EERE) and the Office of Indian Energy Policy and Programs (IE) are collaborating to fund and develop the RACEE Competition and engage partners and stakeholders. DOE is focused on near- and

¹ FACT SHEET: President Obama Announces New Investments to Combat Climate Change and Assist Remote Alaskan Communities, <https://www.whitehouse.gov/the-press-office/2015/09/02/fact-sheet-president-obama-announces-new-investmentscombat-climate>

mid-term results that can be replicated in other Arctic communities. Accordingly, emphasis will be on projects and activities with the greatest potential to create effective and replicable solutions, specifically those that assist DOE in supporting the remote Alaskan communities and native villages via peer-to-peer exchange.

D. PROGRAM STRUCTURE

This Notice is structured with two Phases. Phase 1 is a designation program that recognizes local and tribal communities in Alaska that are committed to reducing energy use as “Community Efficiency Champions”. This designation will provide access to a Community Efficiency Champion peer network and eligibility to apply to Phase 2. Phase 2 will provide Technical Assistance for selected communities to gather baseline energy data and develop plans to implement energy efficiency improvement projects. In addition, communities selected to receive Technical Assistance under Phase 2 will be eligible to apply for a future Funding Opportunity Announcement for funding to implement plans developed under this NOTA.

As described in more detail below, the designated Community Efficiency Champions will have the opportunity to access existing Federal Technical Assistance programs and be eligible to compete, through submission of a full application, for the Phase 2 targeted Technical Assistance from the Department of Energy (DOE). For Phase 2, if selected, it is anticipated most individual projects would receive Technical Assistance valued between \$5,000 and \$100,000.

In addition to the designation and targeted Technical Assistance opportunities, all designated Community Efficiency Champions communities will be invited to participate in a Peer Network convened by the Alaska partner. The network is intended to empower communities with the information and tools needed to make more informed, strategic decisions regarding their energy future and will provide great benefit, regardless of their participation in the NOTA Phase 2. This will allow communities facing similar problems and similar contexts to learn from each other. To accomplish this, the Alaska partner will connect with and potentially grow existing regional peer networks.

For projects selected under Phase 2 of this NOTA, DOE and its Alaska partners will provide tailored hands-on Technical Assistance to the selected Community Efficiency Champions through the use of specifically assembled Technical Assistance teams. Members of these teams will be subject matter and technical experts in areas such as architecture, building science, finance, planning, project management, technologies, policy, regulation, etc. Significant participants of these teams will be selected at DOE’s and its Alaska partner’s discretion and could include Technical Assistance providers already providing assistance in Alaska, and DOE’s Laboratory System. Other entities may be added to the teams as necessary.

DOE anticipates entering into up to 20 agreements to provide Technical Assistance to selected organizations under Phase 2 of this Notice. The actual number of agreements and the value of Technical Assistance provided to each selected project will depend on the amount of Technical Assistance required by selected projects and the amount of funding available to support the Technical Assistance.

The period of performance of any individual agreements will be negotiated to accommodate the specific project being supported. The period of performance for typical projects will depend on project complexity and other factors, and will not exceed 36 months. Communities selected to receive Technical Assistance will also be eligible to apply to a Funding Opportunity Announcement (FOA) to receive funding to implement the plans developed. This FOA is expected to be opened in Summer 2016, though Technical Assistance activities may extend beyond the FOA dates.

Technical Assistance provided under this Notice is designed to help entities make informed decisions. Technical Assistance teams will provide information and options to enable planning and purchasing decisions. DOE and the Technical Assistance teams will not direct behavior, make decisions, or require entities to take any particular course of action.

E. PHASE AREAS AND SCOPE OF ACTIVITIES

There are two Phases under this NOTA. Phase 1 designates eligible communities that pledge to reduce energy use as “Community Efficiency Champions”. This designation provides access to a Community Efficiency Champions peer network and eligibility to apply to Phase 2. Phase 2 will provide Technical Assistance to selected Community Efficiency Champions to gather baseline energy data and develop plans to implement energy efficiency improvements. Communities selected for Technical Assistance in Phase 2 will also be eligible to apply to a future FOA for funding to implement projects.

Phase 1 – Community Efficiency Champions Pledges

Phase 1 of the NOTA will collect pledges with commitments to reduce energy use, take action and share information in the peer network. DOE will select qualified Alaskan communities and native villages for designation as “Community Efficiency Champions”. Together the “Community Efficiency Champions” communities will comprise a peer network made up of Remote Alaskan communities and native Alaskan villages that pledge to reduce energy use by a minimum of 15% (per capita) by 2020, and participate in the DOE-recognized peer network.

DOE hopes to engage a large group of Alaskan communities and native villages in the Pledge process. To ensure the pledge is a firm commitment, communities will be encouraged to provide baseline energy use data. Data collection consists of building inventory, energy use measurement and benchmarking and can be conducted before the pledge to provide accurate data in the pledge, or, after the pledge, to the communities selected in Phase 2 as part of the Technical Assistance provided to the Champion. Additional outreach by the Alaskan partner will help communities determine energy use and provide them with the necessary tools.

Applications should include the Pledge Form, available online at EERE Exchange, or via email request to AlaskaCompetition@hq.doe.gov and should be a maximum of five pages. The form will require information on population size, remote location, current energy use, plans to reduce energy use, cost of energy current energy use estimate and corresponding methodology. If a community identifies an eligible TA provider they know has done this work previously, DOE will

use the information to understand the details of the community's project concept. DOE is under no obligation to make this TA provider available to do the work.

Phase 2 - Technical Assistance:

Phase 2 of the NOTA will provide up to 20 communities with Technical Assistance to gather baseline energy data and develop plans to implement energy efficiency improvements. The plans will be comprehensive and enable the communities to apply for appropriate loan and grant programs. Technical Assistance deliverables for each plan include: project scope, energy baseline, cost estimate, project business plan, management team that addresses any organizational issues between tribes in a community or between a village and a tribe living within, design team, financing plan, and permitting strategy.

The goals of the Phase 2 Technical Assistance are to accelerate community energy planning, from current status to a point where they are ready to apply for implementation funding, either via a grant or loan. The Community Efficiency Champions network will provide peer exchange on energy related education and training activities to ensure that any participating communities regardless of limited human capital or other resources, are not functionally excluded from implementing energy efficiency.

Selection Considerations

The Technical Assistance is intended to support projects that reduce energy use in ways that are relevant to each community, and can also likely be replicated in other Alaskan or Arctic communities. Successful applications will focus on energy efficiency improvements. Key areas of interest are in heating and weatherization, addressing community infrastructure with high energy usage/costs (such as, but not limited to, water treatment and distribution systems, washeterias, and schools), and electrical efficiency improvements, with a priority on first, end-use energy efficiency measures, and second, supply-side energy efficiency measures. Proposals to add electrical generation capacity will be considered non-responsive.

Examples of projects that could be developed under Phase 2 include but are not limited to: Weatherization and retrofitting, developing and implementing improved long-term maintenance programs; heat pumps; biomass fueled heating systems (space and water); heat recovery systems; remote monitoring systems; digital control systems; upgrades to generators and power controls; water treatment system operations improvements; LED lighting and outdoor lighting upgrades; more efficient boilers; and combined heat and power (CHP).

Technical Assistance Application Requirements

The TA applications will provide information on current community energy management and specific TA needs. For some, this would start with collection of energy usage data. Others may start with a facility energy audit. Still others may already have these things and need very little TA to be ready to apply for implementation grants. In order for a TA application to be responsive to the criteria for competition, applicants should address the following:

1. Demonstrate a high cost of energy, or a high percentage of energy costs for heating;
2. Demonstrate needs for energy usage data, analysis, maintenance and/or retrofits to reduce energy usage;
3. Provide a list of the top five energy users in the community (for example, specific buildings, energy end-use applications);
4. Rank the list of top energy users by the value to the community;
5. Provide a list of existing partnerships with technical providers or other agencies with resources and knowledge that you currently use and if they will be applicable to this project;
6. Provide anticipated technologies to implement and anticipated impacts of the proposed work on the community (economic, quality of life, social, health, etc.);
7. Address replicability and relevance of planned activities to other Remote Arctic Communities;
8. Demonstrate community economic need (to ensure the Competition benefits the communities with the most compelling needs);
9. Provide energy usage figures, an explanation of the source of information and the methodology used to meet the reduction and cost savings pledged;
10. Provide an estimate of the cost for the proposed project;
11. Request the type of the Technical Assistance desired for the project; and
12. Name a person to be the point of contact and specify how much of their time will be devoted to the Competition.

Eligible Uses of Technical Assistance

Eligible Technical Assistance will include baseline data collection, monitoring and analysis, community training and education activities, feasibility planning, policy and regulatory planning, tools, modeling, engineering and design assistance, and other project development assistance. Communities selected to receive Technical Assistance can indicate their interest to field-test diesel fuel meter systems.

Applicants may request Technical Assistance that is complementary to that provided by other Federal agencies supporting the RACEE Competition. However, applications that request Technical Assistance that has already been received by that community and/or is duplicative of that provided by other Federal agencies will not be considered under this Notice.

Applications for Phase 2 should be ten pages maximum and include the information listed in Section IV of this Notice.

SECTION II: AGREEMENT INFORMATION AND ELIGIBILITY

A. TYPE OF AGREEMENT

The RACEE Community Efficiency Champions selected under Phase 1 of this Notice will receive the designation of RACEE “Community Efficiency Champions” and be given access to a Community Efficiency Champions Peer Network and other resources. In addition, Champions become eligible to apply for TA under Phase 2.

The Community Efficiency Champions selected under Phase 2 of this Notice will receive Technical Assistance provided through DOE by entities organized as Technical Assistance teams by DOE. It is anticipated that Technical Assistance under this NOTA will be provided via Technical Assistance agreements between (1) a Technical Assistance Provider and (2) Selected Community Efficiency Champions. DOE will provide the funding for the selected Technical Assistance project directly to the Technical Assistance Provider. With DOE’s approval, the Technical Assistance Providers can use the funds to support the selected Community Efficiency Champions on their Technical Assistance projects. In limited circumstances, the use of a Work for Others Agreement, a Cooperative Research and Development Agreement (CRADA), or a Memorandum of Agreement (MOA) may be used instead of a Technical Assistance agreement. In addition, communities selected under Phase 2 will become eligible to apply for a future FOA for funding to implement projects.

There is no direct funding to the applicant under this Notice of Technical Assistance. Selected Applicants will receive Technical Assistance, not funding.

B. ESTIMATED FUNDING

DOE anticipates that Technical Assistance resources valued at up to \$600,000 will be available under this program in FY 2016, subject to availability of funding. DOE will provide the funding to the Technical Assistance Teams that will provide the Technical Assistance for the selected projects.

For Phase 1: DOE will not provide Technical Assistance under Phase 1.

For Phase 2: DOE anticipates providing approximately \$5,000 to \$100,000 per selected project in the form of Technical Assistance.

DOE is under no obligation to pay for any costs associated with preparation or submission of applications and reserves the right to provide Technical Assistance in whole or in part, to any, all, or none of the applications submitted in response to this Notice.

C. PERIOD OF PERFORMANCE

For Phase 1, pledge designation and Community Efficiency Champions peer network will be active for up to 48 months.

For Phase 2, the period of performance for Technical Assistance will be up to 36 months.

D. ELIGIBILITY

1. Eligible Entity.

Only the following types of Applicants are eligible to apply to this NOTA. Applicants that do not meet the requirements of this subsection will be deemed ineligible and their applications will not be reviewed or considered.

In accordance with EAct 2005 authorities and consistent with 2 CFR 910.126(b), eligibility for award under this NOTA is restricted to: (1) an Indian Tribe; or (2) Tribal Energy Resource Development Organization; and on whose (3) Indian Lands the project(s) will be located. More specifically,

EERE and IE intend to restrict eligibility for this NOTA to the following class of recipients: Eligible communities will be Alaskan communities and native Alaskan villages with a population no greater than 8,000 residents.

“Communities” are defined as Alaskan local and tribal governments, or consortia thereof. For the purposes of this initiative, local governments may include a village, borough, municipality, town, township, local public authority (including any public and Indian housing agency), school district, special district, intrastate district, council of governments, any other regional or interstate government entity, or any agency or instrumentality of a local government.

To be considered as a tribal government for the purposes of this Announcement, the entity must be any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688) [43 U.S.C. 1601 et seq.], which is recognized as eligible for the special programs and services provided by the United States to Native populations because of their status as Native populations.

To be considered eligible, an “Indian Tribe” (including Alaska Native villages, but not regional or village corporations), must be federally recognized as listed in Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs, published by the Department of Interior’s Bureau of Indian Affairs in the Federal Register on January 14, 2015, 80 FR 1942.

a) “Tribal Consortium” (plural consortia), for purposes of this announcement, means a group of Indian tribes (as defined above), that have chosen to submit a single application. Under this announcement, a Tribal Consortium is eligible to submit an application provided the application is submitted by a single Indian tribe representing the Consortium.

b) “Tribal Organization,” for purposes of this announcement means any legally established organization of an Indian Tribe, which is controlled, sanctioned, or chartered by the recognized governing body of that Indian Tribe. A “Tribal Organization” may include, but is not limited to, a subsidiary, subdivision, or instrumentality of an Indian Tribe, established under Congressional, State or Tribal law to act on behalf of an Indian Tribe. Applications may be submitted by an authorized “Tribal Organization”, provided evidence of the authority to submit an application, relative to the proposed project, is supplied as part of the application. Evidence may include, but is not limited to, a constitution, resolution, ordinance, executive order, charter or other legal documentation. DOE will determine the sufficiency of the authorization based on the evidence submitted as part of the application.

c) “Inter-Tribal Organization,” for purposes of this announcement, means any organization comprised of two or more Indian Tribes, established under Congressional, State, or Tribal law to act on behalf of the participating Indian Tribes. “Inter-Tribal Organizations” may include, but are not limited to, inter-tribal councils, regional tribal organizations or associations, and tribal federations. Applications may be submitted by an authorized “Inter-Tribal Organization”, provided evidence of the authority to submit an application, relative to the proposed project, is supplied as part of the application. Evidence may include, but is not limited to, a resolution, ordinance, executive order, charter, P.L. 93-638 contract, self-governance compact, or other legal documentation. DOE will determine the sufficiency of the authorization based on the evidence submitted as part of the application.

2) “Tribal Energy Resource Development Organization” for purposes of this announcement means an “organization” of two or more entities, at least one of which is an Indian Tribe (see “Indian Tribe” above) that has the written consent of the governing bodies of all Indian Tribes participating in the organization to apply for a grant or loan, or other assistance under 25 U.S.C. § 3503, where “organization” means a partnership, joint venture, Limited Liability Company (LLC) or other unincorporated association or entity that is established to develop Indian energy resources.”

3) “Indian Lands” or “Indian Country” for purposes of this Announcement, is defined as:

- (a) any land located within the boundaries of an “Indian reservation” (see definition below), pueblo, or rancheria;
- (b) any land not located within boundaries of an Indian reservation, pueblo, or rancheria, the title to which is held –
 - (i) in trust by the United States for the benefit of an Indian Tribe or an individual Indian;
 - (ii) by an Indian Tribe or an individual Indian, subject to restriction against alienation under laws of the United States; or
 - (iii) by a dependent Indian community; and
- (c) land that is owned by an Indian Tribe and was conveyed by the United States to a Native Corporation pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. § 1601 et seq.), or that was conveyed by the United States to a Native Corporation in exchange for such land;
- (d) lands held in fee simple (purchased or owned);

- (e) lands under a long-term Federal land lease (at least 20 years); and
- (f) land that was conveyed to a Native Corporation pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. § 1601 et seq.) and subsequently conveyed to another entity, provided that entity is either a Native village or Tribal governmental entity or the land is held, invested, managed for and on behalf of a Native village or Tribal governmental entity.

For purposes of this Announcement and as defined under Part 503 of EAct 2005, the term “Indian Reservation” includes an Indian reservation in existence in any State or States as of the date of enactment of Title V of EAct 2005; a public domain Indian allotment; and a dependent Indian community located within the borders of the United States, regardless of whether the community is on original or acquired territory of the community; or within or outside the boundaries of any State or States.

If an eligible community is part of a regional, non-profit or other organization, that organization can apply on behalf of its eligible communities with proper evidence of Tribal agreements and/or incorporation papers, and letters of commitment from the relevant communities. The organization would receive Technical Assistance in aggregate, reducing overhead costs, and engage the communities within the organization. Though an organization may apply on behalf of multiple communities, only one application may be submitted per community.

For Phase 2, eligible entities will be those communities designated as Community Efficiency Champions under Phase 1, or eligible organizations applying on their behalf.

2. Eligible Uses of Technical Assistance. See Phase 2 under Section I.E for the types of projects eligible for Technical Assistance. Applicants may request Technical Assistance that is complementary to Technical Assistance provided by other Federal agencies supporting the RACEE Community Efficiency Champions. However, applications that request Technical Assistance that is duplicative of the Technical Assistance provided by other Federal agencies will not be considered under this Notice.

E. COST SHARING

Cost sharing is not required; however, a demonstration of community commitment to the proposed activity is encouraged for all applications. Cost share can be a demonstration of this commitment.

SECTION III: APPLICATION REVIEW INFORMATION

A. EVALUATION PROCESS

DOE will evaluate the applications in accordance with the evaluation process defined below. After reviewing an application, DOE may contact the applicant to clarify information presented in the application and confirm understanding of the requirements for participation.

DOE will establish an evaluation team of technical and professional staff with relevant experience and/or expertise to review each eligible application received. The evaluation team

will be responsible for reviewing, evaluating, and rating the applications as well as making recommendations to the Selection Official, who will make the final determination. DOE reserves the right to accept or reject all or part of any application received that exceeds the allowable budget for Technical Assistance.

For Phase 1, applications may be submitted beginning December 18, 2015, but no later than 5:00 PM ET on **January 26, 2016**

For Phase 2, applications may be submitted beginning March 1, 2016, but no later than 5:00 PM ET on **March 31, 2016**

This program is intended to accelerate the Community Efficiency Champion's efforts and the period of performance must be completed within 36 months. Applicants will be expected to meet certain baseline requirements to receive Technical Assistance, as described below.

B. CRITERIA

1. Initial Eligibility Review

Prior to a full evaluation, DOE will perform an initial eligibility review to determine that (1) the applicant is an eligible entity under this NOTA; (2) the information required has been submitted; (3) all mandatory requirements are satisfied; and (4) the application is responsive to the objectives of the NOTA. Applications that fail to pass the initial eligibility review will not be forwarded for further review and will be eliminated from further consideration.

2. Review Criteria

Applications will be evaluated and selections will be made based on technical merit, innovation, and impact:

PHASE 1:

Community Efficiency Champion Applications will be reviewed and will be assigned a rating of Qualified or Not Qualified. The application must meet all requirements below to be determined Qualified under Phase 1:

Determination of Qualified or Not Qualified Applications:

Applicant must include a completed pledge form with signatures from all relevant community organizations and/or governments. This will include an agreement to:

1. Pledge to reduce energy use by at least 15% per capita by 2020;
2. Establish agreement among all local leadership (e.g. City, Tribe, Village Corporation) to work together toward the pledge;
3. Participate in the Community Efficiency Champion peer network;
4. Develop a community-wide plan and schedule to achieve energy savings pledge including past successes with energy efficiency projects, barriers to energy efficiency

projects and any Technical Assistance received previously on energy efficiency projects, name and description of the potential building or project, including estimated costs, suggested technical providers and partners to implement projects; and the source of the estimates;

5. Identify and develop methods to track energy use and the impact of energy efficiency measures;
6. Provide Community name, population, current energy cost description, residential, proximity to large population center, major employer type and name, economic burden of energy on the community and any other major issues that affect the community;
7. Share information on the energy efficiency implementation models used to achieve the energy savings pledge; and
8. Provide regular progress reports on energy efficiency improvements, energy savings across the community, and energy performance at the facility level as the basis for recognition

PHASE 2:

Applications will be evaluated and selections will be made based on the following criteria:

Criterion: Technical Merit, Innovation, and Impact

1. Content of the pledge and the plan to achieve the energy usage reductions.
2. Applicant's ability to manage and report on the project including commitment of community members;
3. Alignment and clarity of requested Technical Assistance with Community Efficiency Champion's energy usage profile and community economic considerations;
4. Level of expected energy saved for the building, project, and/or for the community as a whole;
5. Replicability of proposed project to other remote communities in other Alaska or Arctic regions;
6. Sustainability (i.e. lasting for multiple years) of project for which Technical Assistance is sought;
7. Level of impact to the local community including demonstrated needs (for example, economic need, high energy costs, need for maintenance and/or retrofits);
8. Use of partnerships to leverage resources and knowledge; and
9. Transformative aspect of the project for which Technical Assistance is sought.

C. OTHER SELECTION FACTORS

Program Policy Factors

In addition to the above criteria, DOE may consider the following Program Policy Factors in determining which Applications to select for Phase 2 Technical Assistance:

1. Geographical diversity of the selected projects.

SECTION IV: APPLICATION SUBMISSION

For Phase 1, applications may be submitted beginning December 18, 2015, but no later than 5:00 PM ET on **January 26, 2016**. **For Phase 2**, applications may be submitted beginning March 1, 2016, but no later than 5:00 PM ET on **March 31, 2016**.

Application Due dates are 5:00 PM ET on January 26, 2016 for Phase 1 and 5:00 PM ET on March 31, 2016 for Phase 2.

Applications for both Phases will be accepted through:

- The EERE online application portal; EERE Exchange at <https://eere-Exchange.energy.gov>
- Email at AlaskaCompetition@hq.doe.gov. or
- Via fax at 240-562-1640
 - When faxing please include a cover page with the following information:
 - To: DOE RACEE NOTA Applications
 - From: Applicant Name and Contact information
 - ATTN: Steven Palmeri
 - # of Pages

The Applicant's Principal Investigator (PI) should receive acknowledgement of receipt of the application within 24 hours. Please contact AlaskaCompetition@hq.doe.gov if a receipt is not received.

CONTENT AND FORM OF THE APPLICATION

For Phase 1, the applicant must provide the following:

A completed, signed Pledge Form, (available in EERE Exchange under the NOTA "Pre-Application Attachments" section, or available through email request to AlaskaCompetition@hq.doe.gov) or by phone request to U. S. Dept. of Energy, Golden Field Office at 720-356-1764

The applicant will be required to submit a form with all required fields completed in accordance with the instructions on the form. The completed Pledge form will contain the following information:

- 1) Community name;
- 2) Community population;
- 3) Community proximity to large population center;
- 4) An Established agreement among all local leadership (e.g. City, Tribe, Village Corporation) to work together toward the pledge;
- 5) The name and description of the potential building or project, including estimated costs;
- 6) Brief statement how the community tracks energy use now and how TA could improve this;
- 7) A pledge to

- a) Reduce energy use by at least 15% per capita by 2020;
- b) Participate in the Community Efficiency Champion peer network;
- c) Develop a community-wide plan and schedule to achieve energy savings pledge, including past successes with energy efficiency projects;
- d) Share information on the energy efficiency implementation models used to achieve the energy savings pledge; and
- e) Provide regular progress reports on energy efficiency improvements, energy savings across the community, and energy performance at the facility level as the basis for recognition

Pledge Forms for Phase 1 must not exceed five pages. Additional pages will not be reviewed.

For Phase 2, the applicant must provide the following:

1. A completed, signed **Application for Federal Assistance (Form SF-424)** in PDF format (available in EERE Exchange under the NOTA “Full Application Attachments” section or available through email request to AlaskaCompetition@hq.doe.gov) or by phone request to U. S. Dept. of Energy, Golden Field Office, 720-356-1764
2. Complete all required fields in accordance with the instructions on the form. The list of certifications and assurances in Field 21 can be found at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> , under Certifications and Assurances.
3. A **Project Summary file** with the following information for each project:
 1. Provide information about the community and energy use, including:
 - a. Targeted buildings or projects ;
 - b. High cost of energy or a high percentage of energy costs for heating Energy Usage;
 - c. Current methods to track energy use;
 - d. Current energy usage estimate and corresponding methodology;
 - e. Economic burden of energy on the community and any other major issues that affect the community; and
 - f. Current methods to track energy use
 2. Project name with Community Efficiency Champion’s name, organization, primary point of contact (principal investigator, or PI) name, email, and phone number;
 3. Specific needs for energy usage measurement, analysis, efficiency maintenance and/or retrofits;
 4. Strategy to achieve the reduction goal including, a community-wide plan and schedule to achieve energy savings pledge, description of past successes with energy efficiency projects, barriers to energy efficiency projects and any TA received on energy efficiency projects previously;

5. Identification of a provider (if known) that can implement the community project;
6. Description of previous Technical Assistance work including:
 - a. Provider, amount and timeframe
 - b. If any of the following were developed and when they were developed:
 - i. Project Plan;
 - ii. Energy usage baseline, savings and methodology;
 - iii. Building audits;
 - iv. Estimated project costs;
 - v. Engineering studies;
 - vi. Management and design team;
 - vii. Permitting strategy
7. Potential impacts:
 - a. Explanation of how this Technical Assistance is expected to help your community achieve your goal(s) and provide anticipated impacts of the proposed work on the community (economic, quality of life, social, health, etc.);
 - b. Explanation of how this Technical Assistance could be replicated in future projects in other Remote Arctic Communities;
8. Provide a list of existing partnerships to leverage resources and knowledge;

Applications for Phase 2 must not exceed ten pages. Additional pages will not be reviewed.

For Phase 2, all submissions must conform to the following form and content requirements, including maximum page lengths, described in Section IV above.

DOE will not extend deadlines for Applicants who fail to submit required information and documents.

To be considered eligible for review, the Phase 2 Application must be:

- Comprehensive in providing the requested information
- Written in English
- Formatted to fit on 8.5 x 11 inch paper with margins not less than one inch on every side. Use Times New Roman typeface, a black font color, and a font size of 12 point or larger (except in figures or tables, which may be 10 point font). A symbol font may be used to insert Greek letters or special characters, but the font size requirement still applies. References must be included as footnotes or endnotes in a font size of 10 or larger. Footnotes and endnotes are counted toward the maximum page requirement.
- Formatted with the Champion Community Name prominently displayed on the upper right corner of the header of every page. Page numbers must be included in the footer of every page.

- Within the specified maximum page limit, including cover page, charts, graphs, maps, and photographs when printed using the formatting requirements set forth above and single spaced. If Applicants exceed the maximum page lengths indicated below, DOE will review only the authorized number of pages and disregard any additional pages.

Applicants are responsible for meeting the submission deadline. **Applicants are strongly encouraged to submit their Application at least 48 hours in advance of the submission deadline.**

SECTION V: ADDITIONAL INFORMATION REGARDING EXCHANGE

PLEASE NOTE:

Applicants are encouraged to use EERE Exchange, but it is not required to apply under either Phase of this NOTA. Applicants may use email or fax to submit applications, as described above.

Step 1. Register in Exchange

Register and create an account on EERE Exchange at <https://eere-Exchange.energy.gov>.

This account will then allow the user to register for any open Opportunity Announcements that are currently in EERE Exchange. It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission. Applicants should also designate backup points of contact so Applicants may be easily contacted if deemed necessary.

Step 2. Locate the Appropriate Funding Opportunity

After registering in EERE Exchange, the Applicant then locates the appropriate NOTA on the Exchange home page at:

<https://eere-exchange.energy.gov> and clicks on the “Apply” button.

Step 3. Complete the Required Information Fields

From this point onward, Exchange will prompt the user to complete the required fields. All document templates required for submitting an application will be available in Exchange.

Step 4. Submit the Required Documents (Upload to Exchange)

Documents submitted through EERE Exchange must be titled “ControlNumber_LeadOrganization_FormName” and must be submitted in Portable Document Format (PDF).

Applicants should allow at least one hour to submit the application. Once the Application is submitted in EERE Exchange, Applicants may revise or update their application until the expiration of the applicable deadline.

EERE Exchange is designed to enforce the deadlines specified in this NOTA. The “Apply” and “Submit” buttons will automatically disable at the defined submission deadlines. Should Applicants experience problems with Exchange, the following information may be helpful:

Applicants that experience issues with submission PRIOR to the NOTA deadline: In the event that an Applicant experiences technical difficulties with a submission, the Application should contact the Exchange helpdesk for assistance (EERE-ExchangeSupport@hq.doe.gov). The Exchange helpdesk and/or the EERE Exchange system administrators will assist Applicants in resolving issues.

Applicants that experience issues with submissions that result in late submissions: In the event that an Applicant experiences technical difficulties so severe that they are unable to submit their application by the deadline, the Applicant should contact the Exchange helpdesk for assistance (EERE-ExchangeSupport@hq.doe.gov). The Exchange helpdesk and/or the EERE Exchange system administrators (EERE-ExchangeSupport@hq.doe.gov) will assist the Applicant in resolving all issues (including finalizing submission on behalf of and with the Applicant’s concurrence). PLEASE NOTE, however, those Applicants who are unable to timely submit their application due to their waiting until the last minute when network traffic is at its heaviest to submit their materials will not be able to use this process.

SECTION VI: ADMINISTRATIVE INFORMATION

A. QUESTIONS/AGENCY CONTACTS

Upon the issuance of this Notice of Technical Assistance (NOTA), DOE personnel are prohibited from communicating (in writing or otherwise) with Applicants regarding the NOTA except through the established question and answer process as described below. Specifically, questions regarding the content of this NOTA must be submitted vial email to AlaskaCompetition@hq.doe.gov or by phone request to U. S. Dept. of Energy, Golden Field Office, 720-356-1764 not later than 3 business days prior to the application due date. DOE will attempt to respond to a question within three business days.

Questions related to the use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov.

B. DISCLOSURE OF LOBBYING ACTIVITIES

Applicants may not use any Federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

C. TREATMENT OF APPLICATION INFORMATION

In general, DOE will use data and other information contained in applications for evaluation purposes only unless such information is generally available to the public or is already the property of the Government.

Applicants should not include trade secrets or commercial or financial information that is privileged or confidential in their application unless such information is necessary to convey an understanding of the application or to comply with a requirement in the NOTA. Applications containing trade secrets or commercial or financial information that is privileged or confidential, which the Applicant does not want disclosed to the public or used by the Government for any purpose other than application evaluation, must be marked as described in this section.

The cover sheet of the application must be marked as follows and must identify the specific pages containing trade secrets or commercial or financial information that is privileged or confidential:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this document may contain trade secrets or commercial or financial information that is privileged or confidential, and is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with an assistance agreement or Memorandum of Agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source. [End of Notice]

The header and footer of every page that contains trade secrets or commercial or financial information that is privileged must be marked as follows: "May contain trade secrets or commercial or financial information that is privileged or confidential and exempt from public disclosure."

In addition, each line or paragraph containing trade secrets or commercial or financial information that is privileged or confidential must be enclosed in brackets.

The above markings enable DOE to follow the provisions of 10 CFR 1004.11(d) in the event a Freedom of Information Act (FOIA) request is received for information submitted with an application. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under a FOIA request or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

Subject to the specific FOIA exemptions identified in 5 U.S.C. 552(b), all information submitted to DOE by an Applicant is subject to public release under the Freedom of Information Act, 5 U.S.C. §552, as amended by the OPEN Government Act of 2007, Pub. L. No. 110-175. It is the

Applicant's responsibility to review FOIA and its exemptions to understand (1) what information may be subject to public disclosure and (2) what information Applicants submit to the Government that are protected by law. In some cases, DOE may be unable to make an independent determination regarding which information submitted by an Applicant is releasable and which is protected by an exemption. In such cases, DOE will consult with the Applicant, in accordance with 10 C.F.R. §1004.11, to solicit the Applicant's views on how the information should be treated.

D. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The Applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

E. ENVIRONMENTAL REVIEW IN ACCORDANCE WITH NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Technical Assistance will be subject to the National Environmental Policy Act (42 USC 4321, et seq.). NEPA requires Federal agencies to integrate environmental values into their decision-making processes by considering the potential environmental impacts of their proposed actions. For additional background on NEPA, please see DOE's NEPA website at <http://nepa.energy.gov/>.

While NEPA compliance is a Federal agency responsibility and the ultimate decisions remain with the Federal agency, all Community Efficiency Champions designees selected to receive Technical Assistance will be required to assist in the timely and effective completion of the NEPA process.

As required under the National Environmental Policy Act (NEPA), if DOE selects a project for Technical Assistance, DOE must consider the potential environmental impacts of the proposed project before DOE will authorize the expenditure of federal funding for the Technical Assistance Teams to provide Technical Assistance on the proposed project. If the applicant carries out activities that would have an adverse effect on the environment or limit the choice of reasonable alternatives prior to receiving a written final NEPA determination, the applicant is doing so at risk of not receiving Technical Assistance.

F. SELECTION NOTICES

Selected Applicants Notification: DOE will notify applicants selected under this Notice of Technical Assistance. Notice of selection is not an authorization to begin performance.

Non-selected Notification: Organizations whose applications have not been selected will be advised as promptly as possible.

G. PROTECTED PERSONALLY IDENTIFIABLE INFORMATION

In responding to this NOTA, Applicants must ensure that Protected Personally Identifiable Information (PII) is not included. PII is defined by the Office of Management and Budget (OMB) and DOE as:

Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual's identity, such as their name, social security number, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

Public PII: PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.

Protected PII: PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that Applicants must not include in the files listed above to be evaluated by the Merit Review Committee.

- Social Security Numbers in any form
- Place of Birth associated with an individual
- Date of Birth associated with an individual
- Mother's maiden name associated with an individual
- Biometric record associated with an individual
- Fingerprint
- Iris scan
- DNA
- Medical history information associated with an individual
- Medical conditions, including history of disease
- Metric information, e.g. weight, height, blood pressure
- Criminal history associated with an individual
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions
- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal
- Financial information associated with an individual
- Credit card numbers
- Bank account numbers

- Security clearance history or related information (not including actual clearances held)

Listed below are examples of Public PII that Applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number
- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a Technology Office describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

ENERGY AUDIT – FINAL REPORT

**BETHEL CITY SHOP
220 State Highway
Bethel, Alaska**



Prepared for:

Mr. Lee Foley
PO Box 1388
Bethel, Alaska

Prepared by:

David Lanning PE, CEA
Jeremy Spargur EIT, CEAIT

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Environmental Engineering & Industrial Hygiene Consultants

Managing Office
2400 College Road
Fairbanks, Alaska 99709
p. 907.452.5688
f. 907.452.5694

3105 Lakeshore Dr. Suite 106A
Anchorage, Alaska 99517
p. 907.222.2445
f. 907.222.0915

4402 Thane Road
Juneau, Alaska 99801
p: 907.586.6813
f: 907.586.6819

www.nortechengr.com



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1.0 EXECUTIVE SUMMARY

NORTECH has completed an ASHRAE Level II Energy Audit of the Bethel City Shop, a 35,925 square foot facility. The audit began with benchmarking which resulted in a calculation of the energy consumption per square foot. A site inspection was completed on November 17, 2011 to obtain information about the lighting, heating, ventilation, cooling and other building energy uses. The existing usage data and current systems were then used to develop a building energy consumption model using AkWarm.

Once the model was calibrated, a number of Energy Efficiency Measures (EEMs) were developed from review of the data and observations. EEMs were evaluated and ranked on the basis of both energy savings and cost using a Savings/Investment Ratio (SIR). While these modeling techniques were successful in verifying that many of the EEMs would save energy, not all of the identified EEMs were considered cost effective based on the hardware, installation, and energy costs at the time of this audit.

While the need for a major retrofit can typically be identified by an energy audit, upgrading specific systems often requires collecting additional data and engineering and design efforts that are beyond the scope of the Level II energy audit. The necessity and amount of design effort and cost will vary depending on the scope of the specific EEMs planned and the sophistication and capability of the entire design team, including the building owners and operators. During the budgeting process for any major retrofit identified in this report, the building owner should add administrative and supplemental design costs to cover the individual needs of their own organization and the overall retrofit project.

The following table, from AkWarm, is a summary of the recommended EEMs for the Bethel City Shop. Additional discussion of the modeling process can be found in Section 3. Details of each individual EEM can be found in Appendix A of this report. A summary of EEMs that were evaluated but are not currently recommended is located in Appendix B.

| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|---|--|---------------------------------|--------------------------|----------------------------------|------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 1 | Lighting - Power Retrofit: Sauna | Replace with 2 FLUOR CFL, A Lamp 20W | \$119 | \$10 | 76.15 | 0.1 |
| 2 | Setback Thermostat: Bethel City Shop | Implement a Heating Temperature Unoccupied Setback to 60.0 deg F for the Bethel City Shop space. | \$14,122 | \$5,000 | 41.59 | 0.4 |
| 3 | Lighting - Power Retrofit: Rest Room, Understair Area | Replace with FLUOR (4) CFL, A Lamp 20W | \$71 | \$20 | 22.66 | 0.3 |
| 4 | Lighting - Power Retrofit: Main Shop | Replace with 4 FLUOR (4) T5 45.2" F54W/T5 HO Energy-Saver (2) StdElectronic | \$3,936 | \$1,520 | 22.63 | 0.4 |

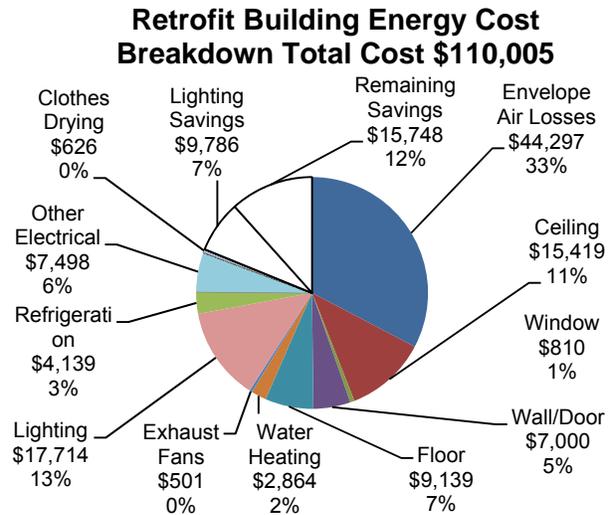
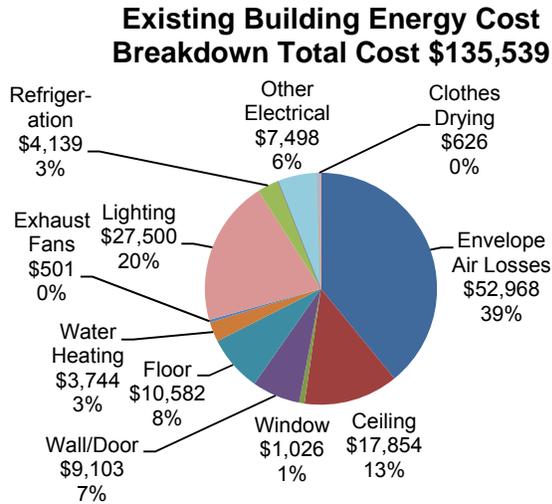




| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|--|--|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 5 | Lighting - Power Retrofit: Breakroom | Replace with FLUOR (2) CFL, A Lamp 15W | \$22 | \$10 | 14.16 | 0.5 |
| 6 | Garage Door: 2" Metal Foam Core | Add R-5 insulating blanket to garage door | \$697 | \$1,225 | 8.38 | 1.8 |
| 7 | Lighting - Power Retrofit: Main Shop | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$5 | \$8 | 4.27 | 1.5 |
| 8 | Lighting - Power Retrofit: Main Shop, Water Shop | Replace with 51 FLUOR (4) T5 45.2" F54W/T5 HO Energy- Saver (2) StdElectronic | \$4,862 | \$19,380 | 2.19 | 4.0 |
| 9 | Lighting - Power Retrofit: Mezzanine | Replace with 9 FLUOR (2) T8 8' F96T8 57W Energy-Saver HighEfficElectronic | \$441 | \$1,800 | 1.56 | 4.1 |
| 10 | Lighting - Power Retrofit: Exit Signs: Hall A, Mezzanine, Hall D, Dressing Room, Water Office, Water Shop, Boiler Room | Replace with 10 LED 4W Module StdElectronic | \$114 | \$500 | 1.46 | 4.4 |
| 11 | HVAC And DHW | replace UPS 80-60 with variable speed magna pumps, remove direct fired water heater and add side arm to boiler | \$929 | \$11,000 | 1.44 | 11.8 |
| 12 | Lighting - Power Retrofit: Hall D | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$23 | \$132 | 1.10 | 5.8 |
| 13 | Lighting - Power Retrofit: Hall A, Shop Office, Main Shop, Laundry Room | Replace with 6 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$193 | \$1,200 | 1.03 | 6.2 |
| TOTAL, cost-effective measures | | | \$25,534 | \$41,805 | 7.59 | 1.6 |



Modeled Building Energy Cost Breakdown



The preceding charts are a graphical representation of the modeled energy usage for the Bethel City Hall. The greatest portions of energy cost for the building are envelope air losses, lighting, and other electrical. This indicates that the greatest savings can be found in reducing the amount of outside air provided to the building mechanically or through air leakage, upgrading lighting, and potentially changing user behavior to use less energy. Detailed improvements for ventilation, lighting and other cost effective measures can be found in Appendix A. The chart breaks down energy usage by cost into the following categories:

- Envelope Air Losses—the cost to provide heated fresh air to occupants, air leakage, heat lost in air through the chimneys and exhaust fans, heat lost to wind and other similar losses.
- Envelope
 - Ceiling—quantified heat loss transferred through the ceiling portion of the envelope.
 - Window—quantified heat loss through the window portion of the envelope.
 - Wall/Door—quantified heat loss through the wall and door portions of the envelope.
 - Floor—quantified heat loss through the floor portion of the envelope.
- Water Heating—energy cost to provide domestic hot water.
- Fans—energy cost to run ventilation, and exhaust fans.
- Lighting—energy cost to light the building.
- Refrigeration—energy costs to provide refrigerated goods for the occupants.
- Other Electrical—includes energy costs not listed above including cooking loads, laundry loads, other plug loads and electronics. These energy uses are amenable to reduction only through user behavior changes which can be accomplished with goal driven employee teamwork.

2.0 INTRODUCTION

NORTECH contracted with the Alaska Housing Finance Corporation to perform ASHRAE Level II Energy Audits for publically owned buildings in Alaska. This report presents the findings of the utility benchmarking, modeling analysis, and the recommended building modifications, and building use changes that are expected to save energy and money.

The report is organized into sections covering:

- description of the facility,
- the building’s historic energy usage (benchmarking),
- estimating energy use through energy use modeling,
- evaluation of potential energy efficiency or efficiency improvements, and
- recommendations for energy efficiency with estimates of the costs and savings.

2.1 Building Use

The City Shop is where the vehicles and equipment owned by the city of Bethel are serviced and repaired.

2.2 Building Occupancy and Schedules

This building is occupied by approximately 13 city workers during the work week from 7am to 5pm Monday through Friday with the occasional weekend worked.

2.3 Building Description

The City Shop is a prefabricated metal framed building that sits on and insulated wooden floor on pilings. The insulated floor on the office portion of the building is constructed with 2x12 joists with additional urethane foam sprayed to the bottom. The floor under the shop portion is made with 2x8 beams laminated together. The walls and ceiling consist of 4” insulated metal panels.

Building Envelope

| Building Envelope: Walls | | | |
|--------------------------|----------------------|------------|----------------------------------|
| Wall Type | Description | Insulation | Notes |
| Above-grade walls | Stressed skin panels | 4” | Wall damage in several locations |

| Building Envelope: Floors | | | |
|---------------------------|--------------------------------|--------------------------------|-------|
| Floor Type | Description | Insulation | Notes |
| Exposed Shop Floor | Wood Laminate | None | None |
| Exposed Office Floor | Wood-framed 2x12 floor joists. | 4-inches of polyurethane foam. | None |



| Building Envelope: Roof | | | |
|-------------------------|------------------------------|--------------------|--------------|
| Roof Type | Description | Insulation | Notes |
| All Roofs | Stressed Skin Panel Hot Roof | 4" insulated panel | Minor damage |

| Building Envelope: Doors and Windows | | | |
|--------------------------------------|--|-------------------|-----|
| Door and Window Type | Description | Estimated R-Value | SF |
| Exterior door | Flush 2" insulated door | 5 | 105 |
| Exterior door | ½ lite 2" insulated door | 3 | 21 |
| Exterior door | ¼ lite 2" insulated door | 3.6 | 42 |
| Garage Doors | 2" metal foam core | 3.4 | 500 |
| Window | Double pane, vinyl, air gap >3/8 | 2 | 99 |
| Window | Triple pane, vinyl, <3/8 gap, not south | 2.5 | 66 |
| Window | Triple pane, vinyl, >3/8 gap, south | 2.7 | 22 |
| Window | Double pane, aluminum with thermal break, <3/8 gap | 1.5 | 96 |



Heating and Ventilation Systems

The city shop is heated with a two boiler system. One set of pumps is used to deliver heat to unit heaters in the shops and another set of pumps is used to deliver heat to office area baseboards. A third pump was installed to deliver heat to air handlers that are no longer in operation. This building is equipped with exhaust fans in bathrooms, shops, and storage rooms.

Air Conditioning System

The City Shop is not equipped with an air conditioning system.

Energy Management

The City Shop is not equipped with an energy management system.

Lighting Systems

The primary lighting type in the office area of the City Shop is ceiling mounted fluorescent fixtures with T12 (1 ½" diameter 4' long) lamps. The shops are lit with high bay fixtures containing 400 watt metal halide lamps. Approximately 25% of the shop lights several of the office lights are on 24 hours a day.

Domestic Hot Water

An oil fired water heater provides 180°F domestic hot water to the City Shop. The temperature of the water is high because of the great demand for hot water due bathrooms, laundry, and truck washing. The current system is old, inefficient, and undersized.

3.0 BENCHMARKING 2010 UTILITY DATA

Benchmarking building energy use consists of obtaining and then analyzing two years of energy bills. The original utility bills are necessary to determine the raw usage, and charges as well as to evaluate the utility's rate structure. The metered usage of electrical and natural gas consumption is measured monthly, but heating oil, propane, wood, and other energy sources are normally billed upon delivery and provide similar information. During benchmarking, information is compiled in a way that standardizes the units of energy and creates energy use and billing rate information statistics for the building on a square foot basis. The objectives of benchmarking are:

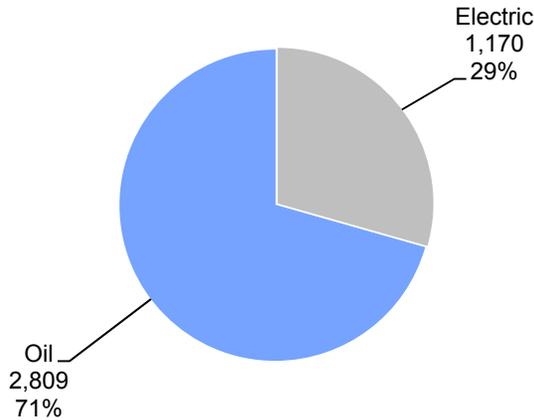
- to understand patterns of use,
- to understand building operational characteristics,
- for comparison with other similar facilities in Alaska and across the country, and
- to offer insight in to potential energy savings.

The results of the benchmarking, including the energy use statistics and comparisons to other areas, are discussed in the following sections.

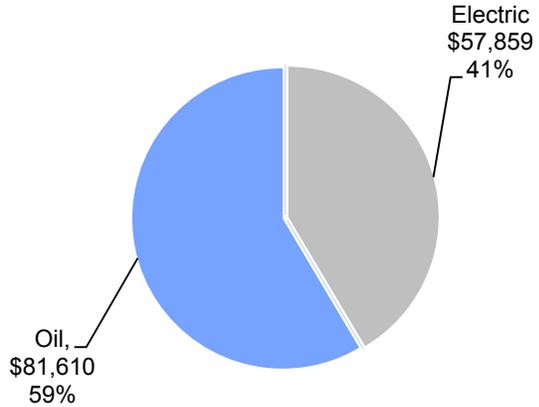
3.1 Total Energy Use and Cost of 2010

The energy use profiles below show the energy and cost breakdowns for the Bethel City Shop. The total annual energy cost for the building is approximately \$140,000 per year. These charts show the portion of use for a fuel type and the portion of its cost.

2010 Energy Use Total (mmBTU)



2010 Energy Cost Total



The above charts indicate that the highest portion of energy use is for oil and the highest portion of cost is for oil. Fuel oil consumption correlates directly to space heating and domestic hot water while electrical use can correlate to lighting systems, plug loads, and HVAC equipment. The energy type with the highest cost often provides the most opportunity for savings.

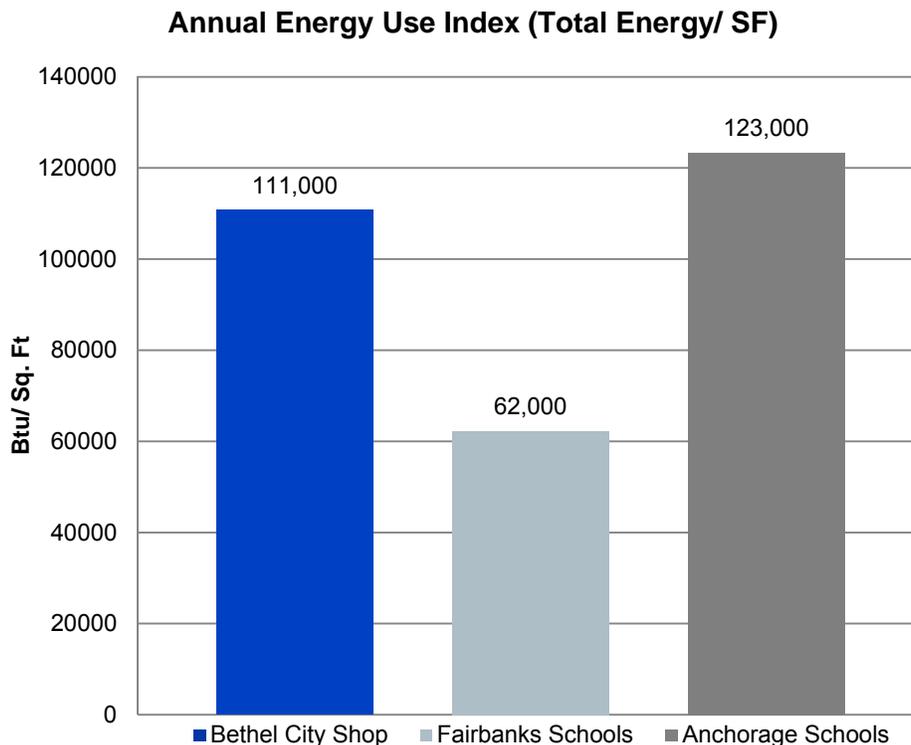
3.2 Energy Utilization Index of 2010

The primary benchmarking statistic is the Energy Utilization Index (EUI). The EUI is calculated from the utility bills and provides a simple snapshot of the quantity of energy actually used by the building on a square foot and annual basis. The calculation converts the total energy use for the year from all sources in the building, such as heating fuel and electrical usage, into British Thermal Units (BTUs). This total annual usage is then divided by the number of square feet of the building. The EUI units are BTUs per square foot per year.

The benchmark analysis found that the Bethel City Shop has an EUI of 111,000 BTUs per square foot per year.

The EUI is useful in comparing this building’s energy use to that of other similar buildings in Alaska and in the Continental United States. The EUI can be compared to average energy use in 2003 found in a study by the U.S. Energy Information Administration of commercial buildings (abbreviated CBECS, 2006). That report found an overall average energy use of about 90,000 BTUs per square foot per year while studying about 6,000 commercial buildings of all sizes, types, and uses that were located all over the Continental U.S. (see Table C3 in Appendix I).

In a recent and unpublished state-wide benchmarking study sponsored by the Alaska Housing Finance Corporation, schools in Fairbanks averaged 62,000 BTUs per square foot and schools in Anchorage averaged 123,000 BTUs per square foot annual energy use. The chart below shows the Bethel City Shop relative to these values. These findings are discussed further in Appendix H.



3.3 Cost Utilization Index of 2010

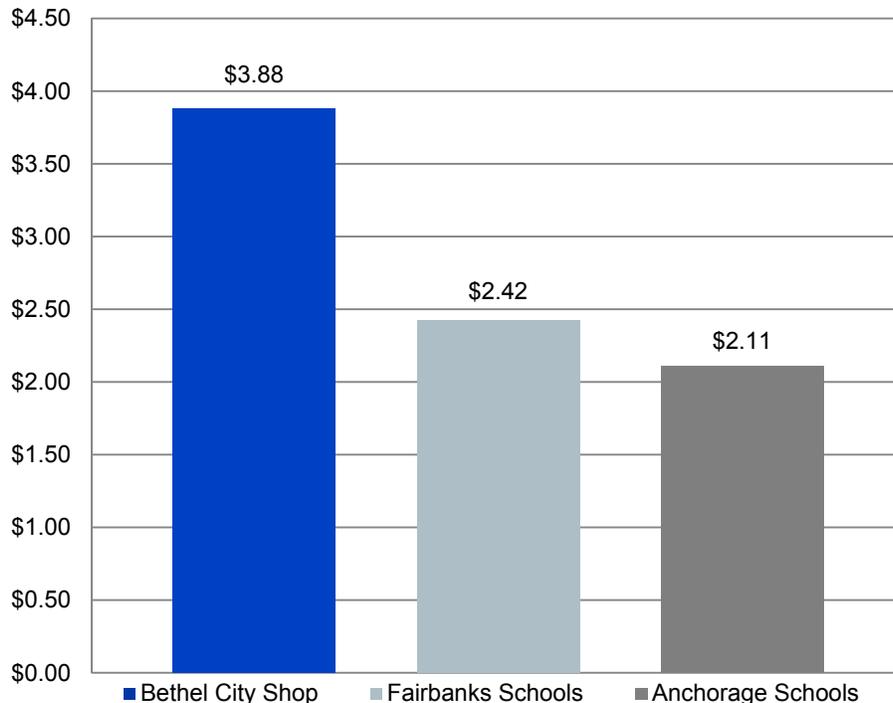
Another benchmarking statistic that is useful is the Cost Utilization Index (CUI), which is the cost for energy used in the building on a square foot basis per year. The CUI is calculated from the cost for utilities for a year period. The CUI permits comparison of buildings on total energy cost even though they may be located in areas with differing energy costs and differing heating and/or cooling climates. The cost of energy, including heating oil, natural gas, and electricity, can vary greatly over time and geographic location and can be higher in Alaska than other parts of the country.

The CUI for Bethel City Shop is about \$3.88. This is based on utility costs from 2010 and the following rates:

| | | | |
|--------------|----|-----------------|------------------|
| Electricity | at | \$0.17 / kWh | (\$4.98 / Therm) |
| # 1 Fuel Oil | at | \$4.07 / gallon | (\$2.99 / Therm) |

The Department of Energy Administration study, mentioned in the previous section (CBECS, 2006) found an average cost of \$2.52 per square foot in 2003 for 4,400 buildings in the Continental U.S (Tables C4 and C13 of CBDES, 2006). Schools in Fairbanks have an average cost for energy of \$2.42 per square foot while Anchorage schools average \$2.11 per square foot. The chart below shows the Bethel City Shop relative to these values. More details are included in Appendix H.

Annual Energy Cost Index (Total Cost/ SF)



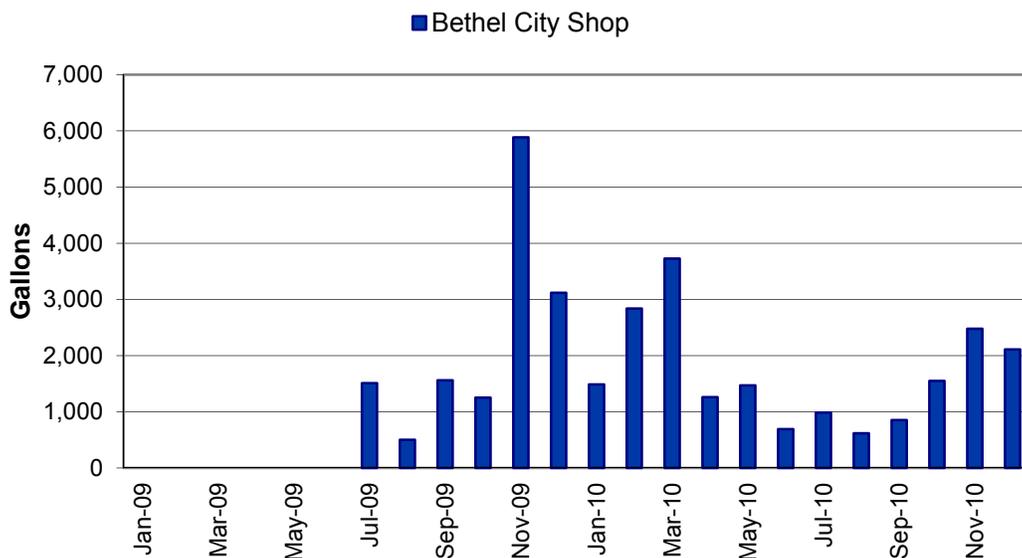
3.4 Seasonal Energy Use Patterns

Energy consumption is often highly correlated with seasonal climate and usage variations. The graphs below show the electric and fuel consumption of this building over the course of two years. The lowest monthly use is called the baseline use. The electric baseline often reflects year round lighting consumption while the heating fuel baseline often reflects year round hot water usage. The clear relation of increased energy usage during periods of cold weather can be seen in the months with higher usage. Oil data is not available before July 2009.

Electrical Consumption



Fuel Oil Deliveries



3.5 Future Energy Monitoring

Energy accounting is the process of tracking energy consumption and costs. It is important for the building owner or manager to monitor and record both the energy usage and cost each month. Comparing trends over time can assist in pinpointing major sources of energy usage and aid in finding effective energy efficiency measures. There are two basic methods of energy accounting: manual and automatic. Manual tracking of energy usage may already be performed by an administrative assistant; however if the records are not scrutinized for energy use, then the data is merely a financial accounting. Digital energy tracking systems can be installed. They display and record real-time energy usage and accumulated energy use and cost. There are several types which have all of the information accessible via Ethernet browser.

4.0 MODELING ENERGY CONSUMPTION

After benchmarking of a building is complete and the site visit has identified the specific systems in the building, a number of different methods are available for quantifying the overall energy consumption and to model the energy use. These range from relatively simple spreadsheets to commercially available modeling software capable of handling complex building systems.

NORTECH has used several of these programs and uses the worksheets and software that best matches the complexity of the building and specific energy use that is being evaluated.

Modeling of an energy efficiency measure (EEM) requires an estimate of the current energy used by the specific feature, the estimated energy use of the proposed EEM and its installed cost. EEMs can range from a single simple upgrade, such as light bulb type or type of motor, to reprogramming of the controls on more complex systems. While the need for a major retrofit can typically be identified by an energy audit, the specific system upgrades often require collecting additional data and engineering and design efforts that are beyond the scope of the Level II energy audit.

Based on the field inspection results and discussions with the building owners/operators, auditors developed potential EEMs for the facility. Common EEMs that could apply to almost every older building include:

- Reduce the envelope heat losses through:
 - increased building insulation, and
 - better windows and doors
- Reduce temperature difference between inside and outside using setback thermostats
- Upgrade inefficient:
 - lights,
 - motors,
 - refrigeration units, and
 - other appliances
- Reduce running time of lights/appliances through:
 - motion sensors,
 - on/off timers,
 - light sensors, and
 - other automatic/programmable systems

The objective of the following sections is to describe how the overall energy use of the building was modeled and the potential for energy savings. The specific EEMs that provide these overall energy savings are detailed in Appendix A of this report. While the energy savings of an EEM is unlikely to change significantly over time, the cost savings of an EEM is highly dependent on the current energy price and can vary significantly over time. An EEM that is not currently recommended based on price may be more attractive at a later date or with higher energy prices.

4.1 Understanding How AkWarm Models Energy Consumption

NORTECH used the AkWarm model for evaluating the overall energy consumption at Bethel City Shop. The AkWarm program was developed by the Alaska Housing Finance Corporation (AHFC) to model residential energy use. The original AkWarm is the modeling engine behind the successful residential energy upgrade program that AHFC has operated for a number of years. In the past few years, AHFC has developed a version of this model for commercial buildings.

Energy use in buildings is modeled by calculating energy losses and consumption, such as:

- Heat lost through the building envelope components, including windows, doors, walls, ceilings, crawlspaces, and foundations. These heat losses are computed for each component based on the area, heat resistance (R-value), and the difference between the inside temperature and the outside temperature. AkWarm has a library of temperature profiles for villages and cities in Alaska.
- Window orientation, such as the fact that south facing windows can add heat in the winter but north-facing windows do not.
- Inefficiencies of the heating system, including the imperfect conversion of fuel oil or natural gas due to heat loss in exhaust gases, incomplete combustion, excess air, etc. Some electricity is also consumed in moving the heat around a building through pumping.
- Inefficiencies of the cooling system, if one exists, due to various imperfections in a mechanical system and the required energy to move the heat around.
- Lighting requirements and inefficiencies in the conversion of electricity to light; ultimately all of the power used for lighting is converted to heat. While the heat may be useful in the winter, it often isn't useful in the summer when cooling may be required to remove the excess heat. Lights are modeled by wattage and operational hours.
- Use and inefficiencies in refrigeration, compressor cooling, and heat pumps. Some units are more efficient than others. Electricity is required to move the heat from inside a compartment to outside it. Again, this is a function of the R-Value and the temperature difference between the inside and outside of the unit.
- Plug loads such as computers, printers, mini-fridges, microwaves, portable heaters, monitors, etc. These can be a significant part of the overall electricity consumption of the building, as well as contributing to heat production.
- The schedule of operation for lights, plug loads, motors, etc. is a critical component of how much energy is used.

AkWarm adds up these heat losses and the internal heat gains based on individual unit usage schedules. These estimated heat and electrical usages are compared to actual use on both a yearly and seasonal basis. If the AkWarm model is within 5 % to 10% of the most recent 12 months usage identified during benchmarking, the model is considered accurate enough to make predictions of energy savings for possible EEMs.

4.2 AkWarm Calculated Savings for the Bethel City Shop

Based on the field inspection results and discussions with the building owners/operators, auditors developed potential EEMs for the facility. These EEMs are then entered into AkWarm to determine if the EEM saves energy and is cost effective (i.e. will pay for itself). AkWarm calculates the energy and money saved by each EEM and calculates the length of time for the savings in reduced energy consumption to pay for the installation of the EEM. AkWarm makes recommendations based on the Savings/Investment Ratio (SIR), which is defined as ratio of the savings generated over the life of the EEM divided by the installed cost. Higher SIR values are better and any SIR above one is considered acceptable. If the SIR of an EEM is below one, the energy savings will not pay for the cost of the EEM and the EEM is not recommended. Preferred EEMs are listed by AkWarm in order of the highest SIR.

A summary of the savings from the recommended EEMs are listed in this table.

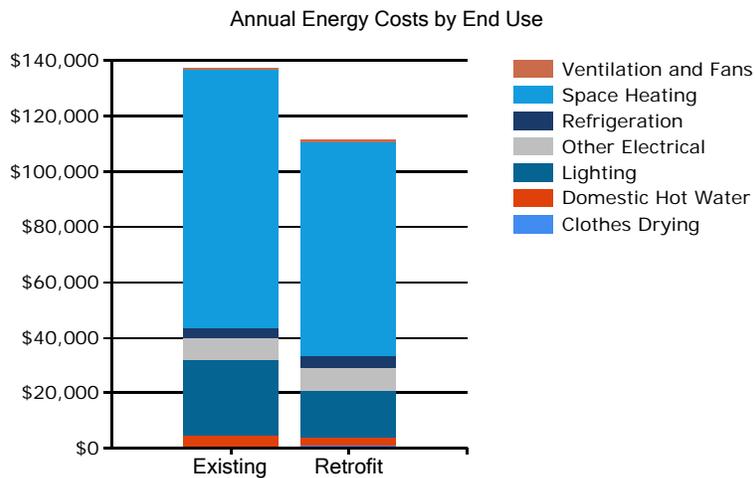
| Description | Space Heating | Water Heating | Lighting | Refrigeration | Other Electrical | Clothes Drying | Ventilation Fans | Total |
|-----------------------------|---------------|---------------|----------|---------------|------------------|----------------|------------------|------------------|
| Existing Building | \$91,532 | \$3,744 | \$27,500 | \$4,139 | \$7,498 | \$626 | \$501 | \$135,539 |
| With All Proposed Retrofits | \$76,664 | \$2,864 | \$17,714 | \$4,139 | \$7,498 | \$626 | \$501 | \$110,005 |
| SAVINGS | \$14,868 | \$880 | \$9,786 | \$0 | \$0 | \$0 | \$0 | \$25,534 |

Savings in these categories do not reflect interaction with other categories. So, for example, the savings in lighting does not affect the added space heating cost to make up for the heat saved in replacing less-efficient lights with more-efficient lights that waste less heat.

4.3 AkWarm Projected Energy Costs after Modifications

The AkWarm recommended EEMs appear to result in significant savings in lighting and space heating. The energy cost by end use breakdown was provided by AkWarm based on the field inspection and does not indicate that all individual fixtures and appliances were directly measured. The current energy costs are shown below on the left hand bar of the graph and the projected energy costs, assuming use of the recommended EEMs, are shown on the right.

This graphical format allows easy visual comparison of the various energy requirements of the facility. In the event that not all recommended retrofits are desired, the proposal energy savings can be estimated from visual interpretation from this graph.



4.4 Additional Modeling Methods

The AkWarm program effectively models wood-framed and other buildings with standard heating systems and relatively simple HVAC systems. AkWarm models of more complicated mechanical systems are sometimes poor due to a number of simplifying assumptions and limited input of some variables. Furthermore, AKWarm is unable to model complex HVAC systems such as variable frequency motors, variable air volume (VAV) systems, those with significant digital or pneumatic controls or significant heat recovery capacity. In addition, some other building methods and occupancies are outside AkWarm capabilities.

This report section is included in order to identify benefits from modifications to those more complex systems or changes in occupant behavior that cannot be addressed in AkWarm.

The Bethel City Shop could be modeled well in AKWarm. Retrofits for the HVAC system were adequately modeled in AkWarm and did not require additional calculations.

5.0 BUILDING OPERATION AND MAINTENANCE (O & M)

5.1 Operations and Maintenance

A well-implemented operation and maintenance (O & M) plan is often the driving force behind energy savings. Such a plan includes preserving institutional knowledge, directing preventative maintenance, and scheduling regular inspections of each piece of HVAC equipment within the building. Routine maintenance includes the timely replacement of filters, belts and pulleys, the proper greasing of bearings and other details such as topping off the glycol tanks. Additional benefits to a maintenance plan are decreased down time for malfunctioning equipment, early indications of problems, prevention of exacerbated maintenance issues, and early detection of overloading/overheating issues. A good maintenance person knows the building's equipment well enough to spot and repair minor malfunctions before they become major retrofits.

Operations and Maintenance staff implementing a properly designed O & M plan will:

- Track and document
 - Renovations and repairs,
 - Utility bills and fuel consumption, and
 - System performance.
- Keep available for reference
 - A current Building Operating Plan including an inventory of installed systems,
 - The most recent available as-built drawings,
 - Reference manuals for all installed parts and systems, and
 - An up-to-date inventory of on-hand replacement parts.
- Provide training and continuing education for maintenance personnel.
- Plan for commissioning and re-commissioning at appropriate intervals.

5.2 Commissioning

Commissioning of a building is the verification that the HVAC systems perform within the design or usage ranges of the Building Operating Plan. This process ideally, though seldom, occurs as the last phase in construction. HVAC system operation parameters degrade from ideal over time due to incorrect maintenance, improper replacement pumps, changes in facility tenants or usage, changes in schedules, and changes in energy costs or loads. Ideally, re-commissioning of a building should occur every five to ten years. This ensures that the HVAC system meets the potentially variable use with the most efficient means.

5.3 Building Specific Recommendations

There is damage to the exterior envelope of the City Shop in several locations. In order to avoid the severe heat loss that occurs at these locations, appropriate repairs should be made.

The building is equipped with several air handling units (AHUs) that do not operate properly. There are several benefits to having operational AHUs such as a cleaner, more comfortable work environment, and the ability to more adequately control the temperature of the building. Repairs should be made to these AHUs.

A major reason for not running the AHUs is dust. The dust that is accumulated in the building circulates creating an uncomfortable environment. Extra measures should be taken to lower the dust levels in the building such as:



- Cleaning the vehicles before they enter the shop
- Placing boot cleaners at entrances
- Installing additional air filters.





APPENDICES





Appendix A Recommended Energy Efficiency Measures

A number of Energy Efficiency Measures (EEMs) are available to reduce the energy use and overall operating cost for the facility. The EEMs listed below are those recommended by AkWarm based on the calculated savings/investment ration (SIR) as described in Appendix E. AkWarm also provides a breakeven cost, which is the maximum initial cost of the EEM that will still return a SIR of one or greater.

This section describes each recommended EEM and identifies the potential energy savings and installation costs. This also details the calculation of breakeven costs, simple payback, and the SIR for each recommendation. The recommended EEMs are grouped together generally by the overall end use that will be impacted.

A.1 Temperature Control

Approximately 25 programmable thermostats should be installed and programmed in the City Shop. Programmable thermostats allow for automatic temperature setback, which reduce usage more reliably than manual setbacks. Reduction of the nighttime temperature set point in the City Shop will decrease the energy usage.

| Rank | Building Space | | Recommendation | | |
|-------------------|------------------|---------------------------------|---|----------------------|----------|
| 2 | Bethel City Shop | | Install approximately 25 thermostats and Implement a Heating Temperature Unoccupied Setback to 60.0 deg F for the Bethel City Shop space. | | |
| Installation Cost | \$5,000 | Estimated Life of Measure (yrs) | 15 | Energy Savings (/yr) | \$14,122 |
| Breakeven Cost | \$207,926 | Savings-to-Investment Ratio | 42 | Simple Payback yrs | 0 |





A.2 Electrical Loads

A.2.1 Lighting

The electricity used by lighting eventually ends up as heat in the building. In areas where electricity is more expensive than other forms of energy, or in areas where the summer temperatures require cooling; this additional heat can be both wasteful and costly. Converting to more efficient lighting reduces cooling loads in the summer and allows the user to control heat input in the winter. The conversion from T12 (one and a half inch fluorescent bulbs) to T8 (one inch), T5 (5/8 inch), Compact Fluorescent Lights (CFL), or LED bulbs provides a significant increase in efficiency. LED bulbs can be directly placed in existing fixtures. The LED bulb bypasses the ballast altogether, which removes the often irritating, “buzzing” noise that magnetic ballasts tend to make.

Several economical retrofit opportunities are available for the City Shop. Replacing the high bay metal halide fixtures in the shops with high bay fluorescent fixtures with T5 lamps will save the City Shop a significant amount of money and energy. Also, replacing incandescent lamps with CFLs and current fluorescent tubes with energy saving 25 watt T8s will be economical at this time.

| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|----------|---|----|----------------------|--------------------------------------|--|
| 1 | Sauna | 2 INCAN A Lamp, Halogen 60W with Manual Switching | | | Replace with 2 FLUOR CFL, A Lamp 20W | |
| Installation Cost | \$10 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$119 | |
| Breakeven Cost | \$76 | Savings-to-Investment Ratio | 76 | Simple Payback yrs | 0 | |

| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|-----------------------------|---|----|----------------------|--|--|
| 3 | Rest Room, Under stair Area | INCAN (4) A Lamp, Halogen 60W with Manual Switching | | | Replace with FLUOR (4) CFL, A Lamp 20W | |
| Installation Cost | \$20 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$71 | |
| Breakeven Cost | \$453 | Savings-to-Investment Ratio | 23 | Simple Payback yrs | 0 | |

| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|-----------|---|----|----------------------|---|--|
| 4 | Main Shop | 4 MH 400 Watt StdElectronic with Manual Switching | | | Replace with 4 FLUOR (4) T5 45.2" F54W/T5 HO Energy-Saver (2) StdElectronic | |
| Installation Cost | \$1,520 | Estimated Life of Measure (yrs) | 10 | Energy Savings (/yr) | \$3,936 | |
| Breakeven Cost | \$34,403 | Savings-to-Investment Ratio | 23 | Simple Payback yrs | 0 | |

| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|------------|---|----|----------------------|--|--|
| 5 | Break room | INCAN (2) A Lamp, Std 40W with Manual Switching | | | Replace with FLUOR (2) CFL, A Lamp 15W | |
| Installation Cost | \$10 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$22 | |
| Breakeven Cost | \$142 | Savings-to-Investment Ratio | 14 | Simple Payback yrs | 0 | |





| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|-----------|--|-----|---|-----|
| 7 | Main Shop | FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$8 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$5 |
| Breakeven Cost | \$34 | Savings-to-Investment Ratio | 4.3 | Simple Payback yrs | 1 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|-----------------------|--|-----|--|---------|
| 8 | Main Shop, Water Shop | 51 MH 400 Watt StdElectronic with Manual Switching | | Replace with 51 FLUOR (4) T5 45.2" F54W/T5 HO Energy-Saver (2) StdElectronic | |
| Installation Cost | \$19,380 | Estimated Life of Measure (yrs) | 10 | Energy Savings (/yr) | \$4,862 |
| Breakeven Cost | \$42,494 | Savings-to-Investment Ratio | 2.2 | Simple Payback yrs | 4 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|-----------|--|-----|---|-------|
| 9 | Mezzanine | 9 FLUOR (2) T12 8' F96T12/HO 95W Energy-Saver Magnetic with Manual Switching | | Replace with 9 FLUOR (2) T8 8' F96T8 57W Energy-Saver HighEfficElectronic | |
| Installation Cost | \$1,800 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$441 |
| Breakeven Cost | \$2,815 | Savings-to-Investment Ratio | 1.6 | Simple Payback yrs | 4 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|---|-----|---|-------|
| 10 | Exit Signs: Hall A, Mezzanine, Hall D, Dressing Room, Water Office, Water Shop, Boiler Room | 10 FLUOR (2) CFL, A Lamp 7W with Manual Switching | | Replace with 10 LED 4W Module StdElectronic | |
| Installation Cost | \$500 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$114 |
| Breakeven Cost | \$728 | Savings-to-Investment Ratio | 1.5 | Simple Payback yrs | 4 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------|--|-----|---|------|
| 12 | Hall D | FLUOR (2) T12 4' F40T12 34W Energy-Saver StdElectronic with Manual Switching | | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$132 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$23 |
| Breakeven Cost | \$145 | Savings-to-Investment Ratio | 1.1 | Simple Payback yrs | 6 |





| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|--|---|-----|----------------------|---|--|
| 13 | Hall A, Shop Office, Main Shop, Laundry Room | 6 FLUOR (4) T12 4' F40T12 34W Energy-Saver (2) Magnetic with Manual Switching | | | Replace with 6 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$1,200 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$193 | |
| Breakeven Cost | \$1,234 | Savings-to-Investment Ratio | 1.0 | Simple Payback yrs | 6 | |

A.2.2 Other Electrical Loads

There are no recommended EEMs in this category.

A.3 Building Envelope: Recommendations for change

A.3.1 Exterior Walls

There are no recommended EEMs in this category. Improving the insulation on the walls is not economical at this time. Details explaining these retrofit attempts can be found in Appendix B.

A.3.2 Foundation and/or Crawlspace

There are no recommended EEMs in this category

A.3.3 Roofing and Ceiling

There are no recommended EEMs in this category. Improving the insulation on the ceilings is not economical at this time. Details explaining these retrofit attempts can be found in Appendix B.

A.3.4 Windows

There are no recommended EEMs in this category.

A.3.5 Doors

Adding insulated blankets to the garage doors is found to be economical at this time.

| Rank | Location | Size/Type, Condition | | | Recommendation | |
|-------------------|------------------------------------|---|-----|----------------------|---|--|
| 6 | Garage Door: 2" Metal Foam Core | Door Type: Sectional, EPS core, 2", thermal break Insulating Blanket: None Modeled R-Value: 3.4 | | | Add R-5 insulating blanket to garage door | |
| Installation Cost | \$1,225 | Estimated Life of Measure (yrs) | 15 | Energy Savings (/yr) | \$697 | |
| Breakeven Cost | \$10,267 | Savings-to-Investment Ratio | 8.4 | Simple Payback yrs | 2 | |



A.4 Building Heating System / Air Conditioning

A.4.1 Heating and Heat Distribution

The set of Grundfos UPS 80-160 circulation pumps can be upgraded to new variable speed Grundfos Magna pumps which will lower the energy usage in the City Shop. The oil fired water heater in this building was installed in 1982. Replacing this water heater with an indirect fired water heater from a loop off the boiler will decrease the cost to heat water because the boiler is more efficient and standby losses will be decreased by eliminating one chimney.

| Rank | Location | Existing Condition | Recommendation | | | |
|-------------------|----------|---|----------------|----------------------|-------|--|
| 11 | | replace UPS 80-60 with variable speed magna pumps, remove direct fired water heater an indirect fired water heater. | | | | |
| Installation Cost | \$11,000 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$929 | |
| Breakeven Cost | \$15,824 | Savings-to-Investment Ratio | 1.4 | Simple Payback yrs | 12 | |

A.4.2 Air Conditioning

The City Shop is not equipped with Air Conditioning.

A.4.3 Ventilation

There are no recommended EEMs in this category.

A.4.4 Air Changes and Air Tightening

No EEMs are recommended in this area because of the difficulty of quantifying the amount of leaking air and the savings. However, by using a blower door to depressurize the building and an infra-red camera, the location of significant air leaks can be determined so they can be repaired. Several locations on the envelope in the City Shop have damage that allows heat to escape that should be repaired.

Appendix B Energy Efficiency Measures that are NOT Recommended

As indicated in other sections of the report, a number of potential EEMs were identified that were determined to be NOT cost effective by the AkWarm model. These EEMs are not currently recommended on the basis of energy savings alone because each may only save a small amount of energy, have a high capital cost, or be expensive to install. While each of these EEMs is not cost effective at this time, future changes in building use such as longer operating hours, higher energy prices, new fixtures or hardware on the market, and decreases in installation effort may make any of these EEMs cost effective in the future. These potential EEMs should be reviewed periodically to identify any changes to these factors that would warrant re-evaluation.

Although these upgrades are not currently cost effective on an energy cost basis, the fixtures, hardware, controls, or operational changes described in these EEMs should be considered when replacing an existing fixture or unit for other reasons. For example, replacing an existing window with a triple-pane window may not be cost effective based only on energy use, but if a window is going to be replaced for some other reason, then the basis for a decision is only the incremental cost of upgrading from a less efficient replacement window to a more efficient replacement window. That incremental cost difference will have a significantly shorter payback, especially since the installation costs are likely to be the same for both units.

| The following measures were not found to be cost-effective: | | | | | | |
|---|--|---|---------------------------------|--------------------------|----------------------------------|------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 14 | Lighting: Main Shop | Replace with 5 FLUOR (4) T8 4' F32T8 25W Energy-Saver (2) Instant StdElectronic | \$156 | \$1,000 | 0.96 | 6.4 |
| 15 | Exterior Door: Metal 1/4 lite | Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. | \$41 | \$1,071 | 0.89 | 26 |
| 16 | Window/Skylight: Dbl Alum Therm Brk Other | Replace existing window with U-0.22 vinyl window | \$289 | \$5,744 | 0.86 | 20 |
| 17 | Lighting: Hall A, Mezzanine, Part Room, Hall D, Break room, Men's Bathroom, Shower Room, Main Shop, Laundry Room | Replace with 29 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$451 | \$3,828 | 0.73 | 8.5 |
| 18 | Lighting: Mezzanine Office, Tool Room, Server Room, Men's Bathroom, Main Shop | Replace with 10 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$156 | \$1,320 | 0.73 | 8.5 |



| The following measures were not found to be cost-effective: | | | | | | |
|---|---|---|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 19 | Lighting: Hall C, Main Shop | Replace with 9 FLUOR (4) T8 4' F32T8 32W Standard Instant StdElectronic | \$194 | \$1,800 | 0.67 | 9.3 |
| 20 | Exterior Door: Metal 1/2 Lite | Remove existing door and install standard pre-hung U- 0.16 insulated door, including hardware. | \$28 | \$1,064 | 0.62 | 38 |
| 21 | Window/Skylight: Double Wood/Vinyl >3/8: Other | Replace existing window with U-0.22 vinyl window | \$191 | \$5,947 | 0.55 | 31 |
| 22 | Lighting: Tool Room, Main Shop, Water Shop | Replace with 4 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$58 | \$800 | 0.45 | 14 |
| 23 | Lighting: Hall A, Shop Office, Water Shop | Replace with 13 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$190 | \$2,600 | 0.45 | 14 |
| 24 | Window/Skylight: Triple Vinyl Other | Replace existing window with U-0.22 vinyl window | \$87 | \$3,955 | 0.38 | 46 |
| 25 | Lighting: Hall B | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$14 | \$264 | 0.32 | 20 |
| 26 | Lighting: Hall A, Hall C, Part Room, Hall D, Break room, Dressing Room, Men's Bathroom, Shower Room | Replace with 13 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$88 | \$1,716 | 0.32 | 20 |
| 27 | Exterior Door: Flush Metal 2" Foam | Remove existing door and install standard pre-hung U- 0.16 insulated door, including hardware. | \$35 | \$2,666 | 0.31 | 75 |
| 28 | Lighting: Plans Room, Conference, Wood Shop | Replace with 5 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$52 | \$1,000 | 0.28 | 19 |
| 29 | Window/Skylight: Triple Vinyl South | Replace existing window with U-0.22 vinyl window | \$21 | \$1,316 | 0.27 | 64 |
| 30 | Cathedral Ceiling: House | Install R-14 rigid board insulation. No cost included for covering insulation. | \$5,831 | \$509,435 | 0.27 | 87 |
| 31 | Lighting: Claire's Office, Storage A | Replace with 8 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$42 | \$1,056 | 0.22 | 25 |
| 32 | Lighting: Water Office, Main Water Office, Boiler Room | Replace with 10 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$52 | \$1,320 | 0.22 | 25 |





| The following measures were not found to be cost-effective: | | | | | | |
|---|---|--|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 33 | Lighting: Claire's Office | Replace with 4 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$30 | \$800 | 0.20 | 27 |
| 34 | Lighting: Claire's Office | Replace with 2 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$10 | \$400 | 0.13 | 42 |
| 35 | Above-Grade Wall: House | Install R-30 rigid foam board to exterior and cover with T1-11 siding or equivalent. | \$3,385 | \$604,478 | 0.13 | 180 |
| 36 | Lighting: Plans Room, Conference, Wood Shop | Replace with 10 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$50 | \$2,000 | 0.14 | 40 |
| 37 | Lighting: Boiler Room | Replace with FLUOR (4) T8 4' F32T8 25W Energy-Saver (2) Instant StdElectronic | \$5 | \$200 | 0.13 | 43 |
| 38 | Lighting: Chris's Office | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$5 | \$264 | 0.10 | 57 |
| 39 | Lighting: Stair A & B, Mezzanine Office, Water Office, Water Hallway, Main Water Office, Wood Shop, Water Shop, Boiler Room | Replace with 27 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$62 | \$3,564 | 0.09 | 58 |





Appendix C Significant Equipment List

HVAC Equipment

| Equipment | Manufacturer | Model No. | Fuel Type | Notes |
|------------------------|----------------|--------------|-----------|-----------------------|
| Boiler | Weil McLain | 88 Series | #2 | Two redundant boilers |
| Wood Shop Unit Heaters | Westinghouse | 134FR18T12 | Electric | Two units |
| Main Shop Unit Heaters | AO Smith motor | 206VC24J12 | Electric | Four units |
| Circulation Pump | Grundfos | 80-160 | Electric | Two units |
| Circulation Pump | Grundfos | 50-160 | Electric | Two units |
| AHU 1 | Trane | MCCA006 | Electric | not in use |
| Combustion air fan | AO Smith motor | | Electric | 1/2 hp |
| Main Shop Unit Heaters | n/a | n/a | Electric | 1/4 hp |
| Storage Unit Heaters | n/a | n/a | Electric | 1/4 hp |
| AHU 2 | Trane | CLCM-1M-15A | Electric | not in use |
| AHU 3 | Trane | CLCM-1M-15A | Electric | not in use |
| Waste oil burner | Clean Burn | CB 525 | waste | n/a |
| Fan motor | Marathon | n/a | Electric | 2 hp |
| Exhaust motor | Fasco | n/a | Electric | 1/3 hp |
| Oil pump motor | n/a | n/a | Electric | 1/6 hp |
| Waste oil burner | Sunfire | FLA 495 | waste | n/a |
| Fan motor | n/a | n/a | Electric | 1 1/2 hp |
| Burner motor | n/a | n/a | Electric | 1/8 hp |
| Water Heater | Copperglas | 2.8-G-90-A-0 | #2 | 90 gal tank |
| Circulation Pump | Grundfos | UP 15-42 | Electric | n/a |





Lighting

| Location | Lighting Type | Bulb Type | Quantity | KWH/YR | Cost/YR |
|-------------|----------------------|-----------|----------|--------|-----------|
| Shops | Metal Halide | 400 W | 47 | 65654 | \$ 11,161 |
| Main Shop | Metal Halide | 400 W | 8 | 31290 | 5,319 |
| Exterior | High Pressure Sodium | 250 W | 6 | 7356 | 1251 |
| Office | Fluorescent | T12 | 58 | 6096 | 1,036 |
| Mezzanine | Fluorescent | T12 | 18 | 5050 | 859 |
| Office | Fluorescent | T12 | 54 | 4279 | 727 |
| Office | Fluorescent | T12 | 52 | 4120 | 700 |
| Main Shop | Fluorescent | T12 | 36 | 3783 | 643 |
| Exterior | LED | 100W | 7 | 3565 | 606 |
| Office | Fluorescent | T12 | 40 | 3169 | 539 |
| Office/Shop | Fluorescent | T12 | 24 | 2522 | 429 |
| Office/Shop | Fluorescent | T12 | 20 | 2102 | 357 |
| Office/Shop | Fluorescent | T12 | 20 | 2102 | 357 |
| Office | Fluorescent | T12 | 20 | 2102 | 357 |
| Shops | Fluorescent | T12 | 20 | 2102 | 357 |
| Office | LED | 40 W | 14 | 2071 | 352 |
| Office | Fluorescent | T12 | 26 | 2060 | 350 |
| Office | Fluorescent | T12 | 16 | 1682 | 286 |
| Exterior | Metal Halide | 70 W | 4 | 1402 | 238 |
| Shops | Fluorescent | T12 | 16 | 1268 | 216 |
| Exterior | LED | 48 W | 5 | 1243 | 211 |
| Exit | Fluorescent | 14 | 10 | 1227 | 209 |
| Office | Fluorescent | T12 | 16 | 1177 | 200 |
| Sauna | Halogen | 60 W | 2 | 1052 | 179 |
| Office | Fluorescent | T12 | 8 | 634 | 108 |
| Storage/RR | Halogen | 60 W | 4 | 626 | 106 |
| Hall | Fluorescent | T12 | 2 | 533 | 91 |
| Boiler | Fluorescent | T12 | 4 | 317 | 54 |
| Hall | Fluorescent | T12 | 4 | 317 | 54 |
| Office | Fluorescent | T12 | 4 | 317 | 54 |
| Break room | Incandescent | 40 W | 2 | 209 | 36 |
| Shops | Fluorescent | T8 | 2 | 150 | 26 |
| Bathroom | Fluorescent | CFL | 4 | 115 | 20 |
| Boiler | Fluorescent | 14 W | 1 | 37 | 6 |
| Bathroom | Fluorescent | 14 W | 2 | 37 | 6 |

Energy Consumption calculated by AkWarm based on wattage, schedule, and an electricity rate of \$0.17/kWh





Plug Loads

| Equipment | Location | Manufacturer | KWH/YR | Cost/YR |
|-------------------------|-------------|--------------|--------|----------|
| Head bolt | Exterior | n/a | 13774 | \$ 2,342 |
| Telephone System | Server Room | n/a | 5523 | 939 |
| Sauna heater | Sauna | n/a | 4686 | 797 |
| Air Compressors | Shops | n/a | 4592 | 781 |
| Computer Towers | Offices | n/a | 2922 | 497 |
| Desktop Printers | Offices | n/a | 1837 | 312 |
| Welders | Shops | n/a | 1748 | 297 |
| Computer Monitors | Offices | n/a | 1565 | 266 |
| Space Heaters | Offices | n/a | 1562 | 266 |
| Washing Machine | Shops | Speed Queen | 1534 | 261 |
| Misc. tools | Shops | n/a | 1526 | 259 |
| Coffee Makers | Offices | n/a | 704 | 120 |
| Laptops | Offices | n/a | 587 | 100 |
| Hand Dryer | Bathrooms | n/a | 470 | 80 |
| Microwaves | Offices | n/a | 459 | 78 |
| Multi-use workstations | Offices | n/a | 344 | 58 |
| Fans | Offices | n/a | 148 | 25 |
| Humidifier | Offices | n/a | 73 | 12 |
| Electronic air purifier | Offices | n/a | 52 | 9 |

Energy Consumption calculated by AkWarm based on wattage, schedule, and an electricity rate of \$0.17/kWh



Appendix D Local Utility Rate Structure

The information in this section was provided directly from the local utility or gathered from the local utility’s publicly available information at the time of the audit. All language used in this section was provided by the local utility and believed to be current at the time of the audit. Energy use terms, specific fees, and other specific information are subject to change. Updated rate structure information should be gathered from the utility during future discussion of rates, rate structures and utility pricing agreements.

Bethel Utilities Corporation Rate Structure for March 1, 2011 bill:

| RATE TYPE | |
|---------------------------------|----------------------|
| Customer Charge | \$42.93 |
| Demand Charge | \$30.02/KW |
| Energy Charge | \$0.2925/KWH |
| Power Adjustment Surcharge | \$0.0820/KWH |
| RCC | \$0.000552/KWH |
| PCE | (minus) \$0.2874/KWH |
| Effective Rate (Total Less PCE) | \$0.165/KWH |

***The effective rate is all of the charges totaled together and divided by the kilowatt hour used.

Buildings owned by the city of Bethel qualify for the Power Cost Equalization program. Bethel Utilities Corporation is eligible for payment up 70 KWH per person. Due to this calculation, 100% of the KWH used by city buildings in Bethel qualifies for an adjustment.

Customer Charge

A flat fee that covers costs for meter reading, billing and customer service.

Utility Charge (kWh charge)

This charge is multiplied by the number of kilowatt-hours (kWh) used in a monthly billing period. It covers the costs to maintain power plants and substations, interest on loans as well as wires, power poles and transformers.

Fuel and Purchased Power

This charge is based on a combination of forecasted and actual power costs. The monthly charge allows Golden Valley to pass on increases and decreases in fuel and energy purchases to our members. It is calculated quarterly and multiplied by the kilowatt-hours used each month.

Regulatory Charge

This charge of .000492 per kWh is set by the Regulatory Commission of Alaska (RCA). Since November 1, 1992, the Regulatory Commission of Alaska has been funded by a Regulatory Charge to the utilities it regulates rather than through the State general fund. The charge, labeled "Regulatory Cost Charge." on your bill, is set by the RCA, and applies to all retail kilowatt-hours sold by regulated electric utilities in Alaska.

Appendix E Analysis Methodology

Data collected was processed using AkWarm energy use software to estimate current energy consumption by end usage and calculate energy savings for each of the proposed energy efficiency measures (EEMs). In addition, separate analysis may have been conducted to evaluate EEMs that AkWarm cannot effectively model to evaluate potential reductions in annual energy consumption. Analyses were conducted under the direct supervision of a Certified Energy Auditor, Certified Energy Manager, or a Professional Engineer.

EEMs are evaluated based on building use, maintenance and processes, local climate conditions, building construction type, function, operational schedule and existing conditions. Energy savings are calculated based on industry standard methods and engineering estimations. Each model created in AkWarm is carefully compared to existing utility usage obtained from utility bills. The AkWarm analysis provides a number of tools for assessing the cost effectiveness of various improvement options. The primary assessment value used in this audit report is the Savings/Investment Ratio (SIR). The SIR is a method of cost analysis that compares the total cost savings through reduced energy consumption to the total cost of a project over its assumed lifespan, including both the construction cost and ongoing maintenance and operating costs. Other measurement methods include Simple Payback, which is defined as the length of time it takes for the savings to equal the total installed cost and Breakeven Cost, which is defined as the highest cost that would yield a Savings/Investment Ratio of one.

EEMs are recommended by AkWarm in order of cost-effectiveness. AkWarm first calculates individual SIRs for each EEM, and then ranks the EEMs by SIR, with higher SIRs at the top of the list. An individual EEM must have a SIR greater than or equal to one in order to be recommended by AkWarm. Next AkWarm modifies the building model to include the installation of the first EEM and then re-simulates the energy use. Then the remaining EEMs are re-evaluated and ranked again. AkWarm goes through this iterative process until all suggested EEMs have been evaluated.

Under this iterative review process, the savings for each recommended EEM is calculated based on the implementation of the other, more cost effective EEMs first. Therefore, the implementation of one EEM affects the savings of other EEMs that are recommended later. The savings from any one individual EEM may be relatively higher if the individual EEM is implemented without the other recommended EEMs. For example, implementing a reduced operating schedule for inefficient lighting may result in relatively higher savings than implementing the same reduced operating schedule for newly installed lighting that is more efficient. If multiple EEMs are recommended, AkWarm calculates a combined savings.

Inclusion of recommendations for energy savings outside the capability of AkWarm will impact the actual savings from the AkWarm projections. This will almost certainly result in lower energy savings and monetary savings from AkWarm recommendations. The reality is that only so much energy is consumed in a building. Energy savings from one EEM reduces the amount of energy that can be saved from additional EEMs. For example, installation of a lower wattage light bulb does not save energy or money if the bulb is never turned on because of a schedule or operational change at the facility.

Appendix F Audit Limitations

The results of this audit are dependent on the input data provided and can only act as an approximation. In some instances, several EEMs or installation methods may achieve the identified potential savings. Actual savings will depend on the EEM selected, the price of energy, and the final installation and implementation methodology. Competent tradesmen and professional engineers may be required to design, install, or otherwise implement some of the recommended EEMs. This document is an energy use audit report and is not intended as a final design document, operation, and maintenance manual, or to take the place of any document provided by a manufacturer or installer of any device described in this report.

Cost savings are calculated based on estimated initial costs for each EEM. Estimated costs include labor and equipment for the full up-front investment required to implement the EEM. The listed installation costs within the report are conceptual budgetary estimates and should not be used as design estimates. The estimated costs are derived from Means Cost Data, industry publications, local contractors and equipment suppliers, and the professional judgment of the CEA writing the report and based on the conditions at the time of the audit.

Cost and energy savings are approximations and are not guaranteed.

Additional significant energy savings can usually be found with more detailed auditing techniques that include actual measurements of electrical use, temperatures in the building and HVAC ductwork, intake and exhaust temperatures, motor runtime and scheduling, and infrared, air leakage to name just a few. Implementation of these techniques is the difference between a Level III Energy Audit and the Level II Audit that has been conducted.

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Appendix G References

Although not all documents listed below are specifically referenced in this report, each contains information and insights considered valuable to most buildings.

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Appendix H Typical Energy Use and Cost – Fairbanks and Anchorage

This report provides data on typical energy costs and use on selected building in Fairbanks and Anchorage, Alaska for comparative purposes only. The values provided by the US Energy Information Administration CBECS study included a broader range of building types for the Continental U.S. are not necessarily good comparatives for buildings and conditions in Alaska. An assortment of values from CBECS may be found in Appendix I.

The Alaska data described in this report came from a benchmarking study NORTECH and other Technical Services Providers (TSPs) completed on publicly owned buildings in Alaska under contract with AHFC. This study acquired actual utility data for municipal buildings and schools in Alaska for the two recent full years. The utility data included costs and quantities including fuel oil, electricity, propane, wood, steam, and all other energy source usage. This resulted in a database of approximately 900 buildings. During the course of the benchmarking study, the comparisons made to the CBECS data appeared to be inappropriate for various reasons. Therefore, this energy use audit report references the average energy use and energy cost of Anchorage and Fairbanks buildings as described below.

The Alaska benchmarking data was evaluated in order to find valid comparison data. Buildings with major energy use information missing were eliminated from the data pool. After detailed scrutiny of the data, the most complete information was provided to NORTECH by the Fairbanks North Star Borough School District (FNSBSD) and the Anchorage School District (ASD). The data sets from these two sources included both the actual educational facilities as well as the district administrative buildings and these are grouped together in this report as Fairbanks and Anchorage schools. These two sources of information, being the most complete and reasonable in-state information, have been used to identify an average annual energy usage for Fairbanks and for Anchorage in order to provide a comparison for other facilities in Alaska.

Several factors may limit the comparison of a specific facility to these regional indicators. In Fairbanks, the FNSBSD generally uses number two fuel oil for heating needs and electricity is provided by Golden Valley Electric Association (GVEA). GVEA produces electricity from a coal fired generation plant with additional oil generation upon demand. A few of the FNSBSD buildings in this selection utilize district steam and hot water. The FNSBSD has recently (the last ten years) invested significantly in envelope and other efficiency upgrades to reduce their operating costs. Therefore a reader should be aware that this selection of Fairbanks buildings has energy use at or below average for the entire Alaska benchmarking database.

Heating in Anchorage is through natural gas from the nearby natural gas fields. Electricity is also provided using natural gas. As the source is nearby and the infrastructure for delivery is in place, energy costs are relatively low in the area. As a result, the ASD buildings have lower energy costs, but higher energy use, than the average for the entire benchmarking database.

These special circumstances should be considered when comparing the typical annual energy use for particular buildings.



Appendix I Typical Energy Use and Cost – Continental U.S.

| Released: Dec 2006 | | | | | | | |
|--|--------------------------------|-----------------------------------|---|-------------------------------|----------------------------|--------------------------------|--------------------------|
| Next CBECS will be conducted in 2007 | | | | | | | |
| Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003 | | | | | | | |
| | All Buildings* | | | Sum of Major Fuel Consumption | | | |
| | Number of Buildings (thousand) | Floor space (million square feet) | Floor space per Building (thousand square feet) | Total (trillion BTU) | per Building (million BTU) | per Square Foot (thousand BTU) | per Worker (million BTU) |
| All Buildings* | 4,645 | 64,783 | 13.9 | 5,820 | 1,253 | 89.8 | 79.9 |
| Building Floor space (Square Feet) | | | | | | | |
| 1,001 to 5,000 | 2,552 | 6,789 | 2.7 | 672 | 263 | 98.9 | 67.6 |
| 5,001 to 10,000 | 889 | 6,585 | 7.4 | 516 | 580 | 78.3 | 68.7 |
| 10,001 to 25,000 | 738 | 11,535 | 15.6 | 776 | 1,052 | 67.3 | 72.0 |
| 25,001 to 50,000 | 241 | 8,668 | 35.9 | 673 | 2,790 | 77.6 | 75.8 |
| 50,001 to 100,000 | 129 | 9,057 | 70.4 | 759 | 5,901 | 83.8 | 90.0 |
| 100,001 to 200,000 | 65 | 9,064 | 138.8 | 934 | 14,300 | 103.0 | 80.3 |
| 200,001 to 500,000 | 25 | 7,176 | 289.0 | 725 | 29,189 | 101.0 | 105.3 |
| Over 500,000 | 7 | 5,908 | 896.1 | 766 | 116,216 | 129.7 | 87.6 |
| Principal Building Activity | | | | | | | |
| Education | 386 | 9,874 | 25.6 | 820 | 2,125 | 83.1 | 65.7 |
| Food Sales | 226 | 1,255 | 5.6 | 251 | 1,110 | 199.7 | 175.2 |
| Food Service | 297 | 1,654 | 5.6 | 427 | 1,436 | 258.3 | 136.5 |
| Health Care | 129 | 3,163 | 24.6 | 594 | 4,612 | 187.7 | 94.0 |
| Inpatient | 8 | 1,905 | 241.4 | 475 | 60,152 | 249.2 | 127.7 |
| Outpatient | 121 | 1,258 | 10.4 | 119 | 985 | 94.6 | 45.8 |
| Lodging | 142 | 5,096 | 35.8 | 510 | 3,578 | 100.0 | 207.5 |
| Retail (Other Than Mall) | 443 | 4,317 | 9.7 | 319 | 720 | 73.9 | 92.1 |
| Office | 824 | 12,208 | 14.8 | 1,134 | 1,376 | 92.9 | 40.3 |
| Public Assembly | 277 | 3,939 | 14.2 | 370 | 1,338 | 93.9 | 154.5 |
| Public Order and Safety | 71 | 1,090 | 15.5 | 126 | 1,791 | 115.8 | 93.7 |
| Religious Worship | 370 | 3,754 | 10.1 | 163 | 440 | 43.5 | 95.6 |
| Service | 622 | 4,050 | 6.5 | 312 | 501 | 77.0 | 85.0 |
| Warehouse and Storage | 597 | 10,078 | 16.9 | 456 | 764 | 45.2 | 104.3 |
| Other | 79 | 1,738 | 21.9 | 286 | 3,600 | 164.4 | 157.1 |
| Vacant | 182 | 2,567 | 14.1 | 54 | 294 | 20.9 | 832.1 |

This report references the Commercial Buildings Energy Consumption Survey (CBECS), published by the U.S. Energy Information Administration in 2006. Initially this report was expected to compare the annual energy consumption of the building to average national energy usage as documented below. However, a direct comparison between one specific building and the groups of buildings outlined below yielded confusing results. Instead, this report uses a comparative analysis on Fairbanks and Anchorage data as described in Appendix F. An abbreviated excerpt from CBECS on commercial buildings in the Continental U.S. is below.



Appendix J List of Conversion Factors and Energy Units

1 British Thermal Unit is the energy required to raise one pound of water one degree F°
1 Watt is approximately 3.412 BTU/hr
1 horsepower is approximately 2,544 BTU/hr
1 horsepower is approximately 746 Watts
1 "ton of cooling" is approximately 12,000 BTU/hr, the amount of power required to melt one short ton of ice in 24 hours

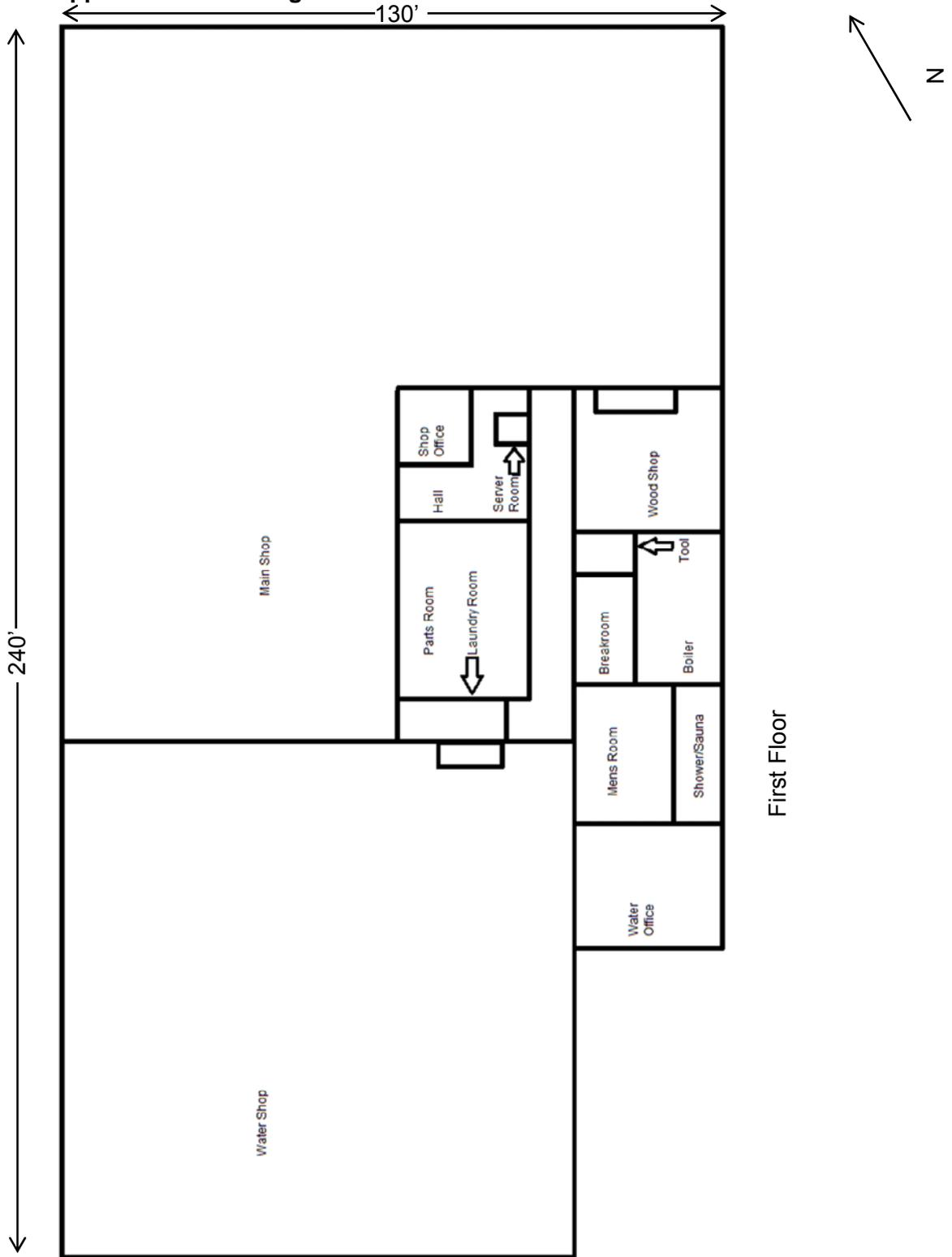
1 Therm = 100,000 BTU
1 KBTU = 1,000 BTU
1 KWH = 3413 BTU
1 KW = 3413 BTU/Hr
1 Boiler HP = 33,400 BTU/Hr
1 Pound Steam = approximately 1000 BTU
1 CCF of natural gas = approximately 1 Therm
1 inch H2O = 250 Pascal (Pa) = 0.443 pounds/square inch (psi)
1 atmosphere (atm) = 10,1000 Pascal (Pa)

BTU British Thermal Unit
CCF 100 Cubic Feet
CFM Cubic Feet per Minute
GPM Gallons per minute
HP Horsepower
Hz Hertz
kg Kilogram (1,000 grams)
kV Kilovolt (1,000 volts)
kVA Kilovolt-Amp
KVAR Kilovolt-Amp Reactive
KW Kilowatt (1,000 watts)
KWH Kilowatt Hour
V Volt
W Watt

Appendix K List of Acronyms, Abbreviations, and Definitions

| | |
|--|--|
| ACH | Air Changes per Hour |
| AFUE | Annual Fuel Utilization Efficiency |
| Air Economizer | A duct, damper, and automatic control system that allows a cooling system to supply outside air to reduce or eliminate the need for mechanical cooling. |
| Ambient Temperature | Average temperature of the surrounding air |
| Ballast | A device used with an electric discharge lamp to cause the lamp to start and operate under the proper circuit conditions of voltage, current, electrode heat, etc. |
| CO₂ | Carbon Dioxide |
| CUI | Cost Utilization Index |
| CDD | Cooling Degree Days |
| DDC | Direct Digital Control |
| EEM | Energy Efficiency Measure |
| EER | Energy Efficient Ratio |
| EUI | Energy Utilization Index |
| FLUOR | Fluorescent |
| Grade | The finished ground level adjoining a building at the exterior walls |
| HDD | Heating Degree Days |
| HVAC | Heating, Ventilation, and Air-Conditioning |
| INCAN | Incandescent |
| NPV | Net Present Value |
| R-value | Thermal resistance measured in BTU/Hr-SF-F (Higher value means better insulation) |
| SCFM | Standard Cubic Feet per Minute |
| Savings to Investment Ratio (SIR) | Savings over the life of the EEM divided by Investment capital cost. Savings includes the total discounted dollar savings considered over the life of the improvement. Investment in the SIR calculation includes the labor and materials required to install the measure. |
| Set Point | Target temperature that a control system operates the heating and cooling system |
| Simple payback | A cost analysis method whereby the investment cost of an EEM is divided by the first year's savings of the EEM to give the number of years required to recover the cost of the investment. |

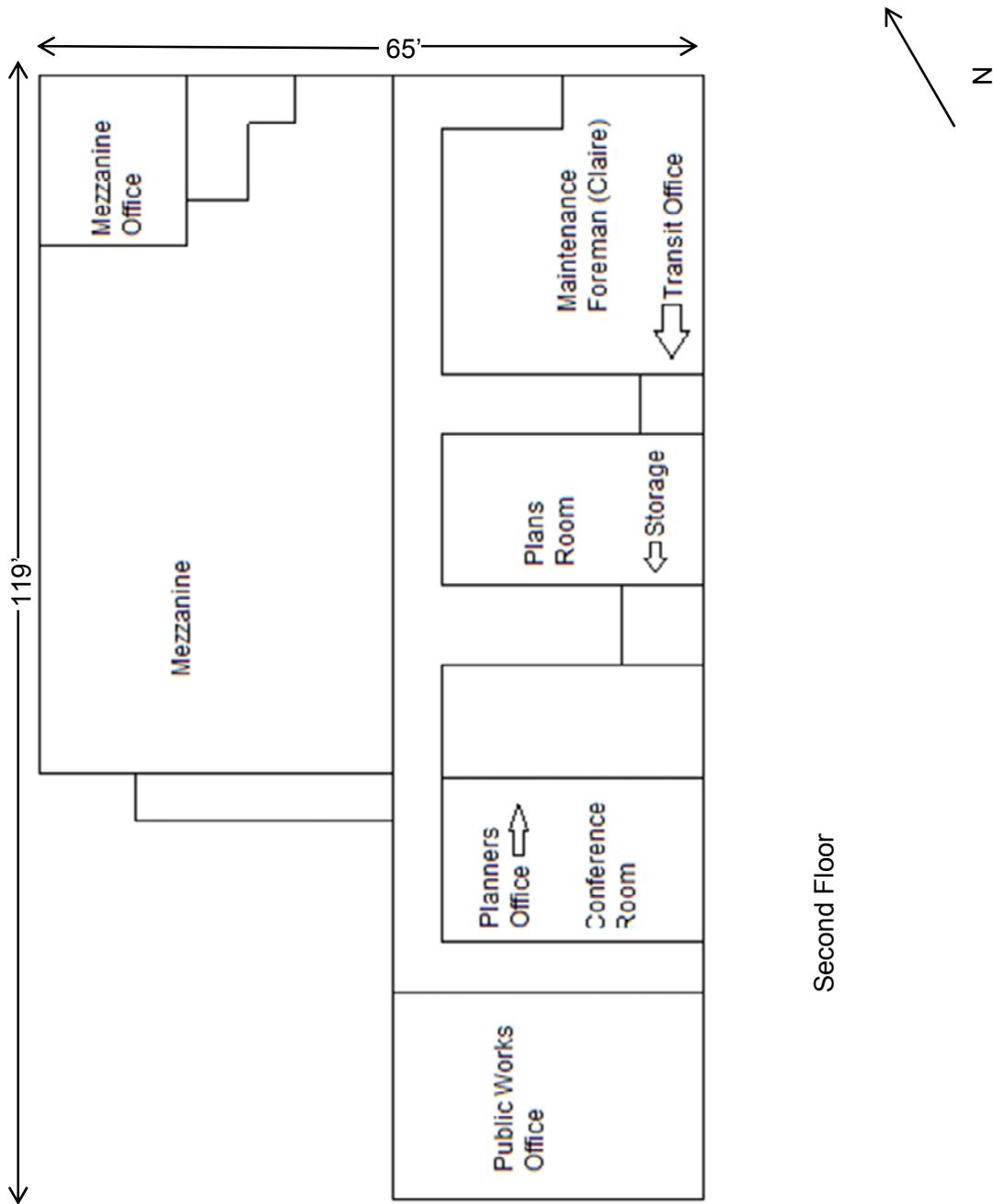
Appendix L Building Floor Plan



First Floor

Drawing by **NORTECH** from on-site fire escape plans





Second Floor

Drawing by **NORTECH** from on-site fire escape plans

ENERGY AUDIT – FINAL REPORT

**BETHEL CITY HALL
220 State Highway
Bethel, Alaska**



Prepared for:

Mr. Lee Foley
PO Box 1388
Bethel, Alaska

Prepared by:

David Lanning PE, CEA
Jeremy Spargur EIT, CEA-IT

July 12, 2012

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Environmental Engineering & Industrial Hygiene Consultants

Managing Office
2400 College Road
Fairbanks, Alaska 99709
p. 907.452.5688
f. 907.452.5694

3105 Lakeshore Dr. Suite 106A
Anchorage, Alaska 99517
p. 907.222.2445
f. 907.222.0915

4402 Thane Road
Juneau, Alaska 99801
p: 907.586.6813
f: 907.586.6819

www.nortechengr.com



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1.0 EXECUTIVE SUMMARY

NORTECH has completed an ASHRAE Level II Energy Audit of the Bethel City Hall, a 7,623 square foot facility. The audit began with benchmarking which resulted in a calculation of the energy consumption per square foot. A site inspection was completed on November 11, 2011 to obtain information about the lighting, heating, ventilation, cooling and other building energy uses. The existing usage data and current systems were then used to develop a building energy consumption model using AkWarm.

Once the model was calibrated, a number of Energy Efficiency Measures (EEMs) were developed from review of the data and observations. EEMs were evaluated and ranked on the basis of both energy savings and cost using a Savings/Investment Ratio (SIR). While these modeling techniques were successful in verifying that many of the EEMs would save energy, not all of the identified EEMs were considered cost effective based on the hardware, installation, and energy costs at the time of this audit.

While the need for a major retrofit can typically be identified by an energy audit, upgrading specific systems often requires collecting additional data and engineering and design efforts that are beyond the scope of the Level II energy audit. The necessity and amount of design effort and cost will vary depending on the scope of the specific EEMs planned and the sophistication and capability of the entire design team, including the building owners and operators. During the budgeting process for any major retrofit identified in this report, the building owner should add administrative and supplemental design costs to cover the individual needs of their own organization and the overall retrofit project.

The following table, from AkWarm, is a summary of the recommended EEMs for the Bethel City Hall. Additional discussion of the modeling process can be found in Section 3. Details of each individual EEM can be found in Appendix A of this report. A summary of EEMs that were evaluated but are not currently recommended is located in Appendix B.

| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|--------------------------------------|--|---------------------------------|--------------------------|----------------------------------|------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 1 | Lighting: Server Room | Replace with FLUOR (5) CFL, A Lamp 20W | \$176 | \$25 | 44 | 0.1 |
| 2 | Lighting: Hall B | Replace with FLUOR (2) CFL, A Lamp 20W | \$35 | \$10 | 22 | 0.3 |
| 3 | Setback Thermostat: Bethel City Hall | Implement a Heating Temperature Unoccupied Setback to 60.0 deg F for the Bethel City Hall space. | \$3,605 | \$3,200 | 15 | 0.9 |
| 4 | Lighting: Corridor, Office 1 | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$220 | \$264 | 5.1 | 1.2 |



| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|---|--|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 5 | Lighting: Exit Signs: Reception, Office 3, Lobby, Assembly Chambers, Hall B, Office 4, Exit, DMV | Replace with 8 LED (2) 4W Module StdElectronic | \$286 | \$400 | 4.4 | 1.4 |
| 6 | Lighting: Hall A, Secure Storage, Assembly Chambers, Kitchen 2, Human Resources, Storage (Safe Room) | Replace with 7 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$910 | \$1,400 | 4.0 | 1.5 |
| 7 | Lighting: Hall A | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$67 | \$132 | 3.1 | 2.0 |
| 8 | Lighting: Toilet 7 | Replace with FLUOR (4) CFL, A Lamp 20W | \$9 | \$20 | 2.9 | 2.1 |
| 9 | Lighting: Lobby | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$120 | \$264 | 2.8 | 2.2 |
| 10 | Lighting: Office 6 | Replace with 2 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$155 | \$400 | 2.4 | 2.6 |
| 11 | Lighting: Office 6, Assembly Chambers, Hall B, Hall C, Human Resources, Secure Files, Visitor's Office, Server Room | Replace with 11 FLUOR (4) T8 4' F32T8 25W Energy-Saver Program StdElectronic | \$655 | \$2,200 | 1.8 | 3.4 |
| 12 | Lighting: CFO, Office 2, Files/Archive, Conference, Hall D, Mail/Copy, DMV | Replace with 12 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$629 | \$2,400 | 1.6 | 3.8 |
| 13 | Lighting: Hall A, Assembly Chambers, Hall C, Server Room | Replace with 24 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$741 | \$3,168 | 1.5 | 4.3 |
| 14 | Lighting: Kitchen | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$62 | \$264 | 1.5 | 4.3 |
| 15 | HVAC And DHW | replace boiler and furnace | \$2,800 | \$30,000 | 1.4 | 11 |

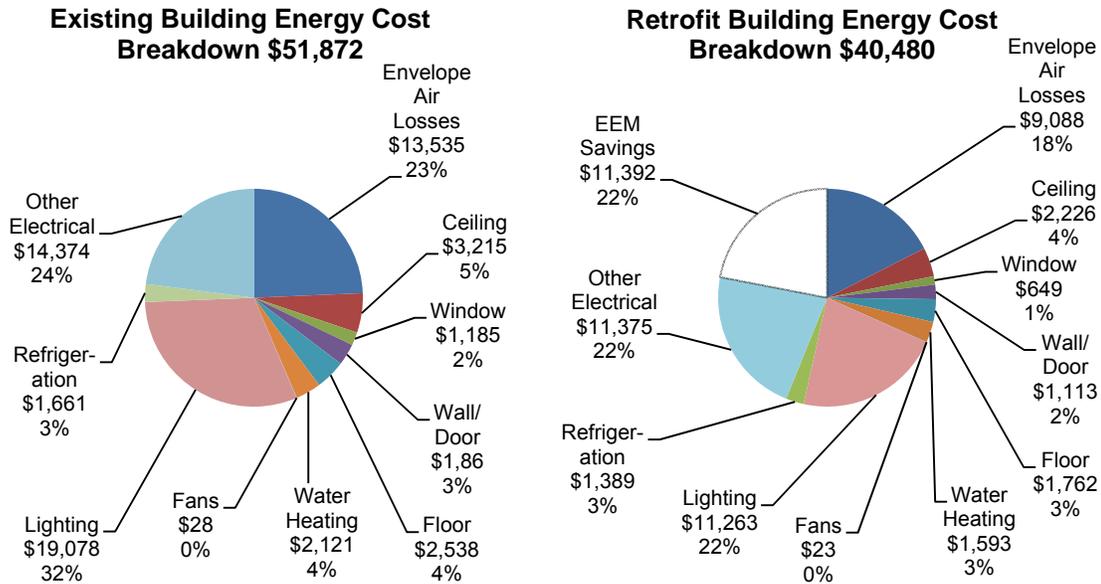




| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|---|---|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 16 | Lighting: Rest Room | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$25 | \$132 | 1.2 | 5.2 |
| 17 | Lighting: Lobby, Files/Archive, Corridor, DMV | Replace with 12 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$304 | \$1,584 | 1.2 | 5.2 |
| 18 | Exterior Door: Metal 1/2 lite foam | Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. | \$53 | \$1,074 | 1.2 | 20 |
| 19 | Other Electrical: Vehicle Plug-In | Replace with 5 Engine Block Heaters and Remove Manual Switching and Add new Clock Timer or Other Scheduling Control | \$538 | \$4,000 | 1.1 | 7.4 |
| TOTAL, cost-effective measures | | | \$11,391 | \$50,937 | 2.4 | 4.5 |



Modeled Building Energy Cost Breakdown



The preceding charts are a graphical representation of the modeled energy usage for the Bethel City Hall. The greatest portions of energy cost for the building are envelope air losses, lighting, and other electrical. This indicates that the greatest savings can be found in reducing the amount of outside air provided to the building mechanically or through air leakage, upgrading lighting, and potentially changing user behavior to use less energy. Detailed improvements for ventilation, lighting and other cost effective measures can be found in Appendix A. The chart breaks down energy usage by cost into the following categories:

- Envelope Air Losses—the cost to provide heated fresh air to occupants, air leakage, heat lost in air through the chimneys and exhaust fans, heat lost to wind and other similar losses.
- Envelope
 - Ceiling—quantified heat loss transferred through the ceiling portion of the envelope.
 - Window—quantified heat loss through the window portion of the envelope.
 - Wall/Door—quantified heat loss through the wall and door portions of the envelope.
 - Floor—quantified heat loss through the floor portion of the envelope.
- Water Heating—energy cost to provide domestic hot water.
- Fans—energy cost to run ventilation, and exhaust fans.
- Lighting—energy cost to light the building.
- Refrigeration—energy costs to provide refrigerated goods for the occupants.
- Other Electrical—includes energy costs not listed above including cooking loads, laundry loads, other plug loads and electronics. These energy uses are amenable to reduction only through user behavior changes which can be accomplished with goal driven employee teamwork.

2.0 INTRODUCTION

NORTECH contracted with the Alaska Housing Finance Corporation to perform ASHRAE Level II Energy Audits for publically owned buildings in Alaska. This report presents the findings of the utility benchmarking, modeling analysis, and the recommended building modifications, and building use changes that are expected to save energy and money.

The report is organized into sections covering:

- description of the facility,
- the building’s historic energy usage (benchmarking),
- estimating energy use through energy use modeling,
- evaluation of potential energy efficiency or efficiency improvements, and
- recommendations for energy efficiency with estimates of the costs and savings.

2.1 Building Use

The Bethel City Hall serves as the administrative building for the city of Bethel.

2.2 Building Occupancy and Schedules

Approximately 13 people occupy this building from 8 am – 5 pm Monday through Friday. Occasionally, the occupancy increases due to public meetings and visitors.

2.3 Building Description

The City Hall, built in 1976, is a one-story wood-framed building that sits on pilings. The walls are made of 2x6 studs and insulated with fiberglass batt insulation. The elevated floor is made of 2x12 joists insulated with fiberglass batt insulation. The hot flat roof is insulated with approximately 6-7” of Styrofoam. Windows are double pane vinyl and doors are insulated metal, insulated metal with windows, and wood with a metal exterior.

Building Envelope

| Building Envelope: Walls | | | |
|--------------------------|-----------------------------|-----------------------|--------------------------------|
| Wall Type | Description | Insulation | Notes |
| Above-grade walls | Wood-framed with 2x6 studs. | R-19 fiberglass batt. | No signs of insulation damage. |

| Building Envelope: Floors | | | |
|---------------------------|-------------|----------------------|-------|
| Floor Type | Description | Insulation | Notes |
| Elevated Floor | 2x12 Joists | R-38 fiberglass batt | None |



| Building Envelope: Roof | | | |
|-------------------------|------------------------------------|-----------------------|--------------------------------|
| Roof Type | Description | Insulation | Notes |
| All Roofs | Hot roof framed with wood trusses. | 7-inches of Styrofoam | No signs of insulation damage. |

| Building Envelope: Doors and Windows | | | |
|--------------------------------------|--|-------------------|------------|
| Door and Window Type | Description | Estimated R-Value | Notes |
| Exterior door | Flush metal with foam insulation | 5 | 2 doors |
| Exterior door | Wood door with metal exterior | 3.7 | 1 door |
| Exterior door | Half lite metal door with foam insulation | 3.0 | 2 doors |
| Window | Double pane vinyl, <3/8" air gap | 1.9 | 20 windows |
| Window | Single pane wood | 1.1 | 3 windows |
| Window | Double pane vinyl, <3/8" gap, south facing | 1.9 | 10 windows |
| Window | Double pane aluminum, thermal break, >3/8" air gap | 1.2 | 1 window |

Heating and Ventilation Systems

A single oil fired boiler provides heat to baseboards in the majority of the building. The council chambers and the lobby outside the chambers are heated with an oil fired forced air furnace.

An HRV unit is installed in the building for use in the offices, but has not operated very often since its installation. An HRV serves an important part in maintaining the air quality in a building. This HRV is the only form of ventilation form the City Hall and should be repaired, maintained, and returned to service.

Air Conditioning System

Several window mounted air conditioning units are installed throughout the building, but the majority does not see much use. The air conditioner in the DMV office was running at the time of the visit.

Energy Management

There are no energy management systems in the Bethel City Hall.





Lighting Systems

The primary lighting type in this building consists of ceiling mounted fixtures containing T12 (1 1/2" diameter, 4' long) tubes. The reception area has been retrofitted with energy saving ceiling mounted LED fixtures. The exterior lighting utilizes a timer and photocell and consists of LEDs and 70 watt high pressure sodium lamps.

Domestic Hot Water

The domestic hot water is heated by a heat exchanger coil in the boiler.



3.0 BENCHMARKING 2010 UTILITY DATA

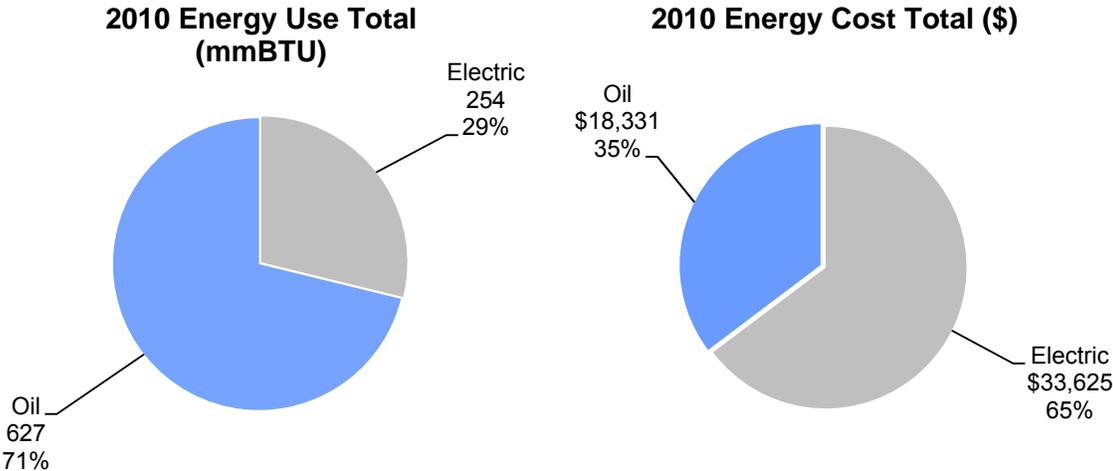
Benchmarking building energy use consists of obtaining and then analyzing two years of energy bills. The original utility bills are necessary to determine the raw usage and charges as well as to evaluate the utility's rate structure. The metered usage of electrical and natural gas consumption is measured monthly, but heating oil, propane, wood, and other energy sources are normally billed upon delivery and provide similar information. During benchmarking, information is compiled in a way that standardizes the units of energy and creates energy use and billing rate information statistics for the building on a square foot basis. The objectives of benchmarking are:

- to understand patterns of use,
- to understand building operational characteristics,
- for comparison with other similar facilities in Alaska and across the country, and
- to offer insight in to potential energy savings.

The results of the benchmarking, including the energy use statistics and comparisons to other areas, are discussed in the following sections.

3.1 Total Energy Use and Cost of 2010

The energy use profiles below show the energy and cost breakdowns for the City Hall. The total annual energy use was 881 mmBTU and the cost for energy was \$51,956. These charts show the portion of use for a fuel type and the portion of its cost.



The above charts indicate that the highest portion of energy use is for oil and the highest portion of cost is for electricity. Fuel oil consumption correlates directly to space heating and domestic hot water while electrical use can correlate to lighting systems, plug loads, and HVAC equipment. The energy type with the highest cost often provides the most opportunity for savings.

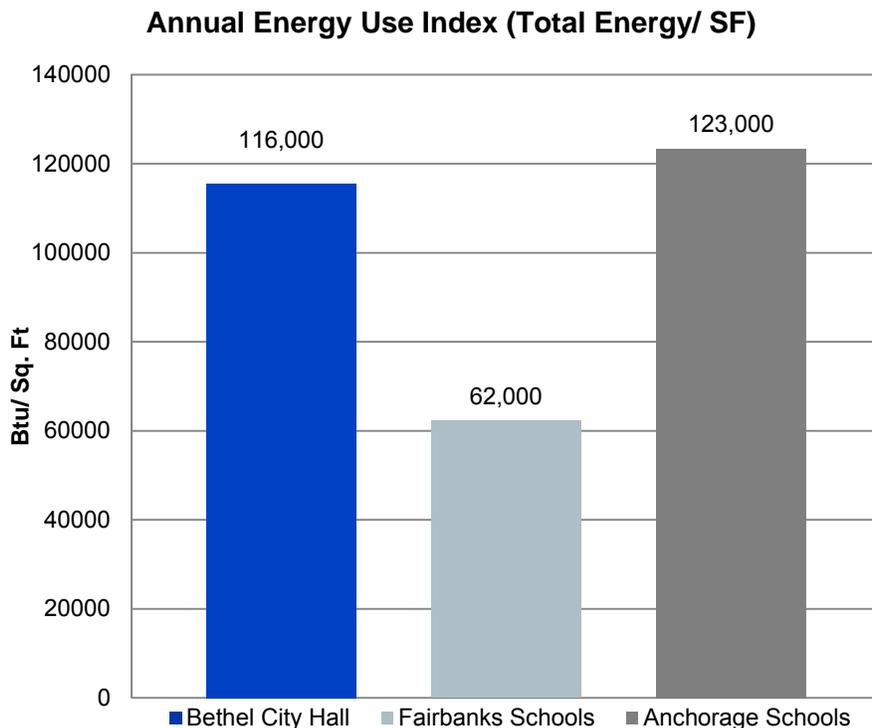
3.2 Energy Utilization Index of 2010

The primary benchmarking statistic is the Energy Utilization Index (EUI). The EUI is calculated from the utility bills and provides a simple snapshot of the quantity of energy actually used by the building on a square foot and annual basis. The calculation converts the total energy use for the year from all sources in the building, such as heating fuel and electrical usage, into British Thermal Units (BTUs). This total annual usage is then divided by the number of square feet of the building. The EUI units are BTUs per square foot per year.

The benchmark analysis found that the Bethel City Hall has an EUI of 116,000 BTUs per square foot per year.

The EUI is useful in comparing this building’s energy use to that of other similar buildings in Alaska and in the Continental United States. The EUI can be compared to average energy use in 2003 found in a study by the U.S. Energy Information Administration of commercial buildings (abbreviated CBECS, 2006). That report found an overall average energy use of about 90,000 BTUs per square foot per year while studying about 6,000 commercial buildings of all sizes, types, and uses that were located all over the Continental U.S. (see Table C3 in Appendix I).

In a recent and unpublished state-wide benchmarking study sponsored by the Alaska Housing Finance Corporation, schools in Fairbanks averaged 62,000 BTUs per square foot and schools in Anchorage averaged 123,000 BTUs per square foot annual energy use. The chart below shows the Bethel City Hall relative to these values. These findings are discussed further in Appendix H.



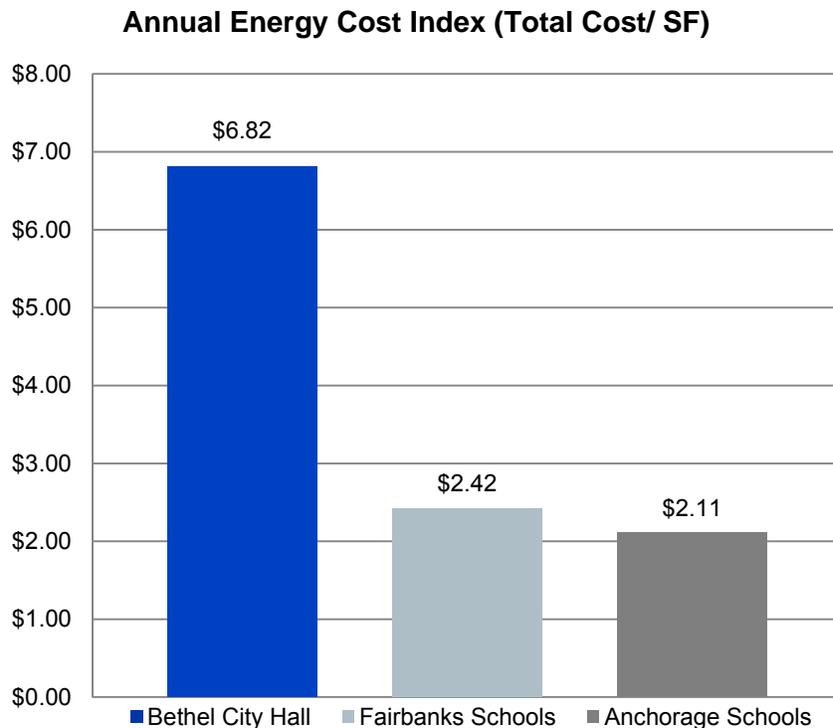
3.3 Cost Utilization Index of 2010

Another benchmarking statistic that is useful is the Cost Utilization Index (CUI), which is the cost for energy used in the building on a square foot basis per year. The CUI is calculated from the cost for utilities for a year period. The CUI permits comparison of buildings on total energy cost even though they may be located in areas with differing energy costs and differing heating and/or cooling climates. The cost of energy, including heating oil, natural gas, and electricity, can vary greatly over time and geographic location and can be higher in Alaska than other parts of the country.

The CUI for Bethel City Hall is about \$6.82. This is based on utility costs from 2010 and the following rates:

| | | | |
|--------------|----|-----------------|-------------------|
| Electricity | at | \$0.45 / kWh | (\$13.18 / Therm) |
| # 2 Fuel Oil | at | \$4.19 / gallon | (\$2.99 / Therm) |

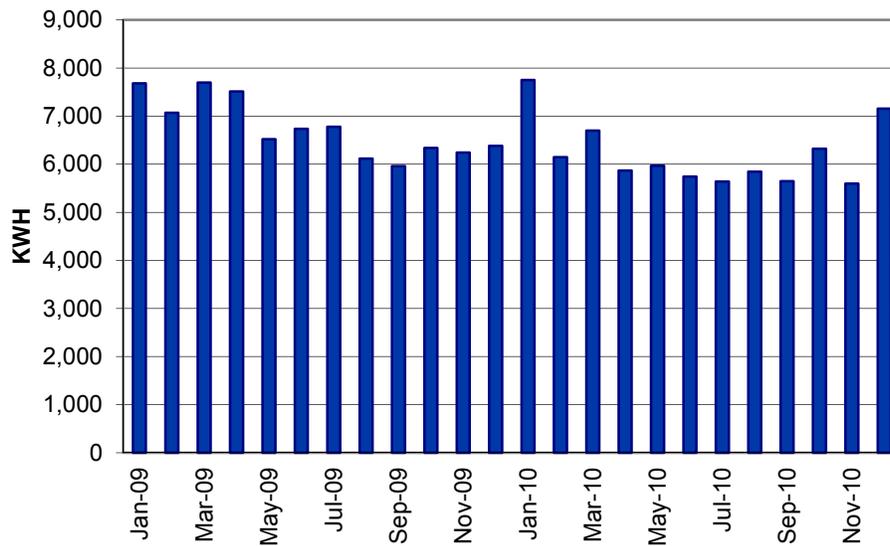
The Department of Energy Administration study, mentioned in the previous section (CBECS, 2006) found an average cost of \$2.52 per square foot in 2003 for 4,400 buildings in the Continental U.S (Tables C4 and C13 of CBDES, 2006). Schools in Fairbanks have an average cost for energy of \$2.42 per square foot while Anchorage schools average \$2.11 per square foot. The chart below shows the Bethel City Hall relative to these values. More details are included in Appendix H.



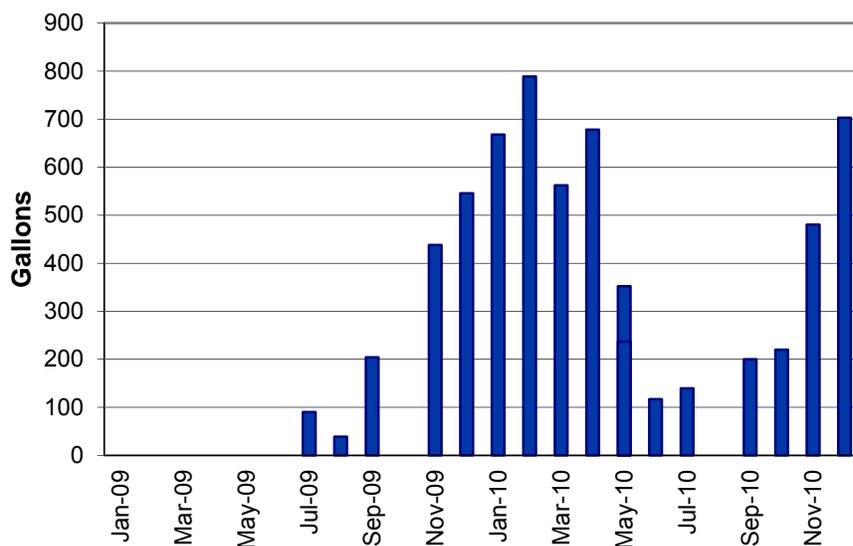
3.4 Seasonal Energy Use Patterns

Energy consumption is often highly correlated with seasonal climate and usage variations. The graphs below show the electric and fuel consumption of this building over the course of two years. The lowest monthly use is called the baseline use. The electric baseline often reflects year round lighting consumption while the heating fuel baseline often reflects year round hot water usage. The clear relation of increased energy usage during periods of cold weather can be seen in the months with higher usage.

Electrical Consumption



Fuel Oil Deliveries



Fuel data not available before July 2009

3.5 Future Energy Monitoring

Energy accounting is the process of tracking energy consumption and costs. It is important for the building owner or manager to monitor and record both the energy usage and cost each month. Comparing trends over time can assist in pinpointing major sources of energy usage and aid in finding effective energy efficiency measures. There are two basic methods of energy accounting: manual and automatic. Manual tracking of energy usage may already be performed by an administrative assistant; however if the records are not scrutinized for energy use, then the data is merely a financial accounting. Digital energy tracking systems can be installed. They display and record real-time energy usage and accumulated energy use and cost. There are several types which have all of the information accessible via Ethernet browser.

4.0 MODELING ENERGY CONSUMPTION

After benchmarking of a building is complete and the site visit has identified the specific systems in the building, a number of different methods are available for quantifying the overall energy consumption and to model the energy use. These range from relatively simple spreadsheets to commercially available modeling software capable of handling complex building systems.

NORTECH has used several of these programs and uses the worksheets and software that best matches the complexity of the building and specific energy use that is being evaluated.

Modeling of an energy efficiency measure (EEM) requires an estimate of the current energy used by the specific feature, the estimated energy use of the proposed EEM and its installed cost. EEMs can range from a single simple upgrade, such as light bulb type or type of motor, to reprogramming of the controls on more complex systems. While the need for a major retrofit can typically be identified by an energy audit, the specific system upgrades often require collecting additional data and engineering and design efforts that are beyond the scope of the Level II energy audit.

Based on the field inspection results and discussions with the building owners/operators, auditors developed potential EEMs for the facility. Common EEMs that could apply to almost every older building include:

- Reduce the envelope heat losses through:
 - increased building insulation, and
 - better windows and doors
- Reduce temperature difference between inside and outside using setback thermostats
- Upgrade inefficient:
 - lights,
 - motors,
 - refrigeration units, and
 - other appliances
- Reduce running time of lights/appliances through:
 - motion sensors,
 - on/off timers,
 - light sensors, and
 - other automatic/programmable systems

The objective of the following sections is to describe how the overall energy use of the building was modeled and the potential for energy savings. The specific EEMs that provide these overall energy savings are detailed in Appendix A of this report. While the energy savings of an EEM is unlikely to change significantly over time, the cost savings of an EEM is highly dependent on the current energy price and can vary significantly over time. An EEM that is not currently recommended based on price may be more attractive at a later date or with higher energy prices.

4.1 Understanding How AkWarm Models Energy Consumption

NORTECH used the AkWarm model for evaluating the overall energy consumption at Bethel City Hall. The AkWarm program was developed by the Alaska Housing Finance Corporation (AHFC) to model residential energy use. The original AkWarm is the modeling engine behind the successful residential energy upgrade program that AHFC has operated for a number of years. In the past few years, AHFC has developed a version of this model for commercial buildings.

Energy use in buildings is modeled by calculating energy losses and consumption, such as:

- Heat lost through the building envelope components, including windows, doors, walls, ceilings, crawlspaces, and foundations. These heat losses are computed for each component based on the area, heat resistance (R-value), and the difference between the inside temperature and the outside temperature. AkWarm has a library of temperature profiles for villages and cities in Alaska.
- Window orientation, such as the fact that south facing windows can add heat in the winter but north-facing windows do not.
- Inefficiencies of the heating system, including the imperfect conversion of fuel oil or natural gas due to heat loss in exhaust gases, incomplete combustion, excess air, etc. Some electricity is also consumed in moving the heat around a building through pumping.
- Inefficiencies of the cooling system, if one exists, due to various imperfections in a mechanical system and the required energy to move the heat around.
- Lighting requirements and inefficiencies in the conversion of electricity to light; ultimately all of the power used for lighting is converted to heat. While the heat may be useful in the winter, it often isn't useful in the summer when cooling may be required to remove the excess heat. Lights are modeled by wattage and operational hours.
- Use and inefficiencies in refrigeration, compressor cooling, and heat pumps. Some units are more efficient than others. Electricity is required to move the heat from inside a compartment to outside it. Again, this is a function of the R-Value and the temperature difference between the inside and outside of the unit.
- Plug loads such as computers, printers, mini-fridges, microwaves, portable heaters, monitors, etc. These can be a significant part of the overall electricity consumption of the building, as well as contributing to heat production.
- The schedule of operation for lights, plug loads, motors, etc. is a critical component of how much energy is used.

AkWarm adds up these heat losses and the internal heat gains based on individual unit usage schedules. These estimated heat and electrical usages are compared to actual use on both a yearly and seasonal basis. If the AkWarm model is within 5 % to 10% of the most recent 12 months usage identified during benchmarking, the model is considered accurate enough to make predictions of energy savings for possible EEMs.

4.2 AkWarm Calculated Savings for the Bethel City Hall

Based on the field inspection results and discussions with the building owners/operators, auditors developed potential EEMs for the facility. These EEMs are then entered into AkWarm to determine if the EEM saves energy and is cost effective (i.e. will pay for itself). AkWarm calculates the energy and money saved by each EEM and calculates the length of time for the savings in reduced energy consumption to pay for the installation of the EEM. AkWarm makes recommendations based on the Savings/Investment Ratio (SIR), which is defined as ratio of the savings generated over the life of the EEM divided by the installed cost. Higher SIR values are better and any SIR above one is considered acceptable. If the SIR of an EEM is below one, the energy savings will not pay for the cost of the EEM and the EEM is not recommended. Preferred EEMs are listed by AkWarm in order of the highest SIR.

A summary of the savings from the recommended EEMs are listed in this table.

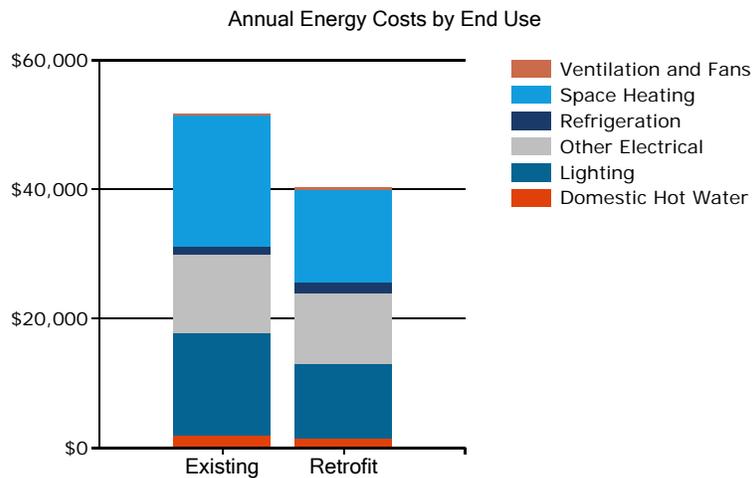
| Description | Space Heating | Water Heating | Lighting | Refrigeration | Other Electrical | Ventilation Fans | Total |
|-----------------------------|---------------|---------------|----------|---------------|------------------|------------------|-----------------|
| Existing Building | \$20,633 | \$1,955 | \$15,959 | \$1,389 | \$11,913 | \$23 | \$51,872 |
| With All Proposed Retrofits | \$14,837 | \$1,593 | \$11,263 | \$1,389 | \$11,375 | \$23 | \$40,470 |
| Savings | \$5,796 | \$362 | \$4,696 | \$0 | \$538 | \$0 | \$11,402 |

Savings in these categories do not reflect interaction with other categories. So, for example, the savings in lighting does not affect the added space heating cost to make up for the heat saved in replacing less-efficient lights with more-efficient lights that waste less heat.

4.3 AkWarm Projected Energy Costs after Modifications

The AkWarm recommended EEMs appear to result in significant savings in lighting and space heating. The energy cost by end use breakdown was provided by AkWarm based on the field inspection and does not indicate that all individual fixtures and appliances were directly measured. The current energy costs are shown below on the left hand bar of the graph and the projected energy costs, assuming use of the recommended EEMs, are shown on the right.

This graphical format allows easy visual comparison of the various energy requirements of the facility. In the event that not all recommended retrofits are desired, the proposal energy savings can be estimated from visual interpretation from this graph.



4.4 Additional Modeling Methods

The AkWarm program effectively models wood-framed and other buildings with standard heating systems and relatively simple HVAC systems. AkWarm models of more complicated mechanical systems are sometimes poor due to a number of simplifying assumptions and limited input of some variables. Furthermore, AKWarm is unable to model complex HVAC systems such as variable frequency motors, variable air volume (VAV) systems, those with significant digital or pneumatic controls or significant heat recovery capacity. In addition, some other building methods and occupancies are outside AkWarm capabilities.

This report section is included in order to identify benefits from modifications to those more complex systems or changes in occupant behavior that cannot be addressed in AkWarm.

The Bethel City Hall could be modeled well in AkWarm. Retrofits for the HVAC system were adequately modeled in AkWarm and did not require additional calculations.

5.0 BUILDING OPERATION AND MAINTENANCE (O & M)

5.1 Operations and Maintenance

A well-implemented operation and maintenance (O & M) plan is often the driving force behind energy savings. Such a plan includes preserving institutional knowledge, directing preventative maintenance, and scheduling regular inspections of each piece of HVAC equipment within the building. Routine maintenance includes the timely replacement of filters, belts and pulleys, the proper greasing of bearings and other details such as topping off the glycol tanks. Additional benefits to a maintenance plan are decreased down time for malfunctioning equipment, early indications of problems, prevention of exacerbated maintenance issues, and early detection of overloading/overheating issues. A good maintenance person knows the building's equipment well enough to spot and repair minor malfunctions before they become major retrofits.

Operations and Maintenance staff implementing a properly designed O & M plan will:

- Track and document
 - Renovations and repairs,
 - Utility bills and fuel consumption, and
 - System performance.
- Keep available for reference
 - A current Building Operating Plan including an inventory of installed systems,
 - The most recent available as-built drawings,
 - Reference manuals for all installed parts and systems, and
 - An up-to-date inventory of on-hand replacement parts.
- Provide training and continuing education for maintenance personnel.
- Plan for commissioning and re-commissioning at appropriate intervals.

5.2 Commissioning

Commissioning of a building is the verification that the HVAC systems perform within the design or usage ranges of the Building Operating Plan. This process ideally, though seldom, occurs as the last phase in construction. HVAC system operation parameters degrade from ideal over time due to incorrect maintenance, improper replacement pumps, changes in facility tenants or usage, changes in schedules, and changes in energy costs or loads. Ideally, re-commissioning of a building should occur every five to ten years. This ensures that the HVAC system meets the potentially variable use with the most efficient means.

5.3 Building Specific Recommendations

The maintenance staff for the Bethel City Hall does a good job with maintaining the equipment. A few heating zone valves and thermostats should be repaired in order to prevent them from simultaneously heating while the wall mounted air conditioning units are cooling as they seem to do in the DMV office.

An HRV is an important and energy efficient tool in maintaining good air quality in a building. The HRV in the City Hall should be repaired, maintained, and returned to operation to help the air quality and comfort in the building.



APPENDICES





Appendix A Recommended Energy Efficiency Measures

A number of Energy Efficiency Measures (EEMs) are available to reduce the energy use and overall operating cost for the facility. The EEMs listed below are those recommended by AkWarm based on the calculated savings/investment ration (SIR) as described in Appendix E. AkWarm also provides a breakeven cost, which is the maximum initial cost of the EEM that will still return a SIR of one or greater.

This section describes each recommended EEM and identifies the potential energy savings and installation costs. This also details the calculation of breakeven costs, simple payback, and the SIR for each recommendation. The recommended EEMs are grouped together generally by the overall end use that will be impacted.

A.1 Temperature Control

Approximately 16 programmable thermostats should be installed and programmed in the Bethel City Hall. Programmable thermostats allow for automatic temperature setback, which reduce usage more reliably than manual setbacks. Reduction of the nighttime temperature set point in the City Hall will decrease the energy usage.

| Rank | Building Space | | Recommendation | | |
|-------------------|------------------|----------------------------------|--|-----------------------|---------|
| 3 | Bethel City Hall | | Implement a Heating Temperature Unoccupied Setback to 60.0 deg F for the Bethel City Hall space. | | |
| Installation Cost | \$3,200 | Estimated Life of Measure (yrs.) | 15 | Energy Savings (/yr.) | \$3,605 |
| Breakeven Cost | \$48,879 | Savings-to-Investment Ratio | 15 | Simple Payback yrs. | 1 |



A.2 Electrical Loads

A.2.1 Lighting

The electricity used by lighting eventually ends up as heat in the building. In areas where electricity is more expensive than other forms of energy, or in areas where the summer temperatures require cooling; this additional heat can be both wasteful and costly. Converting to more efficient lighting reduces cooling loads in the summer and allows the user to control heat input in the winter. The conversion from T12 (one and a half inch fluorescent bulbs) to T8 (one inch), T5 (5/8 inch), Compact Fluorescent Lights (CFL), or LED bulbs provides a significant increase in efficiency. LED bulbs can be directly placed in existing fixtures. The LED bulb bypasses the ballast altogether, which removes the often irritating, “buzzing” noise that magnetic ballasts tend to make.

Replacing the incandescent lamps in the city hall is inexpensive with a low cost of replacement present a large savings. Also, replacing the current 32 watt T8 lamps with energy saving 25 watt lamps is an inexpensive retrofit with a high savings.

| Rank | Location | Existing Condition | | Recommendation | |
|------|-------------------|---|----------------------------------|--|-----------------------------|
| 1 | Server Room | INCAN (5) A Lamp, Halogen 60W with Manual Switching | | Replace with FLUOR (5) CFL, A Lamp 20W | |
| | Installation Cost | \$25 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) \$176 |
| | Breakeven Cost | \$1,090 | Savings-to-Investment Ratio | 44 | Simple Payback yrs. 0 |

| Rank | Location | Existing Condition | | Recommendation | |
|------|-------------------|---|----------------------------------|--|----------------------------|
| 2 | Hall B | INCAN (2) A Lamp, Std 40W with Manual Switching | | Replace with FLUOR (2) CFL, A Lamp 20W | |
| | Installation Cost | \$10 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) \$35 |
| | Breakeven Cost | \$218 | Savings-to-Investment Ratio | 22 | Simple Payback yrs. 0 |

| Rank | Location | Existing Condition | | Recommendation | |
|------|--------------------|---|----------------------------------|---|-----------------------------|
| 4 | Corridor, Office 1 | 2 FLUOR (2) T12 4' F40T12 34W Energy-Saver Magnetic with Manual Switching | | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| | Installation Cost | \$264 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) \$220 |
| | Breakeven Cost | \$1,337 | Savings-to-Investment Ratio | 5.1 | Simple Payback yrs. 1 |

| Rank | Location | Existing Condition | | Recommendation | |
|------|--|--|----------------------------------|--|-----------------------------|
| 5 | Exit Signs: Reception, Office 3, Lobby, Assembly Chambers, Hall B, Office 4, Exit, DMV | 8 FLUOR [Unknown Lamp] with Manual Switching | | Replace with 8 LED (2) 4W Module StdElectronic | |
| | Installation Cost | \$400 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) \$286 |
| | Breakeven Cost | \$1,773 | Savings-to-Investment Ratio | 4.4 | Simple Payback yrs. 1 |



| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|--|-----|---|-------|
| 6 | Hall A, Secure Storage, Assembly Chambers, Kitchen 2, Human Resources, Storage (Safe Room) | 7 FLUOR (4) T12 4' F40T12 34W Energy-Saver (2) StdElectronic with Manual Switching | | Replace with 7 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$1,400 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$910 |
| Breakeven Cost | \$5,632 | Savings-to-Investment Ratio | 4.0 | Simple Payback yrs. | 2 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------|--|-----|---|------|
| 7 | Hall A | FLUOR (4) T12 4' F40T12 34W Energy-Saver (2) StdElectronic with Manual Switching | | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$132 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$67 |
| Breakeven Cost | \$414 | Savings-to-Investment Ratio | 3.1 | Simple Payback yrs. | 2 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------|---|-----|--|-----|
| 8 | Toilet 7 | INCAN (4) A Lamp, Halogen 60W with Manual Switching | | Replace with FLUOR (4) CFL, A Lamp 20W | |
| Installation Cost | \$20 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$9 |
| Breakeven Cost | \$58 | Savings-to-Investment Ratio | 2.9 | Simple Payback yrs. | 2 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------|--|-----|---|-------|
| 9 | Lobby | 2 FLUOR (2) T12 4' F40T12 34W Energy-Saver StdElectronic with Manual Switching | | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$264 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$120 |
| Breakeven Cost | \$745 | Savings-to-Investment Ratio | 2.8 | Simple Payback yrs. | 2 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------|---|-----|---|-------|
| 10 | Office 6 | 2 FLUOR (4) T12 4' F40T12 40W Standard (2) Magnetic with Manual Switching | | Replace with 2 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$400 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$155 |
| Breakeven Cost | \$946 | Savings-to-Investment Ratio | 2.4 | Simple Payback yrs. | 3 |





| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|--|-----|--|-------|
| 11 | Office 6, Assembly Chambers, Hall B, Hall C, Human Resources, Secure Files, Visitor's Office, Server Room | 11 FLUOR (4) T12 4' F40T12 34W Energy-Saver (2) Magnetic with Manual Switching | | Replace with 11 FLUOR (4) T8 4' F32T8 25W Energy-Saver Program StdElectronic | |
| Installation Cost | \$2,200 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$655 |
| Breakeven Cost | \$4,055 | Savings-to-Investment Ratio | 1.8 | Simple Payback yrs. | 3 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|--|-----|--|-------|
| 12 | CFO, Office 2, Files/Archive, Conference, Hall D, Mail/Copy, DMV | 12 FLUOR (4) T12 4' F40T12 34W Energy-Saver (2) Magnetic with Manual Switching | | Replace with 12 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$2,400 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$629 |
| Breakeven Cost | \$3,838 | Savings-to-Investment Ratio | 1.6 | Simple Payback yrs. | 4 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|--|-----|--|-------|
| 13 | Hall A, Assembly Chambers, Hall C, Server Room | 24 FLUOR (2) T12 4' F40T12 34W Energy-Saver Magnetic with Manual Switching | | Replace with 24 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$3,168 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$741 |
| Breakeven Cost | \$4,588 | Savings-to-Investment Ratio | 1.4 | Simple Payback yrs. | 4 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------|---|-----|---|------|
| 14 | Kitchen | 2 FLUOR (2) T12 4' F40T12 34W Energy-Saver Magnetic with Manual Switching | | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$264 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$62 |
| Breakeven Cost | \$382 | Savings-to-Investment Ratio | 1.4 | Simple Payback yrs. | 4 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|-----------|---|-----|---|------|
| 16 | Rest Room | FLUOR (2) T12 4' F40T12 34W Energy-Saver Magnetic with Manual Switching | | Replace with FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$132 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$25 |
| Breakeven Cost | \$155 | Savings-to-Investment Ratio | 1.2 | Simple Payback yrs. | 5 |





| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|---|--|-----|-----------------------|--|--|
| 17 | Lobby, Files/Archive, Corridor, DMV | 12 FLUOR (2) T12 4' F40T12 34W Energy-Saver Magnetic with Manual Switching | | | Replace with 12 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | |
| Installation Cost | \$1,584 | Estimated Life of Measure (yrs.) | 7 | Energy Savings (/yr.) | \$304 | |
| Breakeven Cost | \$1,857 | Savings-to-Investment Ratio | 1.2 | Simple Payback yrs. | 5 | |

A.2.2 Other Electrical Loads

Having the head bolt heaters on for the entire day is not always necessary. Installing a timer to alternate the head bolt heaters will help decrease energy usage. When the temperature is above 20°F all of the outlets will be off, when the temperature is between -20°F and 20°F half of the outlets will be off and rotate to on for one-half hour cycles through the day, and at below -20°F all the outlets will be on.

| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|-----------------|--|-----|-----------------------|---|--|
| 21 | Vehicle Plug-In | 5 Engine Block Heaters with Manual Switching | | | Remove Manual Switching and Add new Clock Timer or Other Scheduling Control | |
| Installation Cost | \$4,000 | Estimated Life of Measure (yrs.) | 10 | Energy Savings (/yr.) | \$538 | |
| Breakeven Cost | \$4,532 | Savings-to-Investment Ratio | 1.1 | Simple Payback yrs. | 7 | |

A.3 Building Envelope: Recommendations for change

A.3.1 Exterior Walls

No EEMs are recommended in this category. The cost to increase the insulation on the walls outweighs the energy savings.

A.3.2 Foundation and/or Crawlspace

No EEMs are recommended in this category. The cost to increase the insulation on the floor outweighs the energy savings.

A.3.3 Roofing and Ceiling

Increasing the insulation value by adding rigid board insulation to the ceiling is a not cost effective at this time.

A.3.4 Windows

Replacing windows with more energy efficient windows is not cost effective at this time.



A.3.5 Doors

Increasing the insulation value of some of the doors by replacing the half-lite doors with common exterior doors is a cost effective way to save energy.

| Rank | Location | Size/Type, Condition | | Recommendation | |
|------|---------------------------------------|--|----------------------------------|--|----------------------------|
| 18 | Exterior Door: Metal 1/2 lite foam | Door Type: Entrance, Metal, EPS core, metal edge, half-lite Modeled R-Value: 3 | | Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. | |
| | Installation Cost | \$1,074 | Estimated Life of Measure (yrs.) | 30 | Energy Savings (/yr.) \$53 |
| | Breakeven Cost | \$1,244 | Savings-to-Investment Ratio | 1.2 | Simple Payback yrs. 20 |

A.4 Building Heating System / Air Conditioning

A.4.1 Heating and Heat Distribution

Installing a new triple pass boiler and high efficiency furnace will decrease the energy usage in the City Hall. The estimated annual savings achieved by replacing each unit with more efficient units makes the retrofit economical.

| Rank | Recommendation | | | | |
|------|----------------------------|----------|----------------------------------|-----|-------------------------------|
| 15 | replace boiler and furnace | | | | |
| | Installation Cost | \$30,000 | Estimated Life of Measure (yrs.) | 20 | Energy Savings (/yr.) \$2,800 |
| | Breakeven Cost | \$41,598 | Savings-to-Investment Ratio | 1.4 | Simple Payback yrs. 11 |

A.4.2 Air Conditioning

The City Hall is not equipped with and air conditioning system.

A.4.3 Ventilation

No EEMs are recommended in this category.

A.4.4 Air Changes and Air Tightening

No EEMs are recommended in this area because of the difficulty of quantifying the amount of leaking air and the savings. However, by using a blower door to depressurize the building and an infra-red camera, the location of significant air leaks can be determined so they can be repaired. Several locations on the envelope in the City Shop have damage that allows heat to escape that should be repaired.

Appendix B Energy Efficiency Measures that are NOT Recommended

As indicated in other sections of the report, a number of potential EEMs were identified that were determined to be NOT cost effective by the AkWarm model. These EEMs are not currently recommended on the basis of energy savings alone because each may only save a small amount of energy, have a high capital cost, or be expensive to install. While each of these EEMs is not cost effective at this time, future changes in building use such as longer operating hours, higher energy prices, new fixtures or hardware on the market, and decreases in installation effort may make any of these EEMs cost effective in the future. These potential EEMs should be reviewed periodically to identify any changes to these factors that would warrant re-evaluation.

Although these upgrades are not currently cost effective on an energy cost basis, the fixtures, hardware, controls, or operational changes described in these EEMs should be considered when replacing an existing fixture or unit for other reasons. For example, replacing an existing window with a triple-pane window may not be cost effective based only on energy use, but if a window is going to be replaced for some other reason, then the basis for a decision is only the incremental cost of upgrading from a less efficient replacement window to a more efficient replacement window. That incremental cost difference will have a significantly shorter payback, especially since the installation costs are likely to be the same for both units.

| The following measures were not found to be cost-effective: | | | | | | |
|---|---|---|-----------------------|----------------|----------------------------------|------------------------|
| Rank | Feature/Location | Improvement Description | Annual Energy Savings | Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 20 | Window/Skylight: Single Wood Other | Replace existing window with triple pane, 2 low-E, argon window. | \$94 | \$1,651 | 0.99 | 18 |
| 21 | Window/Skylight: Dbl Alum No Thrm Brk Other | Replace existing window with triple pane, 2 low-E, argon window. | \$24 | \$491 | 0.86 | 20 |
| 22 | Exterior Door: Flush Wood W/ Metal Exterior | Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. | \$17 | \$506 | 0.77 | 31 |
| 23 | Lighting: CFO, Kitchen, Conference, Hall D, Mail/Copy | Replace with 9 FLUOR (4) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$214 | \$1,800 | 0.73 | 8.4 |
| 24 | Lighting: DMV | Replace with FLUOR (3) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$18 | \$166 | 0.65 | 9.4 |
| 25 | Lighting: Lobby, Assembly Chambers, Hall C, Server Room | Replace with 8 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$107 | \$1,056 | 0.63 | 9.8 |
| 26 | Above-Grade Wall: House | Install R-30 rigid foam board to exterior and cover with T1-11 siding or equivalent. | \$766 | \$31,279 | 0.58 | 41 |
| 27 | Window/Skylight: Dbl Wood/Vyn <3/8 Gas South | Remove existing glass and install triple, 1 low-E, argon glass. | \$100 | \$3,253 | 0.53 | 33 |
| 28 | Lighting: Files/Archives, Corridor, Office 1 | Replace with 4 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$44 | \$528 | 0.51 | 12 |



| | | | | | | |
|----|--|---|-------|----------|------|----|
| 29 | Cathedral Ceiling: House | Install R-10 rigid board insulation. No cost included for covering insulation. | \$690 | \$36,431 | 0.45 | 53 |
| 30 | Window/Skylight: Dbl Wood/Vyn <3/8 Gas Other | Replace existing window with triple pane, 2 low-E, argon window. | \$267 | \$12,170 | 0.38 | 46 |
| 31 | Exterior Door: Flush 2" Metal Foam | Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. | \$13 | \$1,064 | 0.29 | 82 |
| 32 | Lighting: Mechanical Room | Replace with 2 FLUOR (2) T8 4' F32T8 25W Energy-Saver Instant StdElectronic | \$3 | \$264 | 0.08 | 77 |





Appendix C Significant Equipment List

HVAC Equipment

| Equipment | Manufacturer | Model No. | Fuel Type | Notes |
|--------------------|--------------|-----------------|-------------|-----------------|
| Boiler | Weil McLain | WTGO-9 Series 3 | #2 Fuel Oil | Only one boiler |
| Pump | Grundfos | UP 40-240 | Electric | 1 1/4 HP |
| Forced Air Furnace | n/a | 0WH0VF | #2 Fuel Oil | 1 gph |
| Furnace Fan | n/a | n/a | Electric | 1/2 HP |

Lighting

| Location | Lighting Type | Bulb Type | Quantity | KWH/YR | Cost/YR |
|---|---------------|--------------|----------|--------|----------|
| Hall A, Secure Storage, Assembly Chambers, Kitchen 2, Human Resources, Storage (Safe Room) | Fluorescent | T12 | 28 | 7,454 | \$ 3,354 |
| CFO, Office 2, Files/Archive, Conference, Hall D, Mail/Copy, DMV | Fluorescent | T12 | 48 | 3,783 | 1,702 |
| Hall A, Assembly Chambers, Hall C, Server Room | Fluorescent | T12 | 48 | 3,783 | 1,702 |
| Reception, Office 3, Office 7, Office 4, City Manager, Office 5 | LED | 48 W | 32 | 3,550 | 1,598 |
| Office 6, Assembly Chambers, Hall B, Hall C, Human Resources, Secure Files, Visitor's Office, Server Room | Fluorescent | T12 | 44 | 3,468 | 1561 |
| CFO, Kitchen, Conference, Hall D, Mail/Copy | Fluorescent | T12 | 36 | 2,139 | 963 |
| Lobby, Files/Archive, Corridor, DMV | Fluorescent | T12 | 24 | 1,892 | 851 |
| Corridor, Office 1 | Fluorescent | T12 | 4 | 1,413 | 636 |
| Exit Signs: Reception, Office 3, Lobby, Assembly Chambers, Hall B, Office 4, Exit, DMV | Exit Signs | Incandescent | 8 | 1,403 | 631 |
| Lobby | Fluorescent | T12 | 4 | 1,065 | 479 |
| Lobby, Assembly Chambers, Hall C, Server Room | Fluorescent | T12 | 16 | 951 | 428 |
| Exterior | HPS | 70 W | 2 | 701 | 315 |
| Server room | Incandescent | 60 W | 5 | 587 | 264 |

Energy Consumption calculated by AkWarm based on wattage, schedule, and an electricity rate of \$0.45/kWh





Plug Loads

| Equipment | Location | Manufacturer | KWH/YR | Cost/YR |
|---------------------------------|-------------|--------------|--------|---------|
| Window mounted air conditioners | Offices | Varies | 6452 | \$ 2903 |
| Head bolt Heaters | Exterior | n/a | 3417 | 1538 |
| Fans | Offices | Varies | 3264 | 1469 |
| IT equipment | Offices | Varies | 2849 | 1282 |
| Computer towers | Offices | n/a | 2661 | 1197 |
| Refrigerator | Break rooms | n/a | 2087 | 939 |
| Desktop Printers | Offices | n/a | 1628 | 733 |
| computer monitors | Offices | n/a | 1331 | 599 |
| mini refrigerators | Offices | n/a | 1000 | 450 |

Energy Consumption calculated by AkWarm based on wattage, schedule, and an electricity rate of \$0.45/kWh



Appendix D Local Utility Rate Structure

The information in this section was provided directly from the local utility or gathered from the local utility’s publicly available information at the time of the audit. All language used in this section was provided by the local utility and believed to be current at the time of the audit. Energy use terms, specific fees, and other specific information are subject to change. Updated rate structure information should be gathered from the utility during future discussion of rates, rate structures and utility pricing agreements.

Bethel Utilities Corporation Rate Structure for March 1, 2011 bill:

| RATE TYPE | |
|----------------------------|---------------------|
| Customer Charge | \$42.93 |
| Demand Charge | \$30.02/KW |
| Energy Charge | \$0.2925/KWH |
| Power Adjustment Surcharge | \$0.0820/KWH |
| RCC | \$0.000552/KWH |
| Effective Rate | \$0.4662/KWH |

***The effective rate is all of the charges totaled together and divided by the kilowatt hour used.

Customer Charge

A flat fee that covers costs for meter reading, billing and customer service.

Utility Charge (kWh charge)

This charge is multiplied by the number of kilowatt-hours (kWh) used in a monthly billing period. It covers the costs to maintain power plants and substations, interest on loans as well as wires, power poles and transformers.

Fuel and Purchased Power

This charge is based on a combination of forecasted and actual power costs. The monthly charge allows Golden Valley to pass on increases and decreases in fuel and energy purchases to our members. It is calculated quarterly and multiplied by the kilowatt-hours used each month.

Regulatory Charge

This charge of .000492 per kWh is set by the Regulatory Commission of Alaska (RCA). Since November 1, 1992, the Regulatory Commission of Alaska has been funded by a Regulatory Charge to the utilities it regulates rather than through the State general fund. The charge, labeled "Regulatory Cost Charge." on your bill, is set by the RCA, and applies to all retail kilowatt-hours sold by regulated electric utilities in Alaska.

Appendix E Analysis Methodology

Data collected was processed using AkWarm energy use software to estimate current energy consumption by end usage and calculate energy savings for each of the proposed energy efficiency measures (EEMs). In addition, separate analysis may have been conducted to evaluate EEMs that AkWarm cannot effectively model to evaluate potential reductions in annual energy consumption. Analyses were conducted under the direct supervision of a Certified Energy Auditor, Certified Energy Manager, or a Professional Engineer.

EEMs are evaluated based on building use, maintenance and processes, local climate conditions, building construction type, function, operational schedule and existing conditions. Energy savings are calculated based on industry standard methods and engineering estimations. Each model created in AkWarm is carefully compared to existing utility usage obtained from utility bills. The AkWarm analysis provides a number of tools for assessing the cost effectiveness of various improvement options. The primary assessment value used in this audit report is the Savings/Investment Ratio (SIR). The SIR is a method of cost analysis that compares the total cost savings through reduced energy consumption to the total cost of a project over its assumed lifespan, including both the construction cost and ongoing maintenance and operating costs. Other measurement methods include Simple Payback, which is defined as the length of time it takes for the savings to equal the total installed cost and Breakeven Cost, which is defined as the highest cost that would yield a Savings/Investment Ratio of one.

EEMs are recommended by AkWarm in order of cost-effectiveness. AkWarm first calculates individual SIRs for each EEM, and then ranks the EEMs by SIR, with higher SIRs at the top of the list. An individual EEM must have a SIR greater than or equal to one in order to be recommended by AkWarm. Next AkWarm modifies the building model to include the installation of the first EEM and then re-simulates the energy use. Then the remaining EEMs are re-evaluated and ranked again. AkWarm goes through this iterative process until all suggested EEMs have been evaluated.

Under this iterative review process, the savings for each recommended EEM is calculated based on the implementation of the other, more cost effective EEMs first. Therefore, the implementation of one EEM affects the savings of other EEMs that are recommended later. The savings from any one individual EEM may be relatively higher if the individual EEM is implemented without the other recommended EEMs. For example, implementing a reduced operating schedule for inefficient lighting may result in relatively higher savings than implementing the same reduced operating schedule for newly installed lighting that is more efficient. If multiple EEMs are recommended, AkWarm calculates a combined savings.

Inclusion of recommendations for energy savings outside the capability of AkWarm will impact the actual savings from the AkWarm projections. This will almost certainly result in lower energy savings and monetary savings from AkWarm recommendations. The reality is that only so much energy is consumed in a building. Energy savings from one EEM reduces the amount of energy that can be saved from additional EEMs. For example, installation of a lower wattage light bulb does not save energy or money if the bulb is never turned on because of a schedule or operational change at the facility.

Appendix F Audit Limitations

The results of this audit are dependent on the input data provided and can only act as an approximation. In some instances, several EEMs or installation methods may achieve the identified potential savings. Actual savings will depend on the EEM selected, the price of energy, and the final installation and implementation methodology. Competent tradesmen and professional engineers may be required to design, install, or otherwise implement some of the recommended EEMs. This document is an energy use audit report and is not intended as a final design document, operation, and maintenance manual, or to take the place of any document provided by a manufacturer or installer of any device described in this report.

Cost savings are calculated based on estimated initial costs for each EEM. Estimated costs include labor and equipment for the full up-front investment required to implement the EEM. The listed installation costs within the report are conceptual budgetary estimates and should not be used as design estimates. The estimated costs are derived from Means Cost Data, industry publications, local contractors and equipment suppliers, and the professional judgment of the CEA writing the report and based on the conditions at the time of the audit.

Cost and energy savings are approximations and are not guaranteed.

Additional significant energy savings can usually be found with more detailed auditing techniques that include actual measurements of electrical use, temperatures in the building and HVAC ductwork, intake and exhaust temperatures, motor runtime and scheduling, and infrared, air leakage to name just a few. Implementation of these techniques is the difference between a Level III Energy Audit and the Level II Audit that has been conducted.

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Appendix G References

Although not all documents listed below are specifically referenced in this report, each contains information and insights considered valuable to most buildings.

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Appendix H Typical Energy Use and Cost – Fairbanks and Anchorage

This report provides data on typical energy costs and use on selected building in Fairbanks and Anchorage, Alaska for comparative purposes only. The values provided by the US Energy Information Administration CBECS study included a broader range of building types for the Continental U.S. are not necessarily good comparatives for buildings and conditions in Alaska. An assortment of values from CBECS may be found in Appendix I.

The Alaska data described in this report came from a benchmarking study NORTECH and other Technical Services Providers (TSPs) completed on publicly owned buildings in Alaska under contract with AHFC. This study acquired actual utility data for municipal buildings and schools in Alaska for the two recent full years. The utility data included costs and quantities including fuel oil, electricity, propane, wood, steam, and all other energy source usage. This resulted in a database of approximately 900 buildings. During the course of the benchmarking study, the comparisons made to the CBECS data appeared to be inappropriate for various reasons. Therefore, this energy use audit report references the average energy use and energy cost of Anchorage and Fairbanks buildings as described below.

The Alaska benchmarking data was evaluated in order to find valid comparison data. Buildings with major energy use information missing were eliminated from the data pool. After detailed scrutiny of the data, the most complete information was provided to NORTECH by the Fairbanks North Star Borough School District (FNSBSD) and the Anchorage School District (ASD). The data sets from these two sources included both the actual educational facilities as well as the district administrative buildings and these are grouped together in this report as Fairbanks and Anchorage schools. These two sources of information, being the most complete and reasonable in-state information have been used to identify an average annual energy usage for Fairbanks and for Anchorage in order to provide a comparison for other facilities in Alaska.

Several factors may limit the comparison of a specific facility to these regional indicators. In Fairbanks, the FNSBSD generally uses number two fuel oil for heating needs and electricity is provided by Golden Valley Electric Association (GVEA). GVEA produces electricity from a coal fired generation plant with additional oil generation upon demand. A few of the FNSBSD buildings in this selection utilize district steam and hot water. The FNSBSD has recently (the last ten years) invested significantly in envelope and other efficiency upgrades to reduce their operating costs. Therefore a reader should be aware that this selection of Fairbanks buildings has energy use at or below average for the entire Alaska benchmarking database.

Heating in Anchorage is through natural gas from the nearby natural gas fields. Electricity is also provided using natural gas. As the source is nearby and the infrastructure for delivery is in place, energy costs are relatively low in the area. As a result, the ASD buildings have lower energy costs, but higher energy use, than the average for the entire benchmarking database.

These special circumstances should be considered when comparing the typical annual energy use for particular buildings.



Appendix I Typical Energy Use and Cost – Continental U.S.

| Released: Dec 2006 | | | | | | | |
|--|--------------------------------|-----------------------------------|---|-------------------------------|----------------------------|--------------------------------|--------------------------|
| Next CBECS will be conducted in 2007 | | | | | | | |
| Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003 | | | | | | | |
| | All Buildings* | | | Sum of Major Fuel Consumption | | | |
| | Number of Buildings (thousand) | Floor space (million square feet) | Floor space per Building (thousand square feet) | Total (trillion BTU) | per Building (million BTU) | per Square Foot (thousand BTU) | per Worker (million BTU) |
| All Buildings* | 4,645 | 64,783 | 13.9 | 5,820 | 1,253 | 89.8 | 79.9 |
| Building Floor space (Square Feet) | | | | | | | |
| 1,001 to 5,000 | 2,552 | 6,789 | 2.7 | 672 | 263 | 98.9 | 67.6 |
| 5,001 to 10,000 | 889 | 6,585 | 7.4 | 516 | 580 | 78.3 | 68.7 |
| 10,001 to 25,000 | 738 | 11,535 | 15.6 | 776 | 1,052 | 67.3 | 72.0 |
| 25,001 to 50,000 | 241 | 8,668 | 35.9 | 673 | 2,790 | 77.6 | 75.8 |
| 50,001 to 100,000 | 129 | 9,057 | 70.4 | 759 | 5,901 | 83.8 | 90.0 |
| 100,001 to 200,000 | 65 | 9,064 | 138.8 | 934 | 14,300 | 103.0 | 80.3 |
| 200,001 to 500,000 | 25 | 7,176 | 289.0 | 725 | 29,189 | 101.0 | 105.3 |
| Over 500,000 | 7 | 5,908 | 896.1 | 766 | 116,216 | 129.7 | 87.6 |
| Principal Building Activity | | | | | | | |
| Education | 386 | 9,874 | 25.6 | 820 | 2,125 | 83.1 | 65.7 |
| Food Sales | 226 | 1,255 | 5.6 | 251 | 1,110 | 199.7 | 175.2 |
| Food Service | 297 | 1,654 | 5.6 | 427 | 1,436 | 258.3 | 136.5 |
| Health Care | 129 | 3,163 | 24.6 | 594 | 4,612 | 187.7 | 94.0 |
| Inpatient | 8 | 1,905 | 241.4 | 475 | 60,152 | 249.2 | 127.7 |
| Outpatient | 121 | 1,258 | 10.4 | 119 | 985 | 94.6 | 45.8 |
| Lodging | 142 | 5,096 | 35.8 | 510 | 3,578 | 100.0 | 207.5 |
| Retail (Other Than Mall) | 443 | 4,317 | 9.7 | 319 | 720 | 73.9 | 92.1 |
| Office | 824 | 12,208 | 14.8 | 1,134 | 1,376 | 92.9 | 40.3 |
| Public Assembly | 277 | 3,939 | 14.2 | 370 | 1,338 | 93.9 | 154.5 |
| Public Order and Safety | 71 | 1,090 | 15.5 | 126 | 1,791 | 115.8 | 93.7 |
| Religious Worship | 370 | 3,754 | 10.1 | 163 | 440 | 43.5 | 95.6 |
| Service | 622 | 4,050 | 6.5 | 312 | 501 | 77.0 | 85.0 |
| Warehouse and Storage | 597 | 10,078 | 16.9 | 456 | 764 | 45.2 | 104.3 |
| Other | 79 | 1,738 | 21.9 | 286 | 3,600 | 164.4 | 157.1 |
| Vacant | 182 | 2,567 | 14.1 | 54 | 294 | 20.9 | 832.1 |

This report references the Commercial Buildings Energy Consumption Survey (CBECS), published by the U.S. Energy Information Administration in 2006. Initially this report was expected to compare the annual energy consumption of the building to average national energy usage as documented below. However, a direct comparison between one specific building and the groups of buildings outlined below yielded confusing results. Instead, this report uses a comparative analysis on Fairbanks and Anchorage data as described in Appendix F. An abbreviated excerpt from CBECS on commercial buildings in the Continental U.S. is below.



Appendix J List of Conversion Factors and Energy Units

1 British Thermal Unit is the energy required to raise one pound of water one degree F°
1 Watt is approximately 3.412 BTU/hr
1 horsepower is approximately 2,544 BTU/hr
1 horsepower is approximately 746 Watts
1 "ton of cooling" is approximately 12,000 BTU/hr, the amount of power required to melt one short ton of ice in 24 hours

1 Therm = 100,000 BTU
1 KBTU = 1,000 BTU
1 KWH = 3413 BTU
1 KW = 3413 BTU/Hr
1 Boiler HP = 33,400 BTU/Hr
1 Pound Steam = approximately 1000 BTU
1 CCF of natural gas = approximately 1 Therm
1 inch H2O = 250 Pascal (Pa) = 0.443 pounds/square inch (psi)
1 atmosphere (atm) = 10,1000 Pascal (Pa)

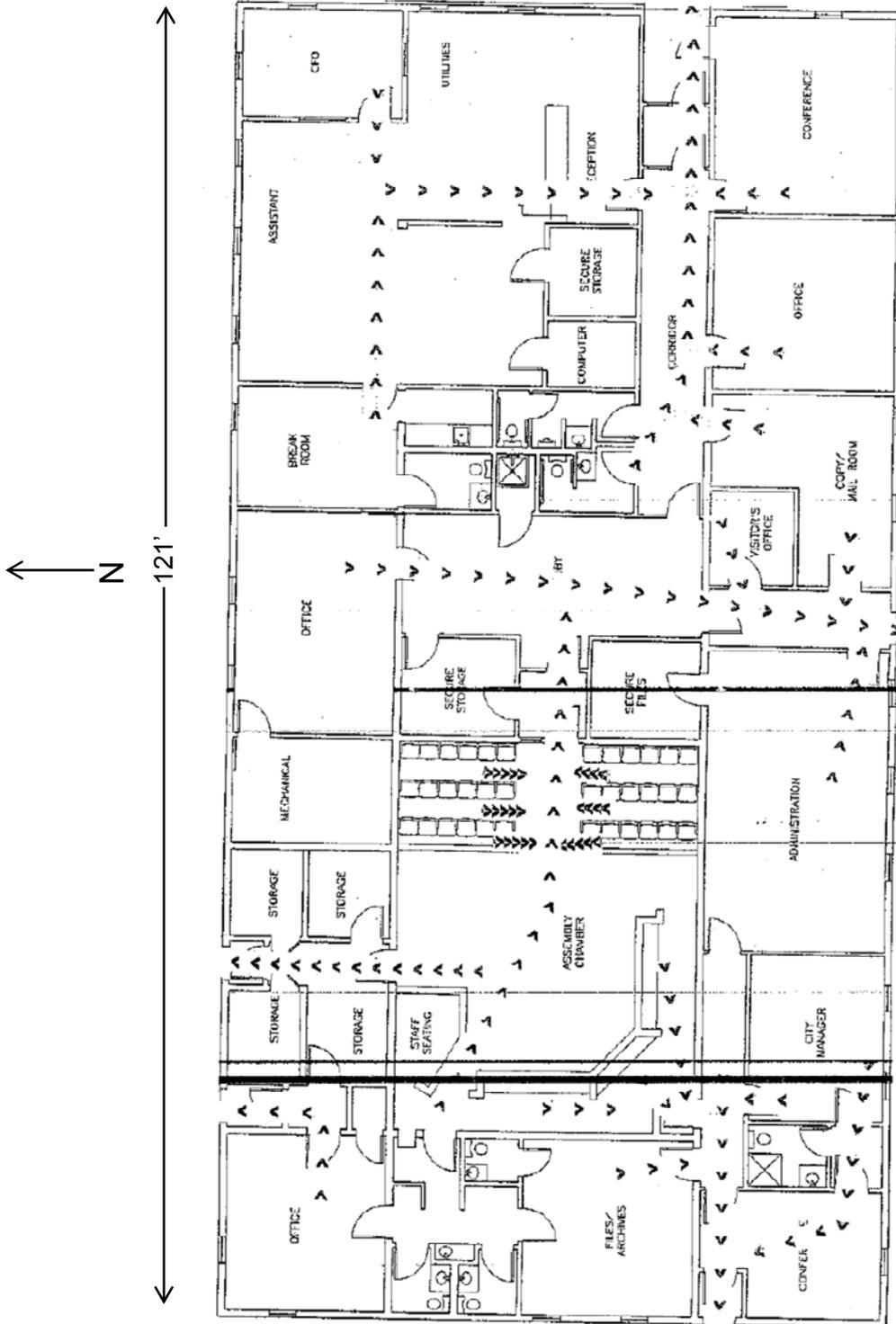
BTU British Thermal Unit
CCF 100 Cubic Feet
CFM Cubic Feet per Minute
GPM Gallons per minute
HP Horsepower
Hz Hertz
kg Kilogram (1,000 grams)
kV Kilovolt (1,000 volts)
kVA Kilovolt-Amp
KVAR Kilovolt-Amp Reactive
KW Kilowatt (1,000 watts)
KWH Kilowatt Hour
V Volt
W Watt

Appendix K List of Acronyms, Abbreviations, and Definitions

| | |
|--|--|
| ACH | Air Changes per Hour |
| AFUE | Annual Fuel Utilization Efficiency |
| Air Economizer | A duct, damper, and automatic control system that allows a cooling system to supply outside air to reduce or eliminate the need for mechanical cooling. |
| Ambient Temperature | Average temperature of the surrounding air |
| Ballast | A device used with an electric discharge lamp to cause the lamp to start and operate under the proper circuit conditions of voltage, current, electrode heat, etc. |
| CO₂ | Carbon Dioxide |
| CUI | Cost Utilization Index |
| CDD | Cooling Degree Days |
| DDC | Direct Digital Control |
| EEM | Energy Efficiency Measure |
| EER | Energy Efficient Ratio |
| EUI | Energy Utilization Index |
| FLUOR | Fluorescent |
| Grade | The finished ground level adjoining a building at the exterior walls |
| HDD | Heating Degree Days |
| HVAC | Heating, Ventilation, and Air-Conditioning |
| INCAN | Incandescent |
| NPV | Net Present Value |
| R-value | Thermal resistance measured in BTU/Hr-SF-F (Higher value means better insulation) |
| SCFM | Standard Cubic Feet per Minute |
| Savings to Investment Ratio (SIR) | Savings over the life of the EEM divided by Investment capital cost. Savings includes the total discounted dollar savings considered over the life of the improvement. Investment in the SIR calculation includes the labor and materials required to install the measure. |
| Set Point | Target temperature that a control system operates the heating and cooling system |
| Simple payback | A cost analysis method whereby the investment cost of an EEM is divided by the first year's savings of the EEM to give the number of years required to recover the cost of the investment. |

Appendix L Building Floor Plan

63'



121'

N

Copy of on-site fire escape plan



ENERGY AUDIT

BETHEL COURT BUILDING
204 State Highway
Bethel, Alaska



Prepared for:

Mr. Lee Foley
PO Box 1388
Bethel, Alaska

Prepared by:

David Lanning PE, CEA
Jeremy Spargur EIT, CEAIT

March 21, 2012



Environmental Engineering & Industrial Hygiene Consultants

Managing Office
2400 College Road
Fairbanks, Alaska 99709
p. 907.452.5688
f. 907.452.5694

3105 Lakeshore Dr. Suite 106A
Anchorage, Alaska 99517
p. 907.222.2445
f. 907.222.0915

4402 Thane Road
Juneau, Alaska 99801
p: 907.586.6813
f: 907.586.6819

www.nortechengr.com



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1.0 EXECUTIVE SUMMARY

NORTECH has completed an ASHRAE Level II Energy Audit of the Bethel Court Building, a 28,820 square foot facility. The audit began with benchmarking which resulted in a calculation of the energy consumption per square foot. A site inspection was completed on November 16, 2011 to obtain information about the lighting, heating, ventilation, cooling and other building energy uses. The existing usage data and current systems were then used to develop a building energy consumption model using AkWarm.

Once the model was calibrated, a number of Energy Efficiency Measures (EEMs) were developed from review of the data and observations. EEMs were evaluated and ranked on the basis of both energy savings and cost using a Savings/Investment Ratio (SIR). While these modeling techniques were successful in verifying that many of the EEMs would save energy, not all of the identified EEMs were considered cost effective based on the hardware, installation, and energy costs at the time of this audit.

The following table, from AkWarm, is a summary of the recommended EEMs for the Bethel Court Building. Additional discussion of the modeling process can be found in Section 3. Details of each individual EEM can be found in Appendix A of this report. A summary of EEMs that were evaluated but are not currently recommended is located in Appendix B.

| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|---|--|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 1 | Ventilation | Reduce outside air to by repairing controls closing dampers (4000 CFM) | \$43,102 | \$20,000 | 29 | 0.5 |
| 2 | Lighting: Probation Bathroom, Elevator | Replace with 2 LED 8W Module StdElectronic | \$158 | \$75 | 13 | 0.5 |
| 3 | Lighting: Office 1, Visiting Judge | Replace with 2 LED 17W Module StdElectronic | \$98 | \$75 | 7.9 | 0.8 |
| 4 | Lighting: Hall A, Hall G, Hall H, S/L, Grand Jury | Replace with 6 LED (2) 17W Module StdElectronic | \$381 | \$960 | 5.8 | 2.5 |
| 5 | Lighting: Jury Deliberation 2, | Replace with LED (3) 17W Module StdElectronic | \$94 | \$240 | 5.7 | 2.6 |
| 6 | Lighting: JS Office, Hall 3, Hearing Room 1, Court Room 2, Court Room 4, Court Room 6, | Replace with 10 LED (3) 17W Module StdElectronic | \$941 | \$2,400 | 5.7 | 2.6 |





| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|---|--|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 7 | Lighting: Customer Lobby, Clerk's Office, Security Screening, Arctic North, | Replace with 4 LED (3) 17W Module StdElectronic | \$268 | \$960 | 3.8 | 3.6 |
| 8 | Other Electrical: headbolts | Remove Manual Switching and Add new Clock Timer or Other Scheduling Control | \$2,187 | \$4,000 | 3.4 | 1.8 |
| 9 | HVAC And DHW | grundfos ups 40-80 to Magna (\$2000),, replace two ups 40/240s to magna (\$4500) | \$1,605 | \$6,500 | 3.3 | 4.1 |
| 10 | Refrigeration: Full Size Refrigerator | Replace with 2 Full Size Refrigerator | \$726 | \$1,690 | 2.6 | 2.3 |
| 11 | Lighting: Exterior Wall/Ceiling Pack | Replace with 25 LED 17W Module StdElectronic | \$2,298 | \$6,000 | 2.4 | 2.6 |
| 12 | Lighting: clerk of court reception, clerk of court, stor 100E, offices:1-7,9,11, conference 1, rr 1, attorney 1, district attorney, jury deliberation, visiting judge, judicial asst, district ct judge, jury deliberation 120 | Replace with 69 LED (2) 17W Module StdElectronic | \$1,811 | \$11,040 | 2.2 | 6.1 |
| 13 | Lighting: Hall A, Hall B, Hall C, Hall D, ASAP 110, Hall E, Hall F, Toilet 137B, Toilet 132A, Hall G, Hall H, Courtroom 5, Toilet 115A, Toilet 115B, Holding Corridor, Sound Lock 45L, 1SL, 2SL, Toilet 220A, Toilet 220B, Elevator House, Court 5 Corridor, Hall X, Hall Y, AHU 2 3 6, | Replace with 56 LED (2) 17W Module StdElectronic | \$1,112 | \$8,960 | 1.8 | 8.1 |





| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|--|---|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 14 | Lighting: Holding Corridor, Juvenile HC 1, HC 2, HC3, HC4, | Replace with 9 LED (2) 17W Module StdElectronic | \$179 | \$1,440 | 1.8 | 8.1 |
| 15 | Lighting: DOL Storage, DOL Storage 2, Hall F, File #1, Reception Area, Corrections Reception, Probation Clerical, Probation Bath, Hall H, Courtroom 5, Jury Deliberation 2, Hall 3, Hearing Room 1, 1/2 SL, Court Room 2, Court Room 4, Court Room 6, AC, Law Library, Jury 102, Grand Jury, AC 104, | Replace with 72 LED (3) 17W Module StdElectronic | \$2,117 | \$17,280 | 1.8 | 8.2 |
| 16 | Lighting: copy room, sec/rec, conf 2, visiting attorney, DOL bath, conf 3, JS off | Replace with 24 LED (2) 17W Module StdElectronic | \$896 | \$3,840 | 1.4 | 4.3 |
| 17 | Lighting: Women's W-1, Men's W-1, Women's HC, Men's HC, Toilet 128A, Toilet 138A, Toilet 134A, Stair 1, | Replace with 16 LED (2) 17W Module StdElectronic | \$226 | \$2,560 | 1.2 | 11.3 |
| 18 | Lighting: Storage 100E, Arctic 1, Arctic 2, Office 13, 132SL, Toilet 124A, Toilet 122, Hall 100E, Hall 100C, Hall J, Hall K, S/L, Holding Corridor 217, Corridor 2, Lobby 210, Sump Room, Sump Room 2, | Replace with 28 LED (2) 17W Module StdElectronic | \$396 | \$4,480 | 1.2 | 11.3 |

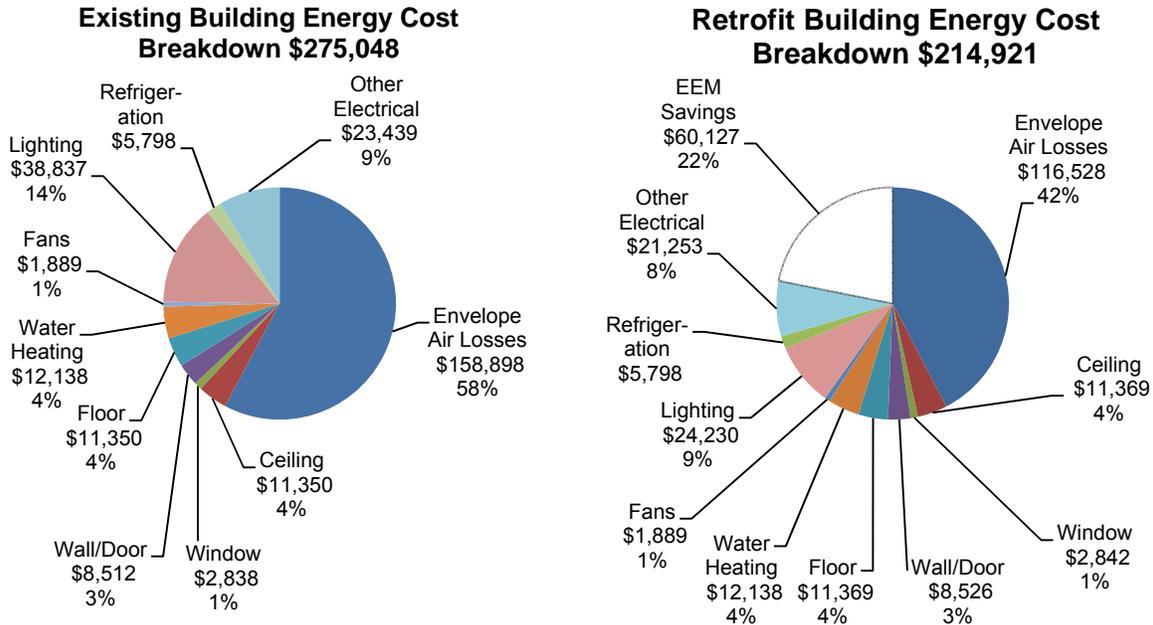




| PRIORITY LIST – ENERGY EFFICIENCY MEASURES (EEMs) | | | | | | |
|---|--|---|--|--------------------------------|--|------------------------------|
| Rank | Feature/ Location | Improvement Description | Estimated Annual Energy Savings | Estimated Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 19 | Lighting: Jan J-1, Elect/Phone, Elev. Equip. 113, COC Storage, Mechanical Room, Phone/Data C1, Attic Access A B C D, AHU 4 5, | Replace with 33 LED (2) 17W Module StdElectronic | \$466 | \$5,280 | 1.2 | 11.3 |
| 20 | Lighting: Clerk's Office, Customer Lobby, Courts Coord., Security Screening, Copy Area, DOL Clerical, Attorney 2, Office 13, Office 8, Office 10, Office 12, Magistrates Office, Judicial Assistant, Superior Court Judge, Judge 138, Law Clerk | Replace with 72 LED (3) 17W Module StdElectronic | \$1,051 | \$17,280 | 0.82 | 16.4 |
| 21 | Lighting: Exterior Storage | Replace with LED (2) 17W Module StdElectronic | \$14 | \$160 | 0.53 | 11.4 |
| TOTAL, cost-effective measures | | | \$60,127 | \$115,220 | 6.68 | 1.9 |



Modeled Building Energy Cost Breakdown



The preceding charts are a graphical representation of the modeled energy usage for the Bethel Court Building. The greatest portions of energy cost for the building are envelope air losses and lighting. This indicates that the greatest savings can be found in reducing the amount of outside air provided to the building mechanically or through air leakage, upgrading lighting and potentially upgrading the envelope. Detailed improvements for ventilation, lighting and other cost effective measures can be found in Appendix A.

The chart breaks down energy usage by cost into the following categories:

- Envelope Air Losses—the cost to provide heated fresh air to occupants, air leakage, heat lost in air through the chimneys and exhaust fans, heat lost to wind and other similar losses.
- Envelope
 - Ceiling—quantified heat loss transferred through the ceiling portion of the envelope.
 - Window—quantified heat loss through the window portion of the envelope.
 - Wall/Door—quantified heat loss through the wall and door portions of the envelope.
 - Floor—quantified heat loss through the floor portion of the envelope.
- Water Heating—energy cost to provide domestic hot water.
- Fans—energy cost to run ventilation, and exhaust fans.
- Lighting—energy cost to light the building.
- Refrigeration—energy costs to provide refrigerated goods for the occupants.
- Other Electrical—includes energy costs not listed above including cooking loads, laundry loads, other plug loads and electronics.



2.0 INTRODUCTION

NORTECH contracted with the Alaska Housing Finance Corporation to perform ASHRAE Level II Energy Audits for publically owned buildings in Alaska. This report presents the findings of the utility benchmarking, modeling analysis, and the recommended building modifications, and building use changes that are expected to save energy and money.

The report is organized into sections covering:

- description of the facility,
- the building’s historic energy usage (benchmarking),
- estimating energy use through energy use modeling,
- evaluation of potential energy efficiency or efficiency improvements, and
- recommendations for energy efficiency with estimates of the costs and savings.

2.1 Building Use

The Bethel Court Building serves as the legal hub for the Kuskokwim River communities and consists primarily of court rooms and office space for the Alaska State Court System.

2.2 Building Occupancy and Schedules

Approximately 50 people occupy this building from 8 am – 5 pm Monday through Friday. Several people are in the building for a few hours on each weekend day as well. On occasion, up to 200 people can occupy this building for trials and other public events.

2.3 Building Description

The Bethel Court Building is a two story-wood framed building that sits on pilings. The single story portion of the building was built in 2000 and the two story addition was built in 2006. The windows are primarily double pane vinyl windows and the doors are insulated metal doors, some with windows.

Building Envelope

| Building Envelope: Walls | | | |
|--------------------------|--|-----------------------|--------------------------------|
| Wall Type | Description | Insulation | Notes |
| Above-grade walls | Wood-framed with 2x8 studs spaced 16-inches on center. | R-25 fiberglass batt. | No signs of insulation damage. |

| Building Envelope: Floors | | | |
|---------------------------|-------------|----------------------|-------|
| Floor Type | Description | Insulation | Notes |
| Elevated Floor | 2x12 Joists | R-38 fiberglass batt | None |





| Building Envelope: Roof | | | |
|-------------------------|--------------------|-----------------------|--------------------------------|
| Roof Type | Description | Insulation | Notes |
| All Roofs | Hot roof with 2x12 | R-38 fiberglass batts | No signs of insulation damage. |

| Building Envelope: Doors and Windows | | | |
|--------------------------------------|---|-------------------|-------|
| Door and Window Type | Description | Estimated R-Value | Notes |
| Window | Double pane, vinyl, air gap >3/8, not south | 2 | None |
| Window | Double pane, vinyl, air gap >3/8, south | 2 | None |
| Window | Double pane, aluminum with thermal break, air gap >3/8, not south | 1.6 | None |
| Window | Double pane, aluminum with thermal break, air gap >3/8, south | 1.6 | None |

Heating and Ventilation Systems

The building is heated with a single boiler, six air handling units (AHUs) and two heat recovery ventilation units (HRV). Three sets of pumps distribute the heat from the boiler to the following building zones:

- Baseboards and AHUs in the original portion of the building
- Heat trace
- Baseboards and AHUs in the two story addition

The AHUs operate on a schedule from 6 am-10 pm seven days a week.

Air Conditioning System

The Court Building is not equipped with an air conditioning system, but utilizes economizer cooling. Installation of an air conditioning system is being considered.

Energy Management

The Court Building is equipped with an energy management system. The ventilation system utilizes CO₂ sensors and Demand Control Ventilation during the winter months and temperature sensors in the summer to limit outside air intake.

Lighting Systems

The primary lighting type in this building is ceiling mounted fluorescent fixtures containing 32 watt T8 (1" diameter, 4' long) lamps. The exterior is lit with wall packs containing high pressure sodium lamps.



Domestic Hot Water

The domestic hot water is produced by a two-stage heating system. In order to save on electric costs, the water is initially heated through a heat exchanger, then an electric heater. The water is provided at approximately 140°F.

3.0 BENCHMARKING 2010 UTILITY DATA

Benchmarking building energy use consists of obtaining and then analyzing two years of energy bills. The original utility bills are necessary to determine the raw usage, and charges as well as to evaluate the utility's rate structure. The metered usage of electrical and natural gas consumption is measured monthly, but heating oil, propane, wood, and other energy sources are normally billed upon delivery and provide similar information. During benchmarking, information is compiled in a way that standardizes the units of energy and creates energy use and billing rate information statistics for the building on a square foot basis. The objectives of benchmarking are:

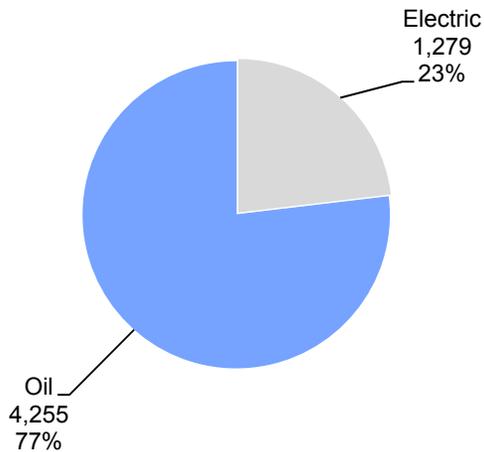
- to understand patterns of use,
- to understand building operational characteristics,
- for comparison with other similar facilities in Alaska and across the country, and
- to offer insight in to potential energy savings.

The results of the benchmarking, including the energy use statistics and comparisons to other areas, are discussed in the following sections.

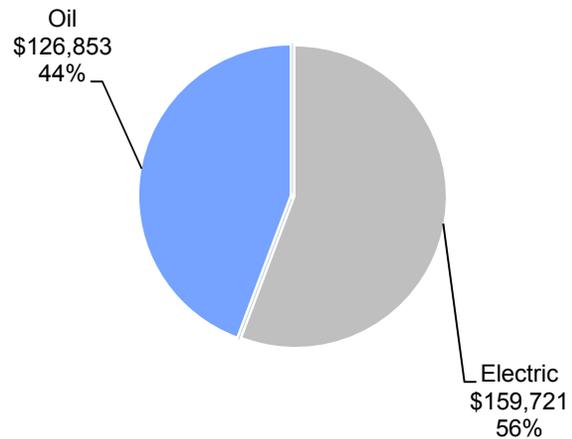
3.1 Total Energy Use and Cost in 2010

The energy use profiles below show the energy and cost breakdowns for the Bethel Court Building. The total annual energy use was 5,534 MMBTUs and cost for the building was \$286,574. These charts show the portion of use for a fuel type and the portion of its cost.

2010 Energy Use Total (mmBTU)



2010 Energy Cost Total



The above charts indicate that the highest portion of energy use is for oil and the highest portion of cost is for electricity. Fuel oil consumption correlates directly to space heating and domestic hot water while electrical use can correlate to lighting systems, plug loads, and HVAC equipment. The fuel type with the highest cost often provides the most opportunity for savings.

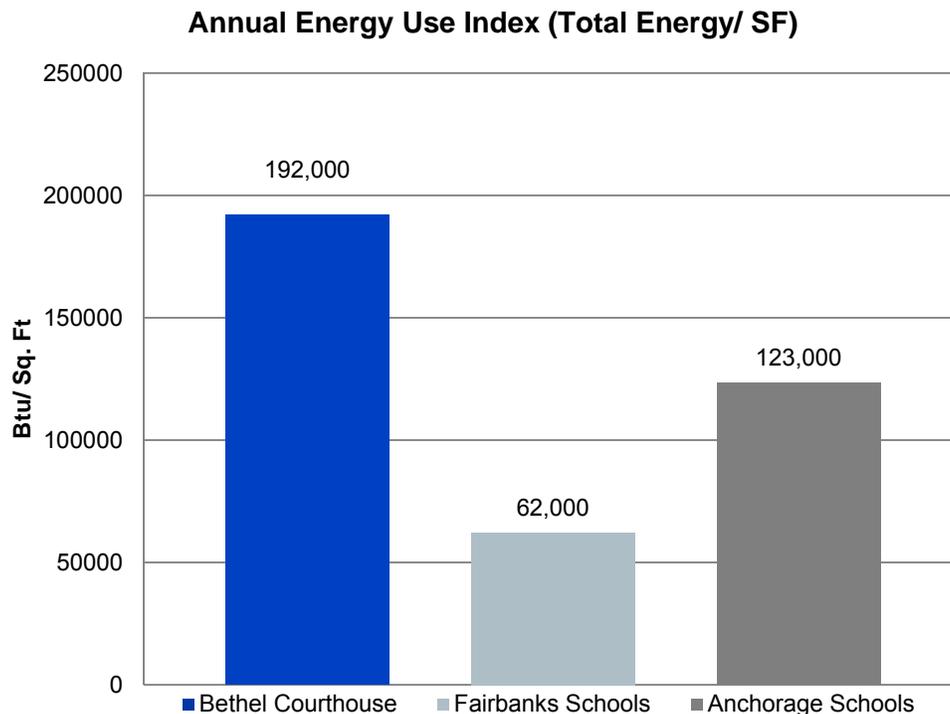
3.2 Energy Utilization Index for 2010

The primary benchmarking statistic is the Energy Utilization Index (EUI). The EUI is calculated from the utility bills and provides a simple snapshot of the quantity of energy actually used by the building on a square foot and annual basis. The calculation converts the total energy use for the year from all sources in the building, such as heating fuel and electrical usage, into British Thermal Units (BTUs). This total annual usage is then divided by the number of square feet of the building. The EUI units are BTUs per square foot per year.

The benchmark analysis found that the Bethel Court Building has an EUI of 192,000 BTUs per square foot per year. This is high for a wood building with a well managed HVAC system.

The EUI is useful in comparing this building's energy use to that of other similar buildings in Alaska and in the Continental United States. The EUI can be compared to average energy use in 2003 found in a study by the U.S. Energy Information Administration of commercial buildings (abbreviated CBECS, 2006). That report found an overall average energy use of about 90,000 BTUs per square foot per year while studying about 6,000 commercial buildings of all sizes, types, and uses that were located all over the Continental U.S. (see Table C3 in Appendix I).

In a recent and unpublished state-wide benchmarking study sponsored by the Alaska Housing Finance Corporation, schools in Fairbanks averaged 62,000 BTUs per square foot and schools in Anchorage averaged 123,000 BTUs per square foot annual energy use. The chart below shows the Bethel Court Building relative to these values. These findings are discussed further in Appendix H.



3.3 Cost Utilization Index for 2010

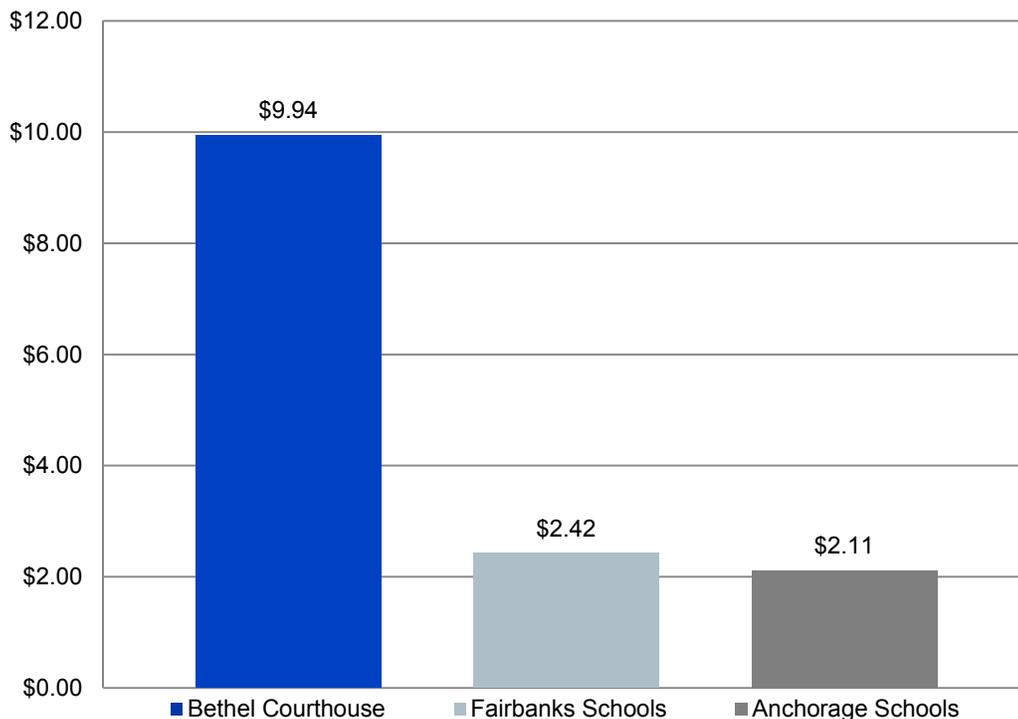
Another benchmarking statistic that is useful is the Cost Utilization Index (CUI), which is the cost for energy used in the building on a square foot basis per year. The CUI is calculated from the cost for utilities for a year period. The CUI permits comparison of buildings on total energy cost even though they may be located in areas with differing energy costs and differing heating and/or cooling climates. The cost of energy, including heating oil, natural gas, and electricity, can vary greatly over time and geographic location and can be higher in Alaska than other parts of the country.

The CUI for Bethel Court Building is about \$9.94/SF. This is based on utility costs from 2010 and the following rates:

| | | |
|--------------|----|------------------|
| Electricity | at | \$ 0.43 / kWh |
| # 1 Fuel Oil | at | \$ 4.27 / gallon |

The Department of Energy Administration study, mentioned in the previous section (CBECS, 2006) found an average cost of \$2.52 per square foot in 2003 for 4,400 buildings in the Continental U.S (Tables C4 and C13 of CBDES, 2006). Schools in Fairbanks have an average cost for energy of \$2.42 per square foot while Anchorage schools average \$2.11 per square foot. The chart below shows the Bethel Court Building relative to these values. More details are included in Appendix H.

Annual Energy Cost Index (Total Cost/ SF)

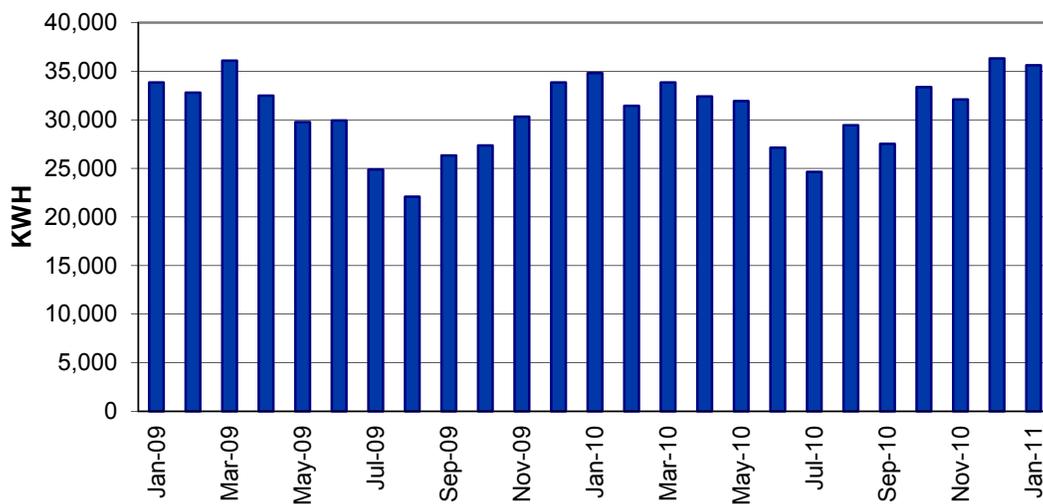


3.4 Seasonal Energy Use Patterns

Energy consumption is often highly correlated with seasonal climate and usage variations. The graphs below show the electric and fuel consumption of this building over the course of two years. The lowest monthly use is called the baseline use. The electric baseline often reflects year round lighting consumption. The clear relation of increased energy usage during periods of cold weather can be seen in the months with higher usage.

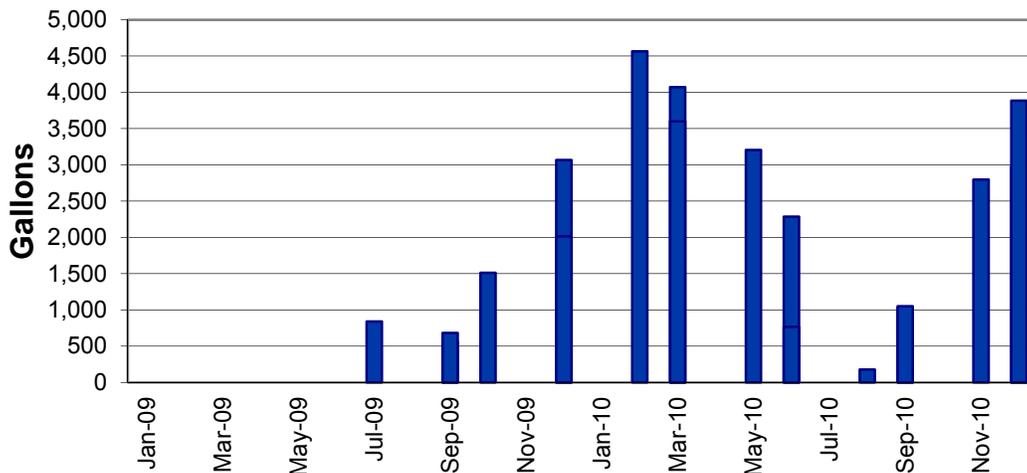
Electrical Consumption

■ City of Bethel - Court Bldg



Fuel Oil Deliveries

■ City of Bethel - Court Bldg



No fuel data available prior to July 2009.





3.5 Future Energy Monitoring

Energy accounting is the process of tracking energy consumption and costs. It is important for the building owner or manager to monitor and record both the energy usage and cost each month. Comparing trends over time can assist in pinpointing major sources of energy usage and aid in finding effective energy efficiency measures. There are two basic methods of energy accounting; manual and automatic. Manual tracking of energy usage may already be performed by an administrative assistant, however if the records are not scrutinized for energy use, then the data is merely a financial accounting. Digital energy tracking systems, such as Smart Meters can be installed. They display and record real-time energy usage and accumulated energy use and cost. There are several other types including OptoEMU by Opto22 which has all of the information accessible via Ethernet browser.



4.0 MODELING ENERGY CONSUMPTION

After benchmarking of a building is complete and the site visit has identified the specific systems in the building, a number of different methods are available for quantifying the overall energy consumption and to model the energy use. These range from relatively simple spreadsheets to commercially available modeling software capable of handling complex building systems.

NORTECH has used several of these programs and uses the worksheets and software that best matches the complexity of the building and specific energy use that is being evaluated.

Modeling of an energy efficiency measure (EEM) requires an estimate of the current energy used by the specific feature, the estimated energy use of the proposed EEM and its installed cost. EEMs can range from a single simple upgrade, such as light bulb type or type of motor, to reprogramming of the controls on more complex systems. While the need for a major retrofit can typically be identified by an energy audit, the specific system upgrades often require engineering and design expertise beyond the scope of the standard energy audit.

Based on the field inspection results and discussions with the building owners/operators, auditors developed potential EEMs for the facility. Common EEMs that could apply to almost every older building include:

- Reduce the envelope heat losses through:
 - increased building insulation, and
 - better windows and doors
- Reduce temperature difference between inside and outside using setback thermostats
- Upgrade inefficient:
 - lights,
 - motors,
 - refrigeration units, and
 - other appliances
- Reduce running time of lights/appliances through:
 - motion sensors,
 - on/off timers,
 - light sensors, and
 - other automatic/programmable systems

The objective of the following sections is to describe how the overall energy use of the building was modeled and the potential for energy savings. The specific EEMs that provide these overall energy savings are detailed in Appendix A of this report. While the energy savings of an EEM is unlikely to change significantly over time, the cost savings of an EEM is highly dependent on the current energy price and can vary significantly over time. An EEM that is not currently recommended based on price may be more attractive at a later date or with higher energy prices.

4.1 Understanding How AkWarm Models Energy Consumption

NORTECH used the AkWarm-C model for evaluating the overall energy consumption at Bethel Court Building. The AkWarm program was developed by the Alaska Housing Finance Corporation (AHFC) to model residential energy use. The original AkWarm is the modeling engine behind the successful residential energy upgrade program that AHFC has operated for a number of years. In the past few years, AHFC has developed a version of this model for commercial buildings, referred to AkWarm-C. Although this report and commercial energy auditors often refer to AkWarm, the actual model program used for this project is AkWarm-C.

Energy use in buildings is modeled by calculating energy losses and consumption, such as:

- Heat lost through the building envelope components, including windows, doors, walls, ceilings, crawlspaces, and foundations. These heat losses are computed for each component based on the area, heat resistance (R-value), and the difference between the inside temperature and the outside temperature. AkWarm has a library of temperature profiles for villages and cities in Alaska.
- Window orientation, such as the fact that south facing windows can add heat in the winter but north-facing windows do not.
- Inefficiencies of the heating system, including the imperfect conversion of fuel oil or natural gas due to heat loss in exhaust gases, incomplete combustion, excess air, etc. Some electricity is also consumed in moving the heat around a building through pumping.
- Inefficiencies of the cooling system, if one exists, due to various imperfections in a mechanical system and the required energy to move the heat around.
- Lighting requirements and inefficiencies in the conversion of electricity to light; ultimately all of the power used for lighting is converted to heat. While the heat may be useful in the winter, it often isn't useful in the summer when cooling may be required to remove the excess heat. Lights are modeled by wattage and operational hours.
- Use and inefficiencies in refrigeration, compressor cooling, and heat pumps. Some units are more efficient than others. Electricity is required to move the heat from inside a compartment to outside it. Again, this is a function of the R-Value and the temperature difference between the inside and outside of the unit.
- Plug loads such as computers, printers, mini-fridges, microwaves, portable heaters, monitors, etc. These can be a significant part of the overall electricity consumption of the building, as well as contributing to heat production.
- The schedule of operation for lights, plug loads, motors, etc is a critical component of how much energy is used.

AkWarm adds up these heat losses and the internal heat gains based on individual unit usage schedules. These estimated heat and electrical usages are compared to actual use on both a yearly and seasonal basis. If the AkWarm model is within 5 % to 10% of the most recent 12 months usage identified during benchmarking, the model is considered accurate enough to make predictions of energy savings for possible EEMs.

4.2 AkWarm Calculated Savings for the Bethel Court Building

Based on the field inspection results and discussions with the building owners/operators, auditors developed potential EEMs for the facility. These EEMs are then entered into AkWarm to determine if the EEM saves energy and is cost effective (i.e. will pay for itself). AkWarm calculates the energy and money saved by each EEM and calculates the length of time for the savings in reduced energy consumption to pay for the installation of the EEM. AkWarm makes recommendations based on the Savings/Investment Ratio (SIR), which is defined as ratio of the savings generated over the life of the EEM divided by the installed cost. Higher SIR values are better and any SIR above one is considered acceptable. If the SIR of an EEM is below one, the energy savings will not pay for the cost of the EEM and the EEM is not recommended. Preferred EEMs are listed by AkWarm in order of the highest SIR.

A summary of the savings from the recommended EEMs are listed in this table.

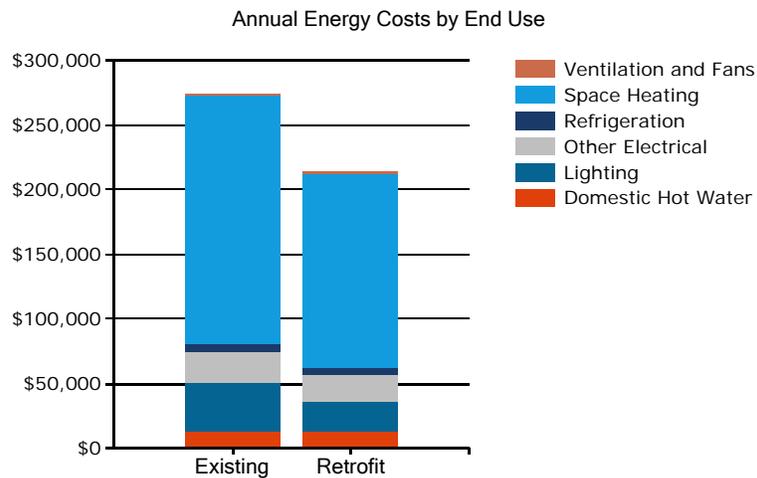
| Description | Space Heating | Water Heating | Lighting | Refrigeration | Other Electrical | Ventilation Fans | Total |
|-----------------------------|---------------|---------------|----------|---------------|------------------|------------------|------------------|
| Existing Building | \$192,947 | \$12,138 | \$38,837 | \$5,798 | \$23,439 | \$1,889 | \$275,048 |
| With All Proposed Retrofits | \$150,634 | \$12,138 | \$24,230 | \$4,777 | \$21,253 | \$1,889 | \$214,921 |
| Savings | \$42,313 | \$0 | \$14,607 | \$1,021 | \$2,186 | \$0 | \$60,127 |

Savings in these categories do not reflect interaction with other categories. So, for example, the savings in lighting does not affect the added space heating cost to make up for the heat saved in replacing less-efficient lights with more-efficient lights that waste less heat.

4.3 AkWarm Projected Energy Costs after Modifications

The AkWarm recommended EEMs appear to result in significant savings in space heating and lighting. The energy cost by end use breakdown was provided by AkWarm based on the field inspection and does not indicate that all individual fixtures and appliances were directly measured. The current energy costs are shown below on the left hand bar of the graph and the projected energy costs, assuming use of the recommended EEMs, are shown on the right.

This graphical format allows easy visual comparison of the various energy requirements of the facility. In the event that not all recommended retrofits are desired, the proposal energy savings can be estimated from visual interpretation from this graph.



4.4 Additional Modeling Methods

The AkWarm program effectively models wood-framed and other buildings with standard heating systems and relatively simple HVAC systems. AkWarm models of more complicated mechanical systems are sometimes poor due to a number of simplifying assumptions and limited input of some variables. Furthermore, AKWarm is unable to model complex HVAC systems such as variable frequency motors, variable air volume (VAV) systems, those with significant digital or pneumatic controls or significant heat recovery capacity. In addition, some other building methods and occupancies are outside AkWarm capabilities.

This report section is included in order to identify benefits from modifications to those more complex systems or changes in occupant behavior that cannot be addressed in AkWarm.

The Court Building could be modeled well in AKWarm. Retrofits for the HVAC system were adequately modeled in AkWarm and did not require additional calculations.

5.0 BUILDING OPERATION AND MAINTENANCE (O & M)

5.1 Operations and Maintenance

A well-implemented operation and maintenance (O & M) plan, by preserving institutional knowledge and directing preventative maintenance, is often the driving force behind energy savings. Such a plan includes a regularly scheduled inspection of each piece of HVAC equipment within the building. Routine maintenance includes the timely replacement of filters, belts and pulleys, the proper greasing of bearings and other details such as topping off the glycol tanks. Additional benefits to a maintenance plan are decreased down time for malfunctioning equipment, early indications of problems, prevention of exacerbated maintenance issues, and early detection of overloading/overheating issues. A good maintenance person knows the building's equipment well enough to spot and repair minor malfunctions before they become major retrofits.

Operations and Maintenance staff implementing a properly designed O & M plan will:

- Track and document
 - Renovations and repairs,
 - Utility bills and fuel consumption, and
 - System performance.
- Keep available for reference
 - A current Building Operating Plan including an inventory of installed systems,
 - The most recent available as-built drawings,
 - Reference manuals for all installed parts and systems, and
 - An up-to-date inventory of on-hand replacement parts.
- Provide training and continuing education for maintenance personnel.
- Plan for commissioning and re-commissioning at appropriate intervals.

5.2 Commissioning

Commissioning of a building is the verification that the HVAC systems perform within the design or usage ranges of the Building Operating Plan. This process ideally, though seldom, occurs as the last phase in construction. HVAC system operation parameters degrade from ideal over time due to incorrect maintenance, improper replacement pumps, changes in facility tenants or usage, changes in schedules, and changes in energy costs or loads. Ideally, re-commissioning of a building should occur every five to ten years. This ensures that the HVAC system meets the potentially variable use with the most efficient means.

5.3 Building Specific Recommendations

The maintenance staff for the Bethel Court Building does a good job with maintaining the equipment and is currently replacing faulty CO₂ sensors which are believed to be responsible for poorly controlled excess ventilation.



APPENDICES





Appendix A Recommended Energy Efficiency Measures

A number of Energy Efficiency Measures (EEMs) are available to reduce the energy use and overall operating cost for the facility. The EEMs listed below are those recommended by AkWarm based on the calculated savings/investment ration (SIR) as described in Appendix E. AkWarm also provides a breakeven cost, which is the maximum initial cost of the EEM that will still return a SIR of one or greater.

This section describes each recommended EEM and identifies the potential energy savings and installation costs. This also details the calculation of breakeven costs, simple payback, and the SIR for each recommendation. The recommended EEMs are grouped together generally by the overall end use that will be impacted.

A.1 Temperature Control

Programmable thermostats are not recommended to be installed in the Bethel Court Building which provide an automatic temperature setback. Analysis of utility bills and on-site inspections indicates that the current boiler is not large enough to reheat the building after a setback on the coldest day of the year. On other days of the year that are not as cold setbacks could be implemented and energy saved.





A.2 Electrical Loads

A.2.1 Lighting

The electricity used by lighting eventually ends up as heat in the building. In areas where electricity is more expensive than other forms of energy, or in areas where the summer temperatures require cooling; this additional heat can be both wasteful and costly. Converting to more efficient lighting reduces cooling loads in the summer and allows the user to control heat input in the winter. The conversion from T12 (one and a half inch fluorescent bulbs) to T8 (one inch), T5 (5/8 inch), Compact Fluorescent Lights (CFL), or LED bulbs provides a significant increase in efficiency. LED bulbs can be directly placed in existing fixtures. The LED bulb bypasses the ballast altogether, which removes the often irritating, “buzzing” noise that magnetic ballasts tend to make.

The cost of electricity in Bethel makes it cost effective to retrofit the current T8 lamps in the ceiling mounted fixtures with 17 watt LED tubes. Furthermore, decreasing the amount of wattage used in lighting will decrease the amount of heat entering the building. During the summer a building gains heat from human occupancy and lighting. Decreasing the heat from the lights will allow the building to be able to run the economizer cooling more effectively and longer into the season as well as decrease the air conditioning size and run time when installed.

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|------------------------------|--|----|--|-------|
| 2 | Probation Bathroom, Elevator | 2 INCAN [Unknown Lamp] with Manual Switching | | Replace with 2 LED 8W Module StdElectronic | |
| Installation Cost | \$75 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$158 |
| Breakeven Cost | \$980 | Savings-to-Investment Ratio | 13 | Simple Payback yrs | 0 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--------------------------|---|-----|---|------|
| 3 | Office 1, Visiting Judge | 2 INCAN A Lamp, Halogen 75W with Manual Switching | | Replace with 2 LED 17W Module StdElectronic | |
| Installation Cost | \$75 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$98 |
| Breakeven Cost | \$594 | Savings-to-Investment Ratio | 7.9 | Simple Payback yrs | 1 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|--|-----|---|-------|
| 4 | Hall A, Hall G, Hall H, S/L, Grand Jury | 6 FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 6 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$960 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$381 |
| Breakeven Cost | \$5,573 | Savings-to-Investment Ratio | 5.8 | Simple Payback yrs | 3 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------------------|--|-----|---|------|
| 5 | Jury Deliberation 2, | FLUOR (3) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with LED (3) 17W Module StdElectronic | |
| Installation Cost | \$240 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$94 |
| Breakeven Cost | \$1,375 | Savings-to-Investment Ratio | 5.7 | Simple Payback yrs | 3 |





| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|---|-----|--|-------|
| 6 | JS Office, Hall 3, Hearing Room 1, Court Room 2, Court Room 4, Court Room 6, | 10 FLUOR (3) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 10 LED (3) 17W Module StdElectronic | |
| Installation Cost | \$2,400 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$941 |
| Breakeven Cost | \$13,744 | Savings-to-Investment Ratio | 5.7 | Simple Payback yrs | 3 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|--|-----|---|-------|
| 7 | Customer Lobby, Clerk's Office, Security Screening, Arctic North, | 4 FLUOR (3) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 4 LED (3) 17W Module StdElectronic | |
| Installation Cost | \$960 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$268 |
| Breakeven Cost | \$3,621 | Savings-to-Investment Ratio | 3.8 | Simple Payback yrs | 4 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|----------------------------|--|-----|--|---------|
| 11 | Exterior Wall/Ceiling Pack | 25 HPS 70 Watt StdElectronic with Manual Switching | | Replace with 25 LED 17W Module StdElectronic | |
| Installation Cost | \$6,000 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$2,298 |
| Breakeven Cost | \$14,227 | Savings-to-Investment Ratio | 2.4 | Simple Payback yrs | 3 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|---|-----|--|---------|
| 12 | clerk of court reception, clerk of court, stor 100E, offices:1-7,9,11, conference 1, rr 1, attorney 1, district attorney, jury deliberation, visiting judge, judicial asst, district ct judge, jury deliberation 120 | 69 FLUOR (3) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching, Multi-Level Switch | | Replace with 69 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$11,040 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$1,811 |
| Breakeven Cost | \$24,545 | Savings-to-Investment Ratio | 2.2 | Simple Payback yrs | 6 |
| Delamping | | | | | |





| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|---|-----|--|---------|
| 13 | Hall A, Hall B, Hall C, Hall D, ASAP 110, Hall E, Hall F, Toilet 137B, Toilet 132A, Hall G, Hall H, Courtroom 5, Toilet 115A, Toilet 115B, Holding Corridor, Sound Lock 45L, 1SL, 2SL, Toilet 220A, Toilet 220B, Elevator House, Court 5 Corridor, Hall X, Hall Y, AHU 2 3 6, | 56 FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 56 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$8,960 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$1,112 |
| Breakeven Cost | \$16,253 | Savings-to-Investment Ratio | 1.8 | Simple Payback yrs | 8 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|--|-----|---|-------|
| 14 | Holding Corridor, Juvenile HC 1, HC 2, HC3, HC4, | 9 FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 9 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$1,440 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$179 |
| Breakeven Cost | \$2,612 | Savings-to-Investment Ratio | 1.8 | Simple Payback yrs | 8 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|---|-----|--|---------|
| 15 | DOL Storage, DOL Storage 2, Hall F, File #1, Reception Area, Corrections Reception, Probation Clerical, Probation Bath, Hall H, Courtroom 5, Jury Deliberation 2, Hall 3, Hearing Room 1, 1/2 SL, Court Room 2, Court Room 4, Court Room 6, AC, Law Library, Jury 102, Grand Jury, AC 104, | 72 FLUOR (3) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 72 LED (3) 17W Module StdElectronic | |
| Installation Cost | \$17,280 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$2,117 |
| Breakeven Cost | \$30,925 | Savings-to-Investment Ratio | 1.8 | Simple Payback yrs | 8 |





| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|---|-----|--|-------|
| 16 | copy room, sec/rec, conf 2, visiting attorney, DOL bath, conf 3, JS off | 24 FLUOR (3) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 24 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$3,840 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$896 |
| Breakeven Cost | \$5,411 | Savings-to-Investment Ratio | 1.4 | Simple Payback yrs | 4 |
| Delamping | | | | | |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|---|-----|--|-------|
| 17 | Women's W-1, Men's W-1, Women's HC, Men's HC, Toilet 128A, Toilet 138A, Toilet 134A, Stair 1, | 16 FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 16 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$2,560 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$226 |
| Breakeven Cost | \$3,063 | Savings-to-Investment Ratio | 1.2 | Simple Payback yrs | 11 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|--|---|-----|--|-------|
| 18 | Storage 100E, Arctic 1, Arctic 2, Office 13, 132SL, Toilet 124A, Toilet 122, Hall 100E, Hall 100C, Hall J, Hall K, S/L, Holding Corridor 217, Corridor 2, Lobby 210, Sump Room, Sump Room 2, | 28 FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 28 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$4,480 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$396 |
| Breakeven Cost | \$5,353 | Savings-to-Investment Ratio | 1.2 | Simple Payback yrs | 11 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|---|-----|--|-------|
| 19 | Jan J-1, Elect/Phone, Elev. Equip. 113, COC Storage, Mechanical Room, Phone/Data C1, Attic Access A B C D, AHU 4 5, | 33 FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with 33 LED (2) 17W Module StdElectronic | |
| Installation Cost | \$5,280 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$466 |
| Breakeven Cost | \$6,297 | Savings-to-Investment Ratio | 1.2 | Simple Payback yrs | 11 |





| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---|---|-----|---|---------|
| 20 | Clerk's Office, Customer Lobby, Courts Coord., Security Screening, Copy Area, DOL Clerical, Attorney 2, Office 13, Office 8, Office 10, Office 12, Magistrates Office, Judicial Assistant, Superior Court Judge, Judge 138, Law Clerk | 72 FLUOR (3) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching, Multi-Level Switch | | Replace with 72 LED (3) 17W Module StdElectronic | |
| Installation Cost | \$17,280 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$1,051 |
| Breakeven Cost | \$14,202 | Savings-to-Investment Ratio | 0.8 | Simple Payback yrs | 16 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|------------------|---|-----|--|------|
| 21 | Exterior Storage | FLUOR (2) T8 4' F32T8 32W Standard Instant StdElectronic with Manual Switching | | Replace with LED (2) 17W Module StdElectronic | |
| Installation Cost | \$160 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$14 |
| Breakeven Cost | \$85 | Savings-to-Investment Ratio | 0.5 | Simple Payback yrs | 11 |

A.2.2 Other Electrical Loads

Having the headbolt heaters on for the entire day is not always necessary. Installing a timer to control the headbolt heaters will help decrease energy usage. When the temperature is above 20°F all of the outlets will be off, when the temperature is between -20°F and 20°F half of the outlets will be off and rotate on half hour cycles through the day, and at below -20°F all the outlets will be on. Also, eliminating the use of two full size refrigerators with one will decrease energy usage.

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|-----------|---|-----|---|---------|
| 8 | headbolts | 16 headbolt outlets with Manual Switching | | Remove Manual Switching and Add new Clock Timer or Other Scheduling Control | |
| Installation Cost | \$4,000 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$2,187 |
| Breakeven Cost | \$13,535 | Savings-to-Investment Ratio | 3.4 | Simple Payback yrs | 2 |

| Rank | Location | Existing Condition | | Recommendation | |
|-------------------|---------------------------|---------------------------------|-----|--|-------|
| 10 | Full Size Refrigerator | 2 Full Size Refrigerator | | Replace with Full Size Refrigerator | |
| Installation Cost | \$1,690 | Estimated Life of Measure (yrs) | 7 | Energy Savings (/yr) | \$726 |
| Breakeven Cost | \$4,384 | Savings-to-Investment Ratio | 2.6 | Simple Payback yrs | 2 |



A.3 Building Envelope: Recommendations for change

A.3.1 Exterior Walls

No EEMs are recommended in this category. The cost to increase the insulation on the walls outweighs the energy savings.

A.3.2 Foundation and/or Crawlspace

No EEMs are recommended in this category. The cost to increase the insulation on the foundation outweighs the energy savings.

A.3.3 Roofing and Ceiling

No EEMs are recommended in this category. The cost to increase the insulation on the ceiling outweighs the energy savings.

A.3.4 Windows

No EEMs are recommended in this category. The cost to replace the windows with better insulated windows outweighs the energy savings.

A.3.5 Doors

No EEMs are recommended in this category. The cost to replace the doors with better insulated doors outweighs the energy savings.

A.4 Building Heating System / Air Conditioning

A.4.1 Heating and Heat Distribution

Replacing the current circulation pumps with variable speed pumps such as the Grundfos Magna pumps will decrease the electrical consumption and cost.

| Rank | Location | Existing Condition | Recommendation | | |
|-------------------|--|---------------------------------|----------------|----------------------|---------|
| 9 | grundfos ups 40-80 to Magna (\$2000),, replace two ups 40/240s to magna (\$4500) | | | | |
| Installation Cost | \$6,500 | Estimated Life of Measure (yrs) | 20 | Energy Savings (/yr) | \$1,605 |
| Breakeven Cost | \$21,686 | Savings-to-Investment Ratio | 3.3 | Simple Payback yrs | 4 |

A.4.2 Air Conditioning

The court building is not equipped with an air conditioning system. The City of Bethel is considering installing air conditioning in the building to make the summer months more comfortable. The size of these units may not need to be as large a previously thought because the recommended EEMs will significantly reduce the heating load. The Court Building currently utilizes economizer cooling with the air handlers. It is believed that the lighting heat savings will not negate the need for air conditioning but will reduce the required size, capital cost, and run time expense.

A.4.3 Ventilation

A lot of energy is needed to heat outside air to a comfortable temperature. Significant savings can be achieved by ensuring that only the necessary amount of outside air is brought into the building and heated. This can be achieved in the court building by recommissioning the HVAC system and repairing all demand control ventilation sensors and controls.

A large portion of the building energy costs involve ventilation and additional inspection is warranted to achieve all possible savings. An ASHRAE Level III Energy Audit is recommended. This involves more detailed inspection and modeling than this limited audit and would result in very specific equipment and control retrofit recommendations for the HVAC system. Additional energy savings are likely to be found with an ASHRAE Level III Energy Audit. Requesting this second audit should occur approximately one year after these retrofits are implemented and in the intervening time, all efforts to track energy usage and savings should be made.

| Rank | Location | Existing Condition | | | Recommendation | |
|-------------------|--|---------------------------------|----|----------------------|----------------|--|
| 1 | Reduce outside air to by repairing controls closing dampers (4000 CFM) | | | | | |
| Installation Cost | \$20,000 | Estimated Life of Measure (yrs) | 15 | Energy Savings (/yr) | \$43,102 | |
| Breakeven Cost | \$581,456 | Savings-to-Investment Ratio | 29 | Simple Payback yrs | 0 | |

A.4.4 Air Changes and Air Tightening

No EEMs are recommended in this area because of the difficulty of quantifying the amount of leaking air and the savings. However, by using a blower door to depressurize the building and an infra-red camera, the location of significant air leaks can be determined so they can be repaired. Several locations on the envelope in the City Shop have damage that allows heat to escape that should be repaired.



Appendix B Energy Efficiency Measures that are NOT Recommended

As indicated in other sections of the report, a number of potential EEMs were identified that were determined to be NOT cost effective by the AkWarm model. These EEMs are not currently recommended on the basis of energy savings alone because each may only save a small amount of energy, have a high capital cost, or be expensive to install. While each of these EEMs is not cost effective at this time, future changes in building use such as longer operating hours, higher energy prices, new fixtures or hardware on the market, and decreases in installation effort may make any of these EEMs cost effective in the future. These potential EEMs should be reviewed periodically to identify any changes to these factors that would warrant re-evaluation.

Although these upgrades are not currently cost effective on an energy cost basis, the fixtures, hardware, controls, or operational changes described in these EEMs should be considered when replacing an existing fixture or unit for other reasons. For example, replacing an existing window with a triple-pane window may not be cost effective based only on energy use, but if a window is going to be replaced for some other reason, then the basis for a decision is only the incremental cost of upgrading from a less efficient replacement window to a more efficient replacement window. That incremental cost difference will have a significantly shorter payback, especially since the installation costs are likely to be the same for both units.

| The following measures were not found to be cost-effective: | | | | | | |
|---|--|---|-----------------------|----------------|----------------------------------|------------------------|
| Rank | Feature/Location | Improvement Description | Annual Energy Savings | Installed Cost | Savings to Investment Ratio, SIR | Simple Payback (Years) |
| 21 | Exterior Door: Half/Full Lite Metal Foam | Remove existing door and install standard pre-hung U-0.16 insulated door, including hardware. | \$196 | \$5,672 | 0.81 | 28.9 |
| 22 | Above-Grade Wall: House | Install R-30 rigid foam board to exterior and cover with T1-11 siding or equivalent. | \$3,650 | \$129,438 | 0.66 | 35.5 |
| 23 | Lighting: Exterior Storage | Replace with LED (2) 17W Module StdElectronic | \$14 | \$160 | 0.53 | 11.3 |
| 24 | Window/Skylight: Double Alum Therm Brk >3/8 Other | Replace existing window with U-0.30 vinyl window | \$447 | \$16,829 | 0.46 | 37.7 |
| 25 | Window/Skylight: Double Alum Therm Brk >3/8: South | Replace existing window with U-0.30 vinyl window | \$248 | \$9,617 | 0.45 | 38.8 |
| 26 | Cathedral Ceiling: House | Install R-10 rigid board insulation. No cost included for covering insulation. | \$2,078 | \$127,197 | 0.38 | 61.2 |
| 27 | Window/Skylight: Double Vynil >3/8: South | Replace existing window with U-0.30 vinyl window | \$157 | \$8,819 | 0.31 | 56.1 |
| 28 | Window/Skylight: Doubel vinyl >3/8 Other | Replace existing window with U-0.30 vinyl window | \$771 | \$43,242 | 0.31 | 56.1 |





Appendix C Significant Equipment List

HVAC Equipment

| Equipment | Manufacturer | Model No. | Fuel Type | Notes |
|-------------------|--------------|-----------------|-------------|-------------------|
| Boiler | Burnham | n/a | #1 Fuel Oil | Only one boiler |
| Pump | Grundfos | UPS 40-80/4F | Electric | 1/2 HP |
| Pump | Fasco | V12508E2JAB687D | Electric | 5 HP |
| Pump | Grundfos | 40-240 | Electric | 2 Units, 1 1/8 HP |
| AHU2 supply motor | AO Smith | n/a | Electric | 2 HP |
| AHU2 return motor | Century | n/a | Electric | 1 HP |
| AHU3 supply motor | Century | n/a | Electric | 1 1/2 HP |
| AHU3 return motor | AO Smith | n/a | Electric | 1/2 HP |
| AHU4 supply motor | Century | n/a | Electric | 3 HP |
| AHU4 return motor | Marathon | n/a | Electric | 1 1/2 HP |
| AHU5 supply motor | Century | n/a | Electric | 1 1/2 HP |
| AHU5 return motor | n/a | n/a | Electric | 3/4 HP |
| AHU6 supply motor | Century | n/a | Electric | 1 1/2 HP |
| AHU6 return motor | Century | n/a | Electric | 3/4 HP |
| AHU7 motor | Century | n/a | Electric | 7 1/2 HP |
| Water Heater | American | E61 | Electric | 4.5 kw |
| Pump | Grundfos | UP 15-42 | Electric | n/a |
| Heaters | n/a | n/a | Electric | 15 units |

Lighting

| Location | Lighting Type | Bulb Type | Quantity | KWH/YR |
|---|---------------|-----------|----------|--------|
| DOL Storage, DOL Storage 2, Hall F, File #1, Reception Area, Corrections Reception, Probation Clerical, Probation Bath, Hall H, Courtroom 5, Jury Deliberation 2, Hall 3, Hearing Room 1, 1/2 SL, Court Room 2, Court Room 4, Court Room 6, AC, Law Library, Jury 102, Grand Jury, AC 104 | Fluorescent | T8 | 216 | 16,782 |
| Clerk's Office, Customer Lobby, Courts Coord., Security Screening, Copy Area, DOL Clerical, Attorney 2, Office 13, Office 8, Office 10, Office 12, Magistrates Office, Judicial Assistant, Superior Court Judge, Judge 138, Law Clerk | Fluorescent | T8 | 216 | 11,748 |
| clerk of court reception, clerk of court, stor 100E, offices:1-7,9,11, conference 1, rr 1, attorney 1, district attorney, jury deliberation, visiting judge, judicial asst, district ct judge, jury deliberation 120 | Fluorescent | T8 | 207 | 11,258 |
| Hall A, Hall B, Hall C, Hall D, ASAP 110, Hall E, Hall F, Toilet 137B, Toilet 132A, Hall G, Hall H, Courtroom 5, Toilet 115A, Toilet 115B, Holding Corridor, Sound Lock 45L, 1SL, 2SL, Toilet 220A, Toilet 220B, Elevator House, Court 5 Corridor, Hall X, Hall Y, AHU 2 3 6 | Fluorescent | T8 | 112 | 8,827 |





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| | | | | |
|---|--------------|--------|----|-------|
| JS Office, Hall 3, Hearing Room 1, Court Room 2, Court Room 4, Court Room 6 | Fluorescent | T8 | 30 | 7,549 |
| Exterior | HPS | 70W | 25 | 6,788 |
| copy room, sec/rec, conf 2, visiting attorney, DOL bath, conf 3, JS off | Fluorescent | T8 | 72 | 5,594 |
| Jan J-1, Elect/Phone, Elev. Equip. 113, COC Storage, Mechanical Room, Phone/Data C1, Attic Access A B C D, AHU 4 5 | Fluorescent | T8 | 66 | 5,202 |
| Storage 100E, Arctic 1, Arctic 2, Office 13, 132SL, Toilet 124A, Toilet 122, Hall 100E, Hall 100C, Hall J, Hall K, S/L, Holding Corridor 217, Corridor 2, Lobby 210, Sump Room, Sump Room 2 | Fluorescent | T8 | 56 | 4,414 |
| Hall A, Hall G, Hall H, S/L, Grand Jury | Fluorescent | T8 | 12 | 3,027 |
| Customer Lobby, Clerk's Office, Security Screening, Arctic North | Fluorescent | T8 | 12 | 2,984 |
| Women's W-1, Men's W-1, Women's HC, Men's HC, Toilet 128A, Toilet 138A, Toilet 134A, Stair 1 | Fluorescent | T8 | 32 | 2,522 |
| Holding Corridor, Juvenile HC 1, HC 2, HC3, HC4 | Fluorescent | T8 | 18 | 1,419 |
| Jury Deliberation 2 | Fluorescent | T8 | 3 | 746 |
| Probation Bathroom, Elevator | incandescent | A lamp | 2 | 526 |
| Office 1, Visiting Judge | incandescent | A lamp | 2 | 411 |
| Exit Sign | LED | 4W | 4 | 383 |
| Exterior Storage | Fluorescent | T8 | 2 | 158 |
| Office 1 | Fluorescent | Cfl | 1 | 74 |

Energy Consumption calculated by AkWarm based on Wattage and Schedule





Plug Loads

| Equipment | Location | Manufacturer | KWH/YR |
|-------------------------|---------------|--------------|--------|
| Headbolt Heaters | Exterior | n/a | 15255 |
| Computer Monitors | Offices | Varies | 9971 |
| IT Equipment | n/a | Varies | 9073 |
| Computer Towers | Offices | Varies | 5040 |
| Full Size Refrigerators | Breakrooms | n/a | 4174 |
| Pop Machines | Breakrooms | n/a | 4000 |
| Mini Refrigerators | Offices | n/a | 3600 |
| Water Coolers | Offices | n/a | 1710 |
| Battery Backups | Offices | n/a | 1688 |
| Laptops | Offices | n/a | 1643 |
| Elevator Hydraulic Pump | Elevator Room | n/a | 1603 |
| Desk Radios | Offices | Varies | 1578 |
| Vending Machine | Breakrooms | n/a | 1578 |
| Microwaves | Offices | Varies | 1148 |

Energy Consumption calculated by AkWarm based on Wattage and Schedule



Appendix D Local Utility Rate Structure

The information in this section was provided directly from the local utility or gathered from the local utility's publicly available information at the time of the audit. All language used in this section was provided by the local utility and believed to be current at the time of the audit. Energy use terms, specific fees, and other specific information are subject to change. Updated rate structure information should be gathered from the utility during future discussion of rates, rate structures and utility pricing agreements.

Bethel Utilities Corporation Rate Structure for March 1, 2011 bill:

| RATE TYPE | |
|----------------------------|---------------------|
| Customer Charge | \$42.93 |
| Demand Charge | \$30.02/KW |
| Energy Charge | \$0.2925/KWH |
| Power Adjustment Surcharge | \$0.0820/KWH |
| RCC | \$0.000552/KWH |
| Effective Rate | \$0.4662/KWH |

***The effective rate is all of the charges totaled together and divided by the kilowatt hour used.

Customer Charge

A flat fee that covers costs for meter reading, billing and customer service.

Utility Charge (kWh charge)

This charge is multiplied by the number of kilowatt-hours (kWh) used in a monthly billing period. It covers the costs to maintain power plants and substations, interest on loans as well as wires, power poles and transformers.

Fuel and Purchased Power

This charge is based on a combination of forecasted and actual power costs. The monthly charge allows Golden Valley to pass on increases and decreases in fuel and energy purchases to our members. It is calculated quarterly and multiplied by the kilowatt-hours used each month.

Regulatory Charge

This charge of .000492 per kWh is set by the Regulatory Commission of Alaska (RCA). Since November 1, 1992, the Regulatory Commission of Alaska has been funded by a Regulatory Charge to the utilities it regulates rather than through the State general fund. The charge, labeled "Regulatory Cost Charge." on your bill, is set by the RCA, and applies to all retail kilowatt-hours sold by regulated electric utilities in Alaska.

Appendix E Analysis Methodology

Data collected was processed using AkWarm energy use software to estimate current energy consumption by end usage and calculate energy savings for each of the proposed energy efficiency measures (EEMs). In addition, separate analysis may have been conducted to evaluate EEMs that AkWarm cannot effectively model to evaluate potential reductions in annual energy consumption. Analyses were conducted under the direct supervision of a Certified Energy Auditor, Certified Energy Manager, or a Professional Engineer.

EEMs are evaluated based on building use, maintenance and processes, local climate conditions, building construction type, function, operational schedule and existing conditions. Energy savings are calculated based on industry standard methods and engineering estimations. Each model created in AkWarm is carefully compared to existing utility usage obtained from utility bills. The AkWarm analysis provides a number of tools for assessing the cost effectiveness of various improvement options. The primary assessment value used in this audit report is the Savings/Investment Ratio (SIR). The SIR is a method of cost analysis that compares the total cost savings through reduced energy consumption to the total cost of a project over its assumed lifespan, including both the construction cost and ongoing maintenance and operating costs. Other measurement methods include Simple Payback, which is defined as the length of time it takes for the savings to equal the total installed cost and Breakeven Cost, which is defined as the highest cost that would yield a Savings/Investment Ratio of one.

EEMs are recommended by AkWarm in order of cost-effectiveness. AkWarm first calculates individual SIRs for each EEM, and then ranks the EEMs by SIR, with higher SIRs at the top of the list. An individual EEM must have a SIR greater than or equal to one in order to be recommended by AkWarm. Next AkWarm modifies the building model to include the installation of the first EEM and then re-simulates the energy use. Then the remaining EEMs are re-evaluated and ranked again. AkWarm goes through this iterative process until all suggested EEMs have been evaluated.

Under this iterative review process, the savings for each recommended EEM is calculated based on the implementation of the other, more cost effective EEMs first. Therefore, the implementation of one EEM affects the savings of other EEMs that are recommended later. The savings from any one individual EEM may be relatively higher if the individual EEM is implemented without the other recommended EEMs. For example, implementing a reduced operating schedule for inefficient lighting may result in relatively higher savings than implementing the same reduced operating schedule for newly installed lighting that is more efficient. If multiple EEMs are recommended, AkWarm calculates a combined savings.

Inclusion of recommendations for energy savings outside the capability of AkWarm will impact the actual savings from the AkWarm projections. This will almost certainly result in lower energy savings and monetary savings from AkWarm recommendations. The reality is that only so much energy is consumed in a building. Energy savings from one EEM reduces the amount of energy that can be saved from additional EEMs. For example, installation of a lower wattage light bulb does not save energy or money if the bulb is never turned on because of a schedule or operational change at the facility.



Appendix F Audit Limitations

The results of this audit are dependent on the input data provided and can only act as an approximation. In some instances, several EEMs or installation methods may achieve the identified potential savings. Actual savings will depend on the EEM selected, the price of energy, and the final installation and implementation methodology. Competent tradesmen and professional engineers may be required to design, install, or otherwise implement some of the recommended EEMs. This document is an energy use audit report and is not intended as a final design document, operation, and maintenance manual, or to take the place of any document provided by a manufacturer or installer of any device described in this report.

Cost savings are calculated based on estimated initial costs for each EEM. Estimated costs include labor and equipment for the full up-front investment required to implement the EEM. The listed installation costs within the report are conceptual budgetary estimates and should not be used as design estimates. The estimated costs are derived from Means Cost Data, industry publications, local contractors and equipment suppliers, and the professional judgment of the CEA writing the report and based on the conditions at the time of the audit.

Cost and energy savings are approximations and are not guaranteed.

Additional significant energy savings can usually be found with more detailed auditing techniques that include actual measurements of electrical use, temperatures in the building and HVAC ductwork, intake and exhaust temperatures, motor runtime and scheduling, and infrared, air leakage to name just a few. Implementation of these techniques is the difference between a Level III Energy Audit and the Level II Audit that has been conducted.



Appendix G References

Although not all documents listed below are specifically referenced in this report, each contains information and insights considered valuable to most buildings.

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- U.S. Energy Information Administration. (2006). *Commercial Building Energy Consumption Survey (CBECS)*. Retrieved 2011, from Energy Information Administration: <http://www.eia.gov/emeu/cbeecs/>

Appendix H Typical Energy Use and Cost – Fairbanks and Anchorage

This report provides data on typical energy costs and use on selected building in Fairbanks and Anchorage, Alaska for comparative purposes only. The values provided by the US Energy Information Administration CBECS study included a broader range of building types for the Continental U.S. are not necessarily good comparatives for buildings and conditions in Alaska. An assortment of values from CBECS may be found in Appendix I.

The Alaska data described in this report came from a benchmarking study NORTECH and other Technical Services Providers (TSPs) completed on publicly owned buildings in Alaska under contract with AHFC. This study acquired actual utility data for municipal buildings and schools in Alaska for the two recent full years. The utility data included costs and quantities including fuel oil, electricity, propane, wood, steam, and all other energy source usage. This resulted in a database of approximately 900 buildings. During the course of the benchmarking study, the comparisons made to the CBECS data appeared to be inappropriate for various reasons. Therefore, this energy use audit report references the average energy use and energy cost of Anchorage and Fairbanks buildings as described below.

The Alaska benchmarking data was evaluated in order to find valid comparison data. Buildings with major energy use information missing were eliminated from the data pool. After detailed scrutiny of the data, the most complete information was provided to NORTECH by the Fairbanks North Star Borough School District (FNSBSD) and the Anchorage School District (ASD). The data sets from these two sources included both the actual educational facilities as well as the district administrative buildings and these are grouped together in this report as Fairbanks and Anchorage schools. These two sources of information, being the most complete and reasonable in-state information, have been used to identify an average annual energy usage for Fairbanks and for Anchorage in order to provide a comparison for other facilities in Alaska.

Several factors may limit the comparison of a specific facility to these regional indicators. In Fairbanks, the FNSBSD generally uses number two fuel oil for heating needs and electricity is provided by Golden Valley Electric Association (GVEA). GVEA produces electricity from a coal fired generation plant with additional oil generation upon demand. A few of the FNSBSD buildings in this selection utilize district steam and hot water. The FNSBSD has recently (the last ten years) invested significantly in envelope and other efficiency upgrades to reduce their operating costs. Therefore a reader should be aware that this selection of Fairbanks buildings has energy use at or below average for the entire Alaska benchmarking database.

Heating in Anchorage is through natural gas from the nearby natural gas fields. Electricity is also provided using natural gas. As the source is nearby and the infrastructure for delivery is in place, energy costs are relatively low in the area. As a result, the ASD buildings have lower energy costs, but higher energy use, than the average for the entire benchmarking database.

These special circumstances should be considered when comparing the typical annual energy use for particular buildings.



Appendix I Typical Energy Use and Cost – Continental U.S.

| Released: Dec 2006 | | | | | | | |
|--|--------------------------------|----------------------------------|--|-------------------------------|----------------------------|--------------------------------|--------------------------|
| Next CBECS will be conducted in 2007 | | | | | | | |
| Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003 | | | | | | | |
| | All Buildings* | | | Sum of Major Fuel Consumption | | | |
| | Number of Buildings (thousand) | Floorspace (million square feet) | Floorspace per Building (thousand square feet) | Total (trillion BTU) | per Building (million BTU) | per Square Foot (thousand BTU) | per Worker (million BTU) |
| All Buildings* | 4,645 | 64,783 | 13.9 | 5,820 | 1,253 | 89.8 | 79.9 |
| Building Floorspace (Square Feet) | | | | | | | |
| 1,001 to 5,000 | 2,552 | 6,789 | 2.7 | 672 | 263 | 98.9 | 67.6 |
| 5,001 to 10,000 | 889 | 6,585 | 7.4 | 516 | 580 | 78.3 | 68.7 |
| 10,001 to 25,000 | 738 | 11,535 | 15.6 | 776 | 1,052 | 67.3 | 72.0 |
| 25,001 to 50,000 | 241 | 8,668 | 35.9 | 673 | 2,790 | 77.6 | 75.8 |
| 50,001 to 100,000 | 129 | 9,057 | 70.4 | 759 | 5,901 | 83.8 | 90.0 |
| 100,001 to 200,000 | 65 | 9,064 | 138.8 | 934 | 14,300 | 103.0 | 80.3 |
| 200,001 to 500,000 | 25 | 7,176 | 289.0 | 725 | 29,189 | 101.0 | 105.3 |
| Over 500,000 | 7 | 5,908 | 896.1 | 766 | 116,216 | 129.7 | 87.6 |
| Principal Building Activity | | | | | | | |
| Education | 386 | 9,874 | 25.6 | 820 | 2,125 | 83.1 | 65.7 |
| Food Sales | 226 | 1,255 | 5.6 | 251 | 1,110 | 199.7 | 175.2 |
| Food Service | 297 | 1,654 | 5.6 | 427 | 1,436 | 258.3 | 136.5 |
| Health Care | 129 | 3,163 | 24.6 | 594 | 4,612 | 187.7 | 94.0 |
| Inpatient | 8 | 1,905 | 241.4 | 475 | 60,152 | 249.2 | 127.7 |
| Outpatient | 121 | 1,258 | 10.4 | 119 | 985 | 94.6 | 45.8 |
| Lodging | 142 | 5,096 | 35.8 | 510 | 3,578 | 100.0 | 207.5 |
| Retail (Other Than Mall) | 443 | 4,317 | 9.7 | 319 | 720 | 73.9 | 92.1 |
| Office | 824 | 12,208 | 14.8 | 1,134 | 1,376 | 92.9 | 40.3 |
| Public Assembly | 277 | 3,939 | 14.2 | 370 | 1,338 | 93.9 | 154.5 |
| Public Order and Safety | 71 | 1,090 | 15.5 | 126 | 1,791 | 115.8 | 93.7 |
| Religious Worship | 370 | 3,754 | 10.1 | 163 | 440 | 43.5 | 95.6 |
| Service | 622 | 4,050 | 6.5 | 312 | 501 | 77.0 | 85.0 |
| Warehouse and Storage | 597 | 10,078 | 16.9 | 456 | 764 | 45.2 | 104.3 |
| Other | 79 | 1,738 | 21.9 | 286 | 3,600 | 164.4 | 157.1 |
| Vacant | 182 | 2,567 | 14.1 | 54 | 294 | 20.9 | 832.1 |

This report references the Commercial Buildings Energy Consumption Survey (CBECS), published by the U.S. Energy Information Administration in 2006. Initially this report was expected to compare the annual energy consumption of the building to average national energy usage as documented below. However, a direct comparison between one specific building and the groups of buildings outlined below yielded confusing results. Instead, this report uses a comparative analysis on Fairbanks and Anchorage data as described in Appendix F. An abbreviated excerpt from CBECS on commercial buildings in the Continental U.S. is below.





Appendix J List of Conversion Factors and Energy Units

1 British Thermal Unit is the energy required to raise one pound of water one degree
 1 Watt is approximately 3.412 BTU/hr
 1 horsepower is approximately 2,544 BTU/hr
 1 horsepower is approximately 746 Watts
 1 "ton of cooling" is 12,000 BTU/hr, the amount of power required to melt one short ton of ice in 24 hours

1 Therm = 100,000 BTU
 1 KWH = 3413 BTU
 1 KW = 3413 BTU/Hr
 1 Boiler HP = 33,400 BTU/Hr
 1 Pound Steam = 1000 BTU
 1 CCF of natural gas = about 1 Therm
 1 Pascal (Pa) = 1 inch H2O = 0.363 pounds/square inch (psi)
 1 Pascal (Pa) = 0.0025 atmospheres (atm)

BTU British Thermal Unit
 CCF 100 Cubic Feet
 CFM Cubic Feet per Minute
 GPM Gallons per minute
 HP Horsepower
 Hz Hertz
 kg Kilogram (1,000 grams)
 kV Kilovolt (1,000 volts)
 kVA Kilovolt-Amp
 kVAR Kilovolt-Amp Reactive
 KW Kilowatt (1,000 watts)
 KWH Kilowatt Hour
 V Volt
 W Watt



Appendix K List of Acronyms, Abbreviations, and Definitions

| | |
|--|--|
| ACH | Air Changes per Hour |
| AFUE | Annual Fuel Utilization Efficiency |
| Air Economizer | A duct, damper, and automatic control system that allows a cooling system to supply outside air to reduce or eliminate the need for mechanical cooling. |
| Ambient Temperature | Average temperature of the surrounding air |
| Ballast | A device used with an electric discharge lamp to cause the lamp to start and operate under the proper circuit conditions of voltage, current, electrode heat, etc. |
| CO | carbon monoxide |
| CUI | Cost Utilization Index |
| CDD | Cooling Degree Days |
| CMU | Concrete Masonry Unit |
| DDC | Direct Digital Control |
| EEM | Energy Efficiency Measure |
| EER | Energy Efficient Ratio |
| EUI | Energy Utilization Index |
| FLOUR | Fluorescent |
| Grade | The finished ground level adjoining a building at the exterior walls |
| HDD | Heating Degree Days |
| HVAC | Heating Ventilation Air-Conditioning |
| INCAN | Incandescent |
| NPV | Net Present Value |
| R-value | Thermal resistance measured in BTU/Hr-SF-F (Higher value means better insulation) |
| SCFM | Standard Cubic Feet per Minute |
| Savings to Investment Ratio (SIR) | Savings over the life of the EEM divided by Investment capital cost. Savings includes the total discounted dollar savings considered over the life of the improvement. Investment in the SIR calculation includes the labor and materials required to install the measure. |
| Set Point | Reduction of heating or cooling by changing the set point during hours when the building or space is unoccupied |
| Simple payback | A cost analysis method whereby the investment cost of an EEM is divided by the first year's savings of the EEM to give the number of years required to recover the cost of the investment. |



City of Bethel Action Memorandum

| | | | |
|-------------------------|------------|--|---------------------------------|
| Action memorandum No. | 16-04 | | |
| Date action introduced: | 01-12-2016 | Introduced by: | Mayor Robb |
| Date action taken: | | <input checked="" type="checkbox"/> Approved | <input type="checkbox"/> Denied |
| Confirmed by: | | | |

SUBJECT/ACTION: Travel Approval and Determination of two City Council Members to Attend the National League of Cities Conference March 5-9, 2016.

| Route to: | Department/Individual: | Initials: | Remarks: |
|-----------|------------------------|-----------|----------|
| X | Finance | | |
| X | City Manager | | |

| Amount of fiscal impact | | Account information: |
|----------------------------------|-------------------------|----------------------|
| Approximately \$4,000 Per Person | Funds are budgeted for. | 10-56-545 |

The National League of Cities will be hosting their annual Congressional City Conference from March 5, through March 9, 2016, in Washington DC. The Conference schedule consists of General Sessions and Workshops for local government officials. The highlight of the trip would consist of one day of meetings with Federal representatives and their staff to go over the City's priorities and needs. This is a new strategic approach for the City to help bring more federal awareness to important projects such as the City's water and sewer needs as well as property transfers through the Bureau of Indian Affairs.

It has been suggested that two council members attend the conference and work with the City Manager to strategies the meetings and the City's approach.

| | Approximate Costs |
|-----------------------------|----------------------------------|
| Airline Ticket | \$793 - \$1192 |
| Hotel Accommodations | \$1,614=tax (\$269 +tax a night) |
| Registration | \$575 |
| Per Diem Rate | \$704 (\$88 per day) |
| Total | \$ 3,686 – 4,085 |

The flights for this travel require an attendee to leave on March 3, to arrive to D.C. by the 5th.

City of Bethel Action Memorandum

| | | | |
|-------------------------|------------------|--|---------------------------------|
| Action memorandum No. | 16-05 | | |
| Date action introduced: | January 12, 2016 | Introduced by: | Mayor Robb |
| Date action taken: | | <input checked="" type="checkbox"/> Approved | <input type="checkbox"/> Denied |
| Confirmed by: | | | |

SUBJECT/ACTION:

Approve Mayor's appointment of Brian Lefferts to the Parks, Recreation, Aquatic Health and Safety Center Committee

| Route to: | Department/Individual: | Initials: | Remarks: |
|-------------------------------------|--------------------------|---|----------|
| <input checked="" type="checkbox"/> | M. Lakahni, Public Works |  | |
| | | | |

Attachment(s): None

| Amount of fiscal impact | | Account information: |
|-------------------------------------|------------------|----------------------|
| <input checked="" type="checkbox"/> | No fiscal impact | |

Action memorandum 16-05 is sponsored by the Mayor at the request of the City Clerk.

Brian Lefferts has requested appointment to the Parks, Recreation, Aquatic Health and Safety Center Committee. If appointed, he would be appointed to a term of two years as an alternate member with a term expiration of December 31, 2017.

The Parks, Recreation, Aquatic Health and Safety Center Committee currently has two alternate seats available.

City of Bethel Informative Memorandum

| | |
|----------------------------|------------------|
| Informative memorandum No. | 16-01 |
| Date presented: | January 12, 2016 |

Council Member request for an update on the Killbuck School fire

Since the last update to City Council on the Killbuck School fire – there has been some informal communication between myself and LKSD School Superintendent, Dan Walker regarding the challenges facing the School District after the devastating fire that destroyed much of the school building. In addition to this, I met with the City’s property and liability insurance provider and the City’s insurance broker to discuss the same challenges and what are the responsibilities of the City on this matter.

1. LKSD – has the claim to the insurance company (both the City and the School District are insured by the same insurance Alaska Public Entities Insurance (APEI)).
2. LKSD – will be working with APEI on a settlement – which may take up to 90 days to complete.
3. Once LKSD and the insurance company make a settlement – LKSD will announce firm plans of their intent on how to proceed with the insurance settlement.

As for the interim housing plans for both the school and dorm facilities, there are numerous discussions for the short-term and the long-term plans.

1. Several weeks ago, the School Superintendent and Members of the LKSD Board toured the City’s Senior Center to assess the possibility of renovating and using the Senior building for a combination of student dormitory and some learning center activities. The Senior center also has an excellent kitchen facility.
2. During the last Yuut Board of Directors meeting – held December 14, 2015; the School Superintendent announced a possible joint building program with the Yuut facility (see attached schematic draft).
3. For short-term (until a new facility is built) the students will be housed throughout the city. There have been discussion to house the students at the Allnivik Hotel and classroom facility to be conducted at the old closed out Swanson’s grocery store.

City of Bethel Informative Memorandum

| | |
|----------------------------|------------------|
| Informative memorandum No. | 16-01 |
| Date presented: | January 12, 2016 |

As the City Manager, I continue to offer the old Senior Center for one of the LKSD programs – but it appears that most of the housing and classroom rebuilding will depend on the insurance claim settlement.

As Council is aware, the property on which the Killbuck School was located belongs to the City of Bethel (the City of Bethel owns the whole block) and is leased by the School District. If the School District decides to opt out of the lease, the terms are prescribed within the lease.

What is crucial, if LKSD chooses to break the lease, is that this property is returned to the City in its original state, free from debris and any environmental contamination.

The City should not accept the property back without a certificate from a qualified environmental firm that states that the property is not contaminated, that the debris caused by the fire is completely removed and the properly disposed of. These concerns have been voiced by me during my meeting with APEI and with the School Superintendent.

- While the insurance settlement is taking place, the City must remain on guard to ensure that the City is made whole for the clean-up of the aftermath of the fire.
- The School District has paid for the over 250,000 gallons of water used in putting out the fire, an amount of \$15,000+.
- The City will compile other costs that were incurred as a result of the fire such as overtime that was paid mostly to Public Works, Police and Fire Department as part of the insurance claim.

As previously reported, the office of Homeland Security and Emergency Services did NOT recommend that Governor Walker consider declaration of emergency – for cost recovery, given that the entity was insured and the City did not suffer extraordinary costs.

- The City had to have the fire truck evaluated for structural safety as a result of the high heat affect on the truck.
- Hire a company to hold employee educational information sessions due to possible exposure to asbestos (as required by OSHA).

Summary: the many actions that need to be taken will depend on the insurance settlement.

Challenges and opportunities for the City will be what to do if the property is vacated?

These challenges and opportunities should be discussed by the City’s Planning Commission and City Council on perhaps some visionary opportunities for a creation of a “downtown” Bethel Town Center or a “Bethel Civic Center” with downtown shopping opportunities for a small park, outdoor performing area for public concerts, or an old fashion “town square”.

Space Allocation Legend and Totals

| | |
|--|--------------|
| ■ YE Dedicated Spaces | = 4,300 gsf |
| ■ ABE Dedicated Spaces | = 1,100 gsf |
| ■ KLA Dedicated Spaces | = 15,500 gsf |
| Shared Spaces | = 9,300 gsf |
| Support Spaces | = 1,400 gsf |



1st LEVEL FLOOR PLAN

Subtotal existing = 9,800 gsf
 Subtotal addition = 5,600 gsf
 Total 1st level = 15,400 gsf

BUILDING TOTALS

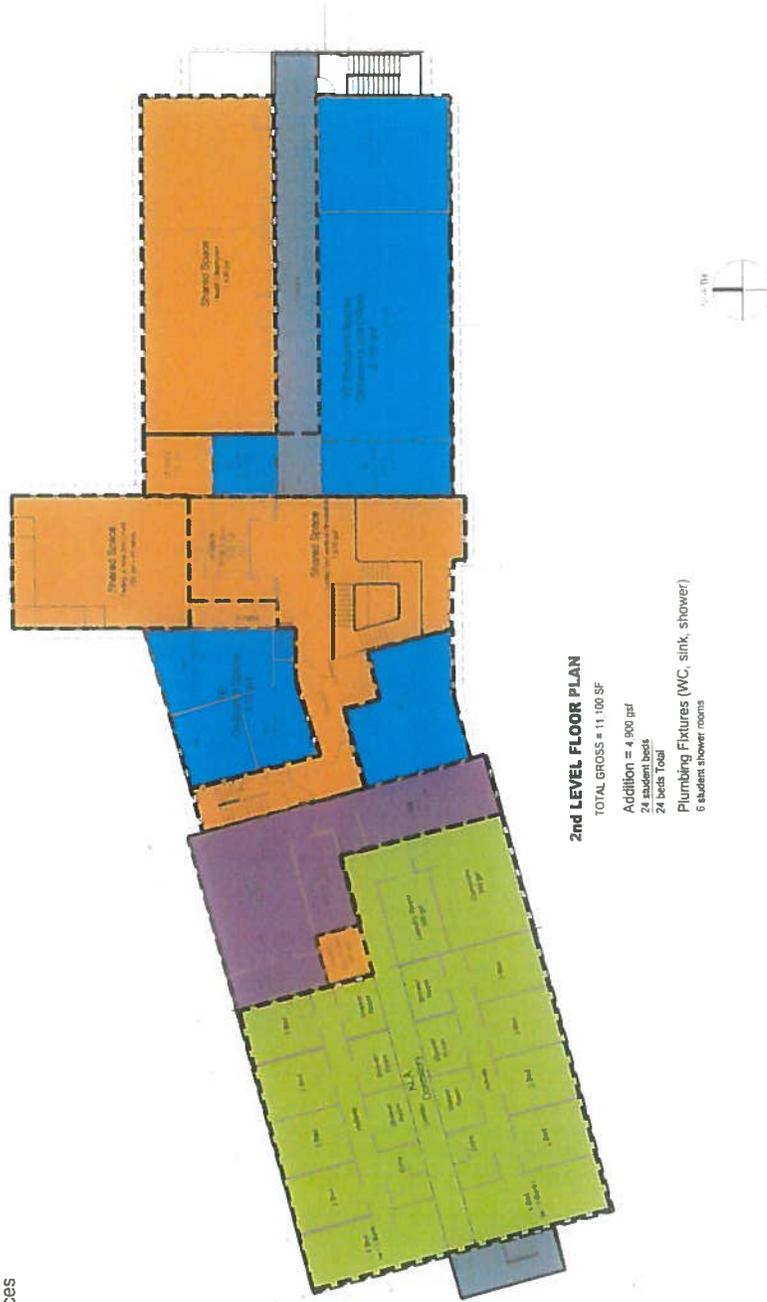
Subtotal existing = 19,300 gsf
 Subtotal addition = 6,100 gsf
 Total building = 25,400 gsf
 50 student beds (includes 2 ADA) = 5,800 gsf
 2 Dorm Parent beds (includes 1 ADA) = 670 gsf
 52 Beds Total

Yuut Eliitnaurviat, Inc.
Kuskokwim Learning Academy

TESS 1st Level Plan - Existing and Proposed
Livingston Slone, Inc.

Space Allocation Legend

- YE Dedicated Spaces
- ABE Dedicated Spaces
- KLA Dedicated Spaces
- Shared Spaces
- Support Spaces

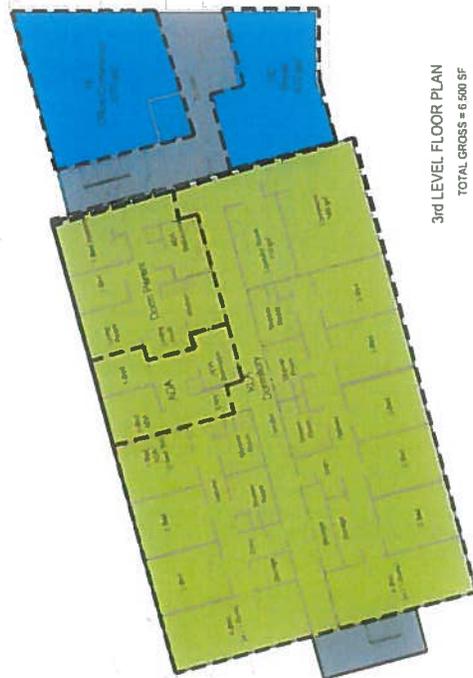


2nd LEVEL FLOOR PLAN

TOTAL GROSS = 11,100 SF
 Addition = 4,900 sqf
 24 student beds
 24 beds Total
 Plumbing Fixtures (WC, sink, shower)
 6 student shower rooms

Space Allocation Legend

- YE Dedicated Spaces
- ABE Dedicated Spaces
- KLA Dedicated Spaces
- Shared Spaces
- Support Spaces



3rd LEVEL FLOOR PLAN

TOTAL GROSS = 6 500 SF

3rd Level Addition = 4 900 sq ft
 26 student beds (includes 2 ADA)
 2 Dorm Parent beds (includes 1 ADA)
 28 Beds Total

Plumbing Fixtures (WC, sink, shower)
 6 student shower rooms (includes 1 ADA)
 1 Dorm Parent bathrooms (ADA)



City Manager's Goals – as stipulated in the CM's Employment Contract:

1. Completion of a policy and procedure manual and ~~employee handbook~~, subject to approval by City Council;
2. ~~Fill all vacant Department Head positions;~~
3. Increase staffing level to ninety (90%) percent of non-contracted budgeted fulltime and part-time employees for selected three month average;
4. Develop a plan of work for all departments. Included in the plan of work would be internal mentoring, career ladders and a plan of succession, subject to the approval by City Council; and
5. ~~Finalize the Union Contract, subject to approval by City Council.~~

City Council Goals and Capital Priorities:

Mayor's Report



Governor Bill Walker
STATE OF ALASKA

December 22, 2015

The Honorable Rick Robb
Mayor
City of Bethel
P. O. Box 1388
Bethel, AK 99559-1388

Dear Mayor Robb,

Thank you for taking the time to meet and give me a tour in early November during my trip to Bethel. I only wish my trip had been for another purpose than to witness the devastation caused by the fire at your school.

I appreciate your thoughtful gift of the book, "*Bethel The First 100 Years.*" It is a nice addition to the library, and Donna and I will enjoy reading and learning more about Bethel.

We are keeping the people and students of Bethel in our thoughts and know your community's resourcefulness and determination will make Bethel stronger and better than ever. We also send our best wishes for the holiday season from our family to yours.

Sincerely,

A handwritten signature in blue ink that reads "Bill".

Bill Walker
Governor

City Manager's Report

YKFC
United Pools Activity Report for the Month of
November 2015

This report is submitted in conjunction with the Budget Report of the same date. Of the \$1,043,893.71 of the authorized operating budget, \$384,015.95 has been spent to date. Of the \$609,200.00 projected revenues, \$245,351.32 has been generated.

Operations:

This month we were closed from the 7th – 21st for our first annual maintenance. We kept the weight room open for limited hours. Next year, I think we should close during August. I believe this would be a better time because it is a lot warmer and the barge is still running. Attached is the facility report for the time that we were open.

Maintenance:

During the facility closure we had a number of contractors come out and look at issues and possible issues the facility might face. We had a pool tech from United Pools come and help facilitate some of the work. Listed below are all the things that were addressed.

Pool

Pool Relay: November 7th

Before the closure, the pool temperature would fluctuate, causing many of the visited to leave. During the closure this issue was addressed. There is a relay that controls the temperature of the pool. This relay was bad and was replaced. This relay also controlled the chemical feeder.

Pool Pulsar Feeder: November 7th -21st

The pulsar system is the system used to feed chlorine into the pool. This system is an automated system that is support to feed chlorine only when needed. There is a valve that shuts when the chlorine level has reached the set point. This valve was not functioning causing the pulsar system to over flow. The pulsar system is still under warrant. The Pool Company send a new sensor but the sensor did not fix the issue. Because this is still under warrant they are sending Mike the guy who did the original installation to replace it on December 14th.

Pool/ Spa:

The pump room was scrubbed, all the pipes were wiped down and all the acid barrows were refilled. Also, the chlorinators were cleaned.

Pool Vacuum: November 9th

Both pool vacuums were replaced under the warrants during the pool closure by the pool company.

Pool Draining: November 9th – 11th

The pool was drained during the closure this took 3 days. As the pool was being drained we retrieved over 20 nails out of the pipes. This could be where some of the discoloration of the water is coming from. We also noticed that the pool surf was extremely bumpy. The foundation of the pool was noticeably uneven.

Pool Acid Wash: November 12-13th

After draining the pool, the pool was then acid washed using a pressure washer and muriatic acid. It took an entire day to complete. The acid was mixed at a 50 to 10 ratio with water. There were lots of strains on the bottom and the walks of the pool

from when the pool was originally filled. After pressure washing the pool all the strains were removed including the discoloration of the main drains.

Spa Draining:

The spa was drained during the closure.

Pool/ Spa refill: 13th-21st

The pool and spa were both refilled during the closure. They were both filled using city water. It took almost two days for the pool to refill. As the water refilled in both, the water was a greenish brown. This is caused by metals in the water. In order to filter out the metals, we used 15, 32oz bottles of metal out in the pool. Metal out is used to remove metals from the pool when the pumps are running. Then we waited a day to see if the water would change. The water was still green turned off the circulation pumps, and added 8, 32oz bottles of Drop Out to the pool. Drop out is used to drop particles to the bottom of the pool for easy removal. After adding Drop Out you have to wait 3 days in order to turn back on the circulation pumps. After the 3 days was up the pool was still a shade of green but after 2 more days of the pool circulating the pool was crystal clear. The spa did not turn green after it was refilled. After two days of being refilled and being crystal clear, the spa turned a dark brown. After 2 hours it was back crystal clear. During this time period the pumps were running and the chlorine level was at a 4.5ppm.

Pool Deck pressure washed: 17th -18th

The pool deck and the viewing all were pressure washed. The deck was washed with water.

Pool Deck Blinds:

On the pool deck there are two sets of blinds but there are a total of 7 windows. There are three windows in the viewing area and 4 double windows running down the back wall of the natatorium. I think we need to get binders for all the windows. It is hard for the lifeguards to see when the sun is out and it can also help to maintain the chlorine level during the day if there were blinds around the pool. Also, when we have movie night you can't see the movies due to the glare from the sun.

Building Cable:

During the closure I was asked what we used the Smart TV's for and I told them advertisement. It was suggested that we play the football and basketball games on them to increase revenue on the weekends. The only thing we need to do is to run a line to the TV in the concessions area and one on the pool deck. I think this is a great idea, because we could also watch the ball drop on New Year's on the TV.

Locker rooms/Restrooms:

During the closure the locker rooms were acid washed. The water in the showers started to cause brown buildup on the walls. We used acid to remove all the buildup on the floors, walls and in the showers. After we acid washed the locker rooms we also pressure washed them along with the restrooms. There were a few loose lockers so all the lockers were tightened. Also, I think it would be a good idea to have benches placed in the lockers so that people can use them when they change. Right now we have benches that are attached to the lockers but it is hard to use them without getting hit in the head by someone opening their locker.

Air Handlers:

MSI came out during the closure and changed the filters on the air handlers system. They also, vacuumed all the vents in the building, the buildup is what causes it to get extremely dusty in some of the rooms.

Boilers:

One of the problems we were facing before we closed is that one of the boilers kept going into alarm. During the closure MSI was able to spend a lot of time trouble shooting the problem. Boiler 1 and Boiler 2 were both serviced. They changed a fuse in Boiler 1 and change nylon couplers in boilers 1 & 2.

Building Camera:

Building cameras were refocused. I also tried to see how I could go about getting the program on my computer. I was told there is a way but I need to get the permissions from the city. The problem right now is we have a camera system that is on one side of the building and the offices are on the other side of the building. We can't monitor the cameras like intended.

Building Storage:

During the closure all of the closets were reorganized as well as the cabinets. There is a closet in the hallway that stores all of the pro-shop items. This closet needs shelves in order to organize the inventory properly. The closet was reorganized but we could still use more shelves. We also reorganized the fitness room closet which also needs wall shelving in order to keep the room neat. During the closure we tried to eliminate as much as we could in the generator room. The problem is that these are things we use regularly and need storage space in the building. After doing several walk through of the building I found some areas in which we could store the items but we need wall shelving in order to do so.

Water Filter:

At the facility there is a water/ ice machine. The water that comes out of the machine is unfiltered. I think it would be a good idea to add a filter to the line.

Weight Room:

Alaska Fitness came out during the closure and set up a spin bike in the weight room and also installed rubber flooring. After installing the floor we noticed we didn't have enough to cover the entire floor. I think we need to purchase more rubber floor to at least cover the front half of the weight room. The front half of the weight room is the area in which lifters use the free weights and weight bars. Also, we have had lots of customers ask if we could get some leg straps for the Paramount XFT 300. As well as a swat rack.

Fitness Room:

Inside the fitness room we have bamboo flooring. Bamboo is not your ideal flooring for spin classes or anything of that nature, because the room is used for dance and for spin. There are now permanent marks on the floor. I think we need to get a covering for the floor. I asked Alaska fitness for suggestions. They will be emailing me a list. Also, we have started a boxing class but we do not have punching bags or speed bags. There have been lots of people try the class but they haven't continued because they wanted to use the bags.

In Conclusion, for the first pool closure we got a lot accomplished. The pool and spa were drained and refilled. The building was pressure washed. The pool, spa and bathroom were acid washed. The chlorinators in both the pool and spa were serviced. The temperature relay in the pool was repaired. The pool company addressed and acknowledged they have some warranty work they need to fix. The Pool Company also agreed to come back in December to finish the warranty work that was not completed during the closure. MSI came and serviced the boilers. Redi Electrics subcontractor fixed the camera. Redi Electric also sent one of the electricians to check the breakers in the building. Alaska Fitness came and installed a spin bike and rubber flooring. We learned a lot from this closure and I think next year the pool should conduct annual maintenance during August. This way we can utilize the barge if we need to.

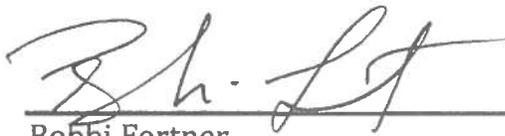
Programming:

For the month of November YK Fitness Center had the yearly scheduled maintenance done through the building. Due to our scheduled maintenance we had to close the facility own for a short period of time. We reopened November 22 and had all regular scheduled programs and classes running.

Outreach:

During our maintenance period we still continued to run our after school program for kids.

Certified by:



Bobbi Fortner

Title

12/10/15

Date

YKFC Revenue and Expense - Budget Report for November 2015
 Operating Budget July 1, 2015 - June 30, 2016

| | Estimate, 12 months | | | | | | | | | | | | Budget | |
|---|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------|----------|-------|-------|-----|------|----------------------|----------------------|
| | July | August | September | October | November | December | January | February | March | April | May | June | Totals | Variance |
| Revenues, | | | | | | | | | | | | | | |
| Entry Fees | \$ 336,000.00 | \$ 19,834.00 | \$ 13,295.13 | \$ 17,096.13 | \$ 60,768.00 | \$ 71,405.78 | | | | | | | \$ 182,399.04 | \$ 153,600.96 |
| Facility Rental | \$ 15,000.00 | \$ 582.50 | \$ 352.50 | \$ 1,047.00 | \$ 437.50 | \$ 75.00 | | | | | | | \$ 2,494.50 | \$ 12,505.50 |
| Program Fees | \$ 141,200.00 | \$ 6,205.00 | \$ 5,153.00 | \$ 4,608.40 | \$ 7,216.60 | \$ 736.69 | | | | | | | \$ 23,919.69 | \$ 117,280.31 |
| Concessions Revenue | \$ 69,000.00 | \$ 5,394.34 | \$ 3,150.95 | \$ 3,016.10 | \$ 3,977.42 | \$ 3,277.00 | | | | | | | \$ 18,815.81 | \$ 50,184.19 |
| Pro-shop Revenue | \$ 48,000.00 | \$ 4,479.25 | \$ 2,270.34 | \$ 2,403.41 | \$ 4,056.25 | \$ 4,513.03 | | | | | | | \$ 17,722.28 | \$ 30,277.72 |
| Total Revenues (Collected by United Pools, expense offset) | \$ 609,200.00 | \$ 36,495.09 | \$ 24,221.92 | \$ 28,171.04 | \$ 76,455.77 | \$ 80,007.50 | | | | | | | \$ 245,351.32 | \$ 363,848.68 |
| Expenses | | | | | | | | | | | | | | |
| Fixed Fee | \$ 140,200.08 | \$ 11,683.34 | \$ 11,683.34 | \$ 11,683.34 | \$ 11,683.34 | \$ 11,683.34 | | | | | | | \$ 58,416.70 | \$ 81,783.38 |
| Facility & Program Director | \$ 135,000.00 | \$ 7,312.50 | \$ 14,625.00 | \$ 22,437.50 | \$ 17,198.75 | | | | | | | | \$ 61,573.75 | \$ 73,426.25 |
| Lifeguard Labor | \$ 187,258.50 | \$ 5,928.56 | \$ 12,821.84 | \$ 15,975.92 | \$ 17,081.24 | | | | | | | | \$ 51,807.56 | \$ 135,450.94 |
| Customer Service Representative Labor | \$ 84,481.50 | \$ 5,390.59 | \$ 10,265.32 | \$ 10,022.89 | \$ 10,889.89 | | | | | | | | \$ 36,568.69 | \$ 47,912.81 |
| Cleaners Labor | \$ 68,440.00 | \$ 1,565.74 | \$ 3,439.06 | \$ 3,176.76 | \$ 6,290.76 | | | | | | | | \$ 14,472.32 | \$ 53,967.68 |
| Pre-Post Cleaning of YKFC | \$ 14,053.00 | | | | | | | | | | | | \$ - | \$ 14,053.00 |
| Staff Meetings | \$ 2,200.00 | | | | | | | | | | | | \$ - | \$ 2,200.00 |
| Aquatics Programs Labor | \$ 19,250.00 | \$ 462.00 | | \$ 1,314.00 | \$ 1,221.00 | | | | | | | | \$ 2,997.00 | \$ 16,253.00 |
| Fitness Programs Labor | \$ 8,250.00 | | | | | | | | | | | | \$ - | \$ 8,250.00 |
| Payroll Taxes | \$ 57,082.63 | \$ 2,079.26 | \$ 4,163.05 | | \$ 10,477.42 | | | | | | | | \$ 16,719.73 | \$ 40,362.90 |
| Insurance - Workman's Compensation | \$ 32,000.00 | | | | \$ 15,548.00 | | | | | | | | \$ 15,548.00 | \$ 16,452.00 |
| Cost of Living Adjustment | \$ 36,000.00 | \$ 3,000.00 | \$ 3,000.00 | \$ 3,000.00 | \$ 3,000.00 | | | | | | | | \$ 15,000.00 | \$ 21,000.00 |
| Benefits | \$ 7,800.00 | \$ 650.00 | \$ 650.00 | \$ 1,400.00 | \$ 550.00 | | | | | | | | \$ 3,250.00 | \$ 4,550.00 |
| Bank Fees | \$ 13,000.00 | \$ 915.21 | \$ 758.57 | \$ 626.51 | \$ 2,285.10 | | | | | | | | \$ 4,585.39 | \$ 8,414.61 |
| Advertising/Marketing Exp | \$ 10,000.00 | \$ 728.24 | \$ 2,186.27 | | \$ 35.00 | | | | | | | | \$ 2,949.51 | \$ 7,050.49 |
| Sub-Contractor Cost, Maint | \$ 35,790.00 | | \$ 6,905.10 | | | | | | | | | | \$ 6,905.10 | \$ 28,884.90 |
| Building Maintenance | \$ 3,300.00 | | | | | | | | | | | | \$ - | \$ 3,300.00 |
| Contingency Reserve | | | | | | | | | | | | | \$ - | \$ 5,600.00 |
| Exercise Preventive Equipment Maintenance | \$ 5,600.00 | | | | | | | | | | | | \$ 5,546.09 | \$ (546.09) |
| Pool/Building Supplies Cost | \$ 5,000.00 | \$ 4,308.25 | \$ 267.83 | | \$ 970.01 | | | | | | | | \$ 20,356.96 | \$ 6,143.04 |
| Chemical Supplies Cost | \$ 26,500.00 | \$ 15,435.65 | \$ 4,921.31 | | | | | | | | | | \$ 13,358.93 | \$ 8,641.07 |
| Paper and Cleaning Products | \$ 22,000.00 | \$ 13,272.45 | \$ 47.58 | | \$ 38.90 | | | | | | | | \$ 1,973.26 | \$ 3,806.74 |
| Point of Sale Use Fee | \$ 5,780.00 | \$ 388.40 | \$ 349.45 | \$ 599.76 | \$ 635.65 | | | | | | | | \$ 806.04 | \$ 8,193.96 |
| Office Supplies Expense | \$ 9,000.00 | \$ 806.04 | | | | | | | | | | | \$ 690.35 | \$ 309.65 |
| Postage Expense | \$ 1,000.00 | | | | \$ 615.09 | \$ 75.26 | | | | | | | \$ 588.69 | \$ 911.31 |
| Unforeseen Expense | \$ 1,500.00 | | | | | | | | | | | | \$ - | \$ 1,500.00 |
| Fitness Items | \$ 1,500.00 | | | | | | | | | | | | \$ - | \$ 1,500.00 |
| Aquatics Program Items | \$ 2,500.00 | \$ 595.00 | \$ 3,040.25 | | | | | | | | | | \$ 3,635.25 | \$ (1,135.25) |
| Concession Items | \$ 42,000.00 | \$ 3,107.80 | \$ 2,921.64 | | \$ 5,785.57 | | | | | | | | \$ 11,815.01 | \$ 30,184.99 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|------------------------|---------------------|---------------------|---------------------|---------------------|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|----------------------|
| Pro-shop Items | \$ 32,000.00 | \$ 17,575.76 | \$ 374.50 | | | | | | | | | | | | | | | | | \$ 17,950.26 | \$ 14,049.74 |
| Auto Fuel Expense | \$ 3,000.00 | \$ 472.61 | \$ 339.18 | | | | | | | | | | | | | | | | | \$ 1,480.27 | \$ 1,519.73 |
| Auto Maintenance Expense | \$ 1,000.00 | | | | | | | | | | | | | | | | | | | \$ - | \$ 1,000.00 |
| Auto Insurance Expense | \$ 2,500.00 | | | | | | | | | | | | | | | | | | | \$ 2,500.00 | \$ - |
| Insurance Fidelity | | | | | | | | | | | | | | | | | | | | | |
| Bond/Umbrella Policy | \$ 7,000.00 | | | | | | | | | | | | | | | | | | | \$ - | \$ 7,000.00 |
| Cable TV | \$ 1,908.00 | \$ 143.88 | \$ 143.88 | | | | | | | | | | | | | | | | | \$ 719.40 | \$ 1,188.60 |
| Shipping | \$ 20,000.00 | \$ 1,228.12 | \$ 9,797.38 | | | | | | | | | | | | | | | | | \$ 11,801.69 | \$ 8,198.31 |
| Holding Money | \$ 50,000.00 | \$ 50,000.00 | | | | | | | | | | | | | | | | | | \$ 50,000.00 | \$ - |
| Total Expenses, Operating Budget | \$ 1,043,893.71 | \$ 96,587.40 | \$ 99,162.55 | \$ 11,683.34 | \$ 75,190.32 | \$ 107,992.34 | \$ - | \$ 384,015.95 | \$ 659,877.76 |

date printed 12/10/15

Treadmill Stats

Listed below are the stats for the treadmills.

10-25-2014 – 11-10-2015

| Treadmill # | Miles | HPS | User |
|-------------|-------|-----|-------|
| 1 | 3,750 | 853 | 2,390 |
| 2 | 2,585 | 604 | 1,588 |
| 3 | 2,668 | 592 | 1,589 |
| 4 | 1,930 | 430 | 1,345 |
| 5 | 2,005 | 476 | 1,433 |
| 6 | 2,707 | 639 | 1,889 |

Treadmills are listed from left to right

| Room | Time | Sun | Tues | Wed | Thur | Fri | Sat | Sun | Tues | Wed | Thur | Fri | Sat | Sun | Tues | Wed | Thur | Fri | Sat | Sun | Tues | Wed | Thur | Fri | Sat | Sun | Hourly |
|-------------|---------|-----|------|-----|------|-----|-----|-----|------|-----|------|-----|-----|-----|------|-----|------|-----|-----|-----|------|-----|------|-----|-----|-----|--------|
| | | 1 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 11 | 12 | 13 | 14 | 15 | 17 | 18 | 19 | 20 | 21 | 22 | 24 | 25 | 26 | 27 | 28 | 29 | Total |
| Pool | 6:00am | | | 1 | 1 | 1 | 0 | | | | | | | | | | | | | | | | | | | | 11 |
| Weight | 6:00am | | | 2 | 0 | 0 | 2 | | | | | | | | | | | | | | | | | | | | 13 |
| Pool | 6:30am | | | 1 | 2 | 2 | 4 | | | | | | | | | | | | | | | | | | | | 16 |
| Weight | 6:30am | | | 2 | 3 | 3 | 2 | | | | | | | | | | | | | | | | | | | | 23 |
| Pool | 7:00am | | | 0 | 0 | 0 | 1 | | | | | | | | | | | | | | | | | | | | 5 |
| Weight | 7:00am | | | 1 | 3 | 2 | 4 | | | | | | | | | | | | | | | | | | | | 21 |
| Pool | 8:00am | | | 0 | 1 | 0 | 0 | | | | | | | | | | | | | | | | | | | | 6 |
| Weight | 8:00am | | | 1 | 2 | 2 | 5 | | | | | | | | | | | | | | | | | | | | 13 |
| Pool | 9:00am | | | 4 | 3 | 2 | 5 | | | | | | | | | | | | | | | | | | | | 38 |
| Weight | 9:00am | | | 0 | 3 | 0 | 4 | | | | | | | | | | | | | | | | | | | | 27 |
| Pool | 10:00am | | | 2 | 6 | 1 | 1 | 5 | | | | | | | | | | | | | | | | | | | 46 |
| Weight | 10:00am | | | 6 | 13 | 2 | 11 | 2 | | | | | | | | | | | | | | | | | | | 49 |
| Pool | 11:00am | | | 0 | 3 | 0 | 2 | 12 | | | | | | | | | | | | | | | | | | | 66 |
| Weight | 11:00am | | | 6 | 3 | 1 | 1 | 4 | | | | | | | | | | | | | | | | | | | 27 |
| Pool | 12:00pm | | | 2 | 15 | 1 | 1 | 8 | | | | | | | | | | | | | | | | | | | 84 |
| Weight | 12:00pm | | | 5 | 4 | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | 35 |
| Pool | 1:00pm | | | 12 | 25 | 12 | 14 | 8 | | | | | | | | | | | | | | | | | | | 163 |
| Weight | 1:00pm | | | 3 | 3 | 1 | 0 | 5 | | | | | | | | | | | | | | | | | | | 31 |
| Pool | 2:00pm | | | 24 | 25 | 12 | 11 | 10 | | | | | | | | | | | | | | | | | | | 232 |
| Weight | 2:00pm | | | 5 | 0 | 1 | 0 | 3 | | | | | | | | | | | | | | | | | | | 35 |
| Pool | 3:00pm | | | 31 | 0 | 0 | 3 | 6 | | | | | | | | | | | | | | | | | | | 142 |
| Weight | 3:00pm | | | 4 | 3 | 3 | 0 | 6 | | | | | | | | | | | | | | | | | | | 43 |
| Pool | 4:00pm | | | 55 | 0 | 15 | 7 | 11 | | | | | | | | | | | | | | | | | | | 261 |
| Weight | 4:00pm | | | 9 | 4 | 0 | 5 | 1 | 9 | 6 | | | | | | | | | | | | | | | | | 90 |
| Pool | 5:00pm | | | 45 | 9 | 19 | 10 | 12 | | | | | | | | | | | | | | | | | | | 291 |
| Weight | 5:00pm | | | 11 | 15 | 3 | 7 | 8 | 11 | | | | | | | | | | | | | | | | | | 145 |
| Pool | 6:00pm | | | 53 | 8 | 8 | 19 | | | | | | | | | | | | | | | | | | | | 233 |
| Weight | 6:00pm | | | 8 | 11 | 10 | 11 | 14 | 2 | 3 | | | | | | | | | | | | | | | | | 164 |
| Pool | 7:00pm | | | 35 | 8 | 8 | 46 | | | | | | | | | | | | | | | | | | | | 202 |
| Weight | 7:00pm | | | 11 | 13 | 12 | 13 | 7 | 3 | 4 | | | | | | | | | | | | | | | | | 163 |
| Pool | 8:00pm | | | 29 | 12 | | | 30 | | | | | | | | | | | | | | | | | | | 126 |
| Weight | 8:00pm | | | 7 | 9 | 6 | 9 | 9 | 2 | 4 | | | | | | | | | | | | | | | | | 80 |
| Pool | 8:30pm | | | 0 | 0 | 0 | | 13 | | | | | | | | | | | | | | | | | | | 45 |
| Weight | 8:30pm | | | 0 | 5 | 4 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | 21 |
| Pool | 9:00pm | | | 0 | 2 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | 7 |
| Weight | 9:00pm | | | 0 | 2 | 0 | 0 | 0 | | | | | | | | | | | | | | | | | | | 7 |
| Daily Total | | 363 | 208 | 130 | 120 | 280 | 24 | 28 | 8 | 21 | 16 | 34 | 46 | 30 | 33 | 15 | 28 | 202 | 234 | 243 | 331 | 319 | 317 | | | | |

Management Team Reports

To: Ann Capela, City Manager
From: Ted Meyer, Planner
Subject: December, 2015 Activity Report
Date: Jan 4, 2016

Planning Program Orientation

Since taking the position, I've been reading the BMC and other documents on a daily basis. Betsy has been a great help in my orientation.

Site Plan Permit Applications

Developed a new Section 2 of the Site Plan Application for relocating buildings on local, non-State roads. This section has similar questions asked on the State application and ensures the applicant has a contractor license and insurance.

Reviewed a site plan application for relocating a building and found that the placement of the building would cross over a property line. Currently working with the owner of the two properties to do a replat before the building relocation takes place.

Right-of-Way Issue

I've met with the Moravian Church and will do so again tomorrow regarding their complaint of 4-wheelers using the boardwalk (and ROW) that cuts through the rear of their property. I'll offer them alternatives for them to consider in tomorrow's meeting.

Code Enforcement

We've had several complaints about vehicles blocking snow removal operations and abandoned cars. I'm currently reviewing procedures to mitigate.

Cell Tower Survey

I'm currently working with Betsy to identify and inventory all cell towers in the city limits and locate on a city map as well. We plan to start the windshield survey on Jan 8. Until we purchase a GPS, we'll have to rely on an "eyeball survey" and approximate the locations on a Google Earth image.

Mapping

I've been reviewing existing digital base mapping in the office in order to support several planned GIS applications:

1. New zoning activities (Larson and Kasayulie Subdivisions)
2. Cell tower mapping
3. Alcohol and Marijuana appropriate distance from sensitive land use
4. Land use mapping
5. Address updates

Developing a needs list for each application and a plan to implement.

Blue Sky Subdivision

I've been reviewing most of the documentation regarding past activities of the planned subdivision. Met with the contactor to begin discussions.

PORT OF BETHEL

Post Office Box 1388
Bethel, Alaska 99559
Voice: 907-543-2310
Fax: 907-543-2311



TO: Ann Capela
FROM: Peter A. Williams- Port Director
SUBJECT: December, 2015 Managers Report
Out of the office Dec.28, 2015 to Jan.9, 2016

PORT ADMINISTRATION ACTION ITEMS AND ACTIVITIES

- **SMALL BOAT HARBOR-** We have begun installing mixed sand and rock for the base of the access road to the temporary landfill used for the dredged tailings from the SBH. We should be finish with this at the end of Dec. There might be a chance that it will provide access to the abandon vessels that are in the area.
- **Active/Jung Parcels-**There has been no update on the Jung since we heard that the property was in the process of being sold.
The Active brothers need to sign the survey of their subdivided parcels before we move to the next step of having the parcels appraised. The Actives could fence off, are threatening to do so, on a parcel at 178 East Ave that they own adjoining the old Yukon Lodge. This will effectively block Lind Ave from being used by the water and sewer trucks. Lind Ave is platted trough the front yard of 200 East Ave. The yard has items that will have to be removed before vehicles could use Lind Road.162 Lind is affected also but the homeowner is aware of the problem and is ready to vacate if need be. The City has been in trespass for a number of years.
- **Port Shop-**251 East Ave- The planning Comm. and Port Comm. recommended that the Port use this building for the Maintantance and repair of the Ports vehicles and equipment. We have manually reviewed the revenues at the Port office and we are on track to achieve the budgeted amounts. We are keeping track of our revenues also. Electrical work needs to be completed but will have to wait till a budget mod is submitted or the next budget cycle. Finance Director will have a budget mod for councils consideration in February 2016.
- **FY-15 Budget-** Reviewed our projected revenues and expenses. It doesn't appear that the Revenues are being posted so we can compare Revenues' to the Budgeted amounts. We have manually reviewed the revenues and we are on track to achieve the budgeted amounts. We are keeping track of our Expenditures.

- **FY-17 Budget-** Will begin to work on the next year's budget in Jan.
- **Port Office-** RFP for a project manager for a new building went out Dec 21,2015 and are due back too the Finance Dept.Jan.18,2016.
- **Affiliated Appraisers-**Physically reviewed the parcels at 251 E. Ave., warehouse on the City Dock and 110 Oscar Way too determine a fair market value of those properties. It appears at first glance that the warehouse lease was very favorable for the City/Port.
- **Terminal Tariff No. 4-** A fair amount of verbiage was updated and the wharfage rates were increased 10%. The Port Comm. reviewed the changes and made a favorable recommendation to Council. The Tariff was sent to the City Attorney for review.
- **BMC chapter 14-** 14.02 and 14.03; 14.04 and 14.08 was reviewed by the Port Comm. and changes made on Dec 18th. On Feb 15th the Port Comm. will review Sections 14.04;14.08 again with the propose changes.
- **Personnel/Operations-** Seclude for the Jan. and Feb is for 2hrs.of training in the morning using Target Solutions on-line training modules for handling Hazardous Materials. The next four hours working on the access road at the SBH or repairing the mooring floats for the SBH. One float is in position to begin work on. The 950E loader, dump truck and tires changed on most vehicles. The last two hours of the day are being used to pick up the mail, packages and quarters from the pump house, reliving the Finance Dept of this chore.
- **Tec-Pro-** The electrical contractor has been using a Port vehicle when they are in town. We are also providing them a place to store materials. This should help all Depts. Save on costs.

-



CITY OF BETHEL
Fire Department

William F. Howell III, Fire Chief
P.O. Box 1388, Bethel, Alaska 99559
Phone: (907)-543-2131
Fax: (907)-543-2702
bhowell@cityofbethel.net

Celebrating 50 Years of Service

DATE: January 4, 2015
TO: Ann Capella, City Manager
FROM: Bill Howell, Fire Chief
SUBJECT: December 2015 Management Report

Current Events

- Run tallies for 2015 are complete. The Department responded to 1182 EMS calls for service and 168 fire responses in 2015. Fire and EMS responses for 2015 are at the highest level recorded in the last 20 years. Of note is the sharp increase in alcohol related calls (over 50%) in 2014 and 2015.
- Preparations are ongoing for an EMT 2-3 initial and refresher training January 4 through 15. EMT 2's and 3's provide advanced life support as members of our community ambulance squad. This class is being offered to volunteers and staff of the department.
- The Fire Chief was acting City Manager, December 17th through January 4th.
- The Department will be hosting its annual fireworks display on New Year's Eve (Dec 31) at 8 p.m. The Bethel Volunteer Emergency Services assn. and VFW post 10041 have worked very hard to make this event possible. All are welcome to attend.
- Our annual holiday party was held on December 12th. Life saver awards were given to department EMT's that responded to and helped revive a patient in cardiac arrest. The attendance of one of the "saved" made this year's event a real treat.

Emergency Planning/Homeland Security

- The Department continues to work with DHS to schedule delivery of an ICS 300 in Bethel. Dates for the class will be announce soon.
- We are conducting final review of the Community Emergency operations plan.

Responses

- The Bethel Fire Department responded to 117 EMS and 10 Fire incidents during the month of December.
- On 12-4-15 at 7:43 p.m. medics responded to the river around Crowley for the report of a snowmobile accident. On arrival medics assessed and transported two patients to the hospital.
- On 12-20-15 at 4:15 p.m. medics responded to Standard Oil Road for the report of a person who was suicidal on the river. The patient was transported back to town by Bethel Search & Rescue, Bethel Police Department Officers, and Alaska State Troopers. The patient was assessed and transported to the hospital.
- On 12/23/15 at 1:53 p.m. medics responded to Larson Subdivision for the report of a vehicle rollover. One patient was assessed and transported to the hospital.
- On 12/24/15 at 3:21 a.m. firefighters responded to East Avenue for the report of a structure fire. Upon arrival, firefighters extinguished a smoldering fire and removed one person from the residence. Firefighters overhauled the contents, gathered information, and returned to quarters.
- On 12/28/15 at 6:33 p.m. medics responded to Alaska State Trooper Housing for the report of a gunshot wound. The scene, a death investigation, was left in custody of the Alaska State Troopers and Bethel Police Department.

Staffing/recruitment

- All positions are filled.
- The Department has one FF/EMT position that was defunded FY 15. We will be seeking grant and city funding to fill this position and at least one new position in anticipation of liquor stores operating in the community.
- The Department is drafting a hiring list for future vacancies and new positions. The Department is recruiting nationally at this time.

Training

- On 12/01/15 at 7:00 p.m. an EMT Meeting was held at the Fire Department. Responders set up practical skill stations to help prepare the EMT-1 students for their State of Alaska Practical Skills Examinations on 12/05/15.
- On December 2nd and 3rd eight department personnel were trained and certified by representatives certified in SCBA maintenance on our new SCBA.
- On 12/04/15 and 12/05/15, the EMT-1 students completed their State of Alaska EMT-1 Written and Practical Skills Examinations for certification. The course will yield seven new EMT-1 responders to our roster.
- On 12/10/15 at 7:00 p.m. a Fire Meeting was held at the Fire Department. Responders reviewed Rapid Intervention Crew techniques and practiced deploying and re-loading fire attack hose.
- On 12/15/15 at 7:00 p.m. an EMT Meeting was held at the Fire Department. Responders reviewed behavioral emergencies and placing patients who endanger themselves or others into medical restraints.
- On 12/19/15 at 9:00 a.m. EMT personnel participated in a Basic Life Support CPR refresher course for their upcoming EMT-2 and EMT-3 classes in January 2016.
- Captain Solesbee is coordinating with the Firefighter-1 students who need refresher training in order to take the State of Alaska Firefighter-1 and Hazardous Materials Awareness/Operations written examinations.

Vehicles & Equipment

- The Departments 1992 F-150 had a major engine failure this month and is at the V&E department. This vehicle will likely not be repaired any further. The department now has two utility vehicles that are functioning as plow and response vehicles.
- M5 had oil leaks and an engine issue repaired this month and is back in service.
- Underwriters Laboratories (UL) visited us on the 1st of December to test the Department's 1980 ladder truck. Although thermal damage was evident to the vehicle, no structural damage was evident. Cost of replacement for a vehicle of this type is around \$500,000.00.
- A work order has been put in to V&E to repair stuck valves and leaking pump packing's on E-3.
- New tires were installed on M-4.

Budget/Financial

- The Department is operating within FY16 budget guidelines.
- Unanticipated costs for Ladder truck testing and Asbestos training following the Kilbuck Fire from our purchased services account is a point of concern. We will be closely watching this fund.

Grants

- All Grants are operating within allotted timelines.
- The Department is applying for funding through the 2015 FEMA Assistance to Firefighters Grant Program. We seek funding to replace aged turnout gear and firefighting tools.
- Reimbursement requests were made for federal cost share under the 2013 FEMA Assistance to Firefighters Grant for Self Contained Breathing Apparatus. We are coordinating payment of invoices, final reports and close out documents with the Finance Department and FEMA.
- Final Purchases are being made with excess funds under the Alaska Volunteer Fire Assistance (VFA) grant program. We will file close out reports once purchases are complete.



CITY OF BETHEL

Post Office Box 1388
Bethel, Alaska 99559
Phone: 907-543-2047

TO: City Manager
FROM: Human Resources
SUBJECT: December 2015 Manager Report

DATE: January 1, 2016

Position Descriptions:

Position Description revisions continue; researching ramifications for PERS related to job classes vs. informal titles and descriptions. Modified union position list to include general job classes, rather than defined by specific tasks.

Training:

Attended a one-day HR and the Law course in Anchorage. Topics included the interview/hiring process, ACA, and termination documentation/unemployment in Alaska. Final trip report in progress at this time to include strategies for implementing process improvements in the Departments to strengthen the City recruiting efforts and shore up our legal positions when addressing terminations and unemployment.

Benefits:

Open Enrollment closed on December 31, 2015, with five employees enrolling their dependents. One employee updated a W-4 tax withdrawal form and two other employees sought advice for upcoming changes in their dependents' status.

Working with Caselle to upload covered employee census information (sensitive and confidential) into Caselle for the City's required 1095-C reporting under ACA. The forms are to be provided by the City to employees by the end of January, and to the federal government one month later.

Drug and Alcohol Review Responses:

Notified by DOT's contractor that the City has fully completed its responses to the August 2014 inspection. However, still outstanding are the responses/corrections related to our collections (Bethel Family Clinic and the Bethel Police Department) efforts. Will be working through Beacon to respond to these issues as our designated program administrator.

A recent vehicle accident within Public Works illustrated the need for updated/additional training on the DOT Drug and Alcohol program requirements for our various safety-sensitive positions to ensure that the City performs the correct steps at the correct time to not only minimize the City's risk, but to ensure ongoing eligibility for federal transit funds.

MEMORANDUM

DATE: 01/01/2016
TO: Ann Capela, City Manager
FROM: Muzaffar Lakhani, Public Works Director
SUBJECT: Manager's Report –

Utility Maintenance:

This month we had a main water line break at BHWTP the plant was down for about 5 hours, repairs were made in-house. The anthracite arrived in Bethel on 12/28/15 and we have added it to the three filters at CSWTP. Routine maintenance otherwise.

Hauled Utilities:

Jim Colonel is on vacation. Trucks have been breaking down as fast as the maintenance can fix them. There continues to be a shortage of trucks. Also, short 3 drivers position wise. Drivers have been working long hours, and even holidays just to try to keep up. One truck rolled in Larsen's Sub. The driver is currently off to recover. A couple of days we had a driver in the shop working on tire chains and putting studs on front tires.

Property Maintenance:

We have been performing routine winter maintenance on all our buildings and facilities. This includes monitoring the heat for the fluctuating temperatures that we have seen this winter as well as taking care any other problems that come up with plumbing and electrical issues. Lots of weather changes is keeping us busy with the shoveling and sanding of decks, stairs and landings.

We have been making repairs to the Utility & Maintenance Facility (City Shop). The overhead door track on the south needed replacing; some bracing work was done to the east wall. Speaking of the walls they are deteriorating at an **alarming** rate here these last few years. The south and east wall has a severe case of deterioration. The outer skin is literally flaking off exposing the foam insulation. This is an urgent problem. This is more than a maintenance issue. We need to have a structural engineer or a contractor come in to assess the problem. I believe we will need to replace these panels but it would be nice to get another opinion and soon. I do not think these walls will hold up to another winter without any major problems.

We had the contracted electrical contractor (Tec-Pro) from Anchorage here to take care of a few projects at City Hall and at our Water plants. It is our recommendation that City hire an employee as an electrician. Thank you.

Parks and Recreation: For the month of December we are currently planning winter activities, July 4th activities, and summer activities. The Parks Committee wants to offer input on these tasks, and will be discussed in our January meeting. We have been working with building Maintenance these past few weeks. Matt will be on vacation from 12/17/15 to 1/3/16.

Road Maintenance:

Streets and Roads used the 420 backhoe to dig the ice that was building up on the two culverts that crosses 7th Ave. We dug the lower end and the upper end of the culverts out and then haul the ice away with the loader. These two culverts drain out of Arthur Dull Lake, so if it is still draining water out of the lake, due to the lake is not froze up yet, we have to keep them open so it will not flood 7th Ave. Streets and Roads has been hauling cover to the land fill from the north side of the shop and to cover some of the trashes at the land fill. We would use the excavator to losing up the frozen top soil before hauling it. Also we have been hauling roads sand from the city sand pit to the land fill pile at the dump to be used later this winter.

Streets and Roads have been plowing the snow due to storms, and sanding the streets to keep them safe for driving. We have been coming in earlier in the morning to plow the snow, scarify the roads and sand them before the traffic runs.

Vehicles and Equipment: Robbie, John, and David have been focused on trying to keep water and sewer trucks up. A couple of trucks ended up being kind of long term projects. Police vehicle is waiting for a special tool so it can get done. All three employees worked on Chief Eddie Hoffman Day to finish up a sewer truck as they were really short. They are putting in longer hours and taking shorter lunches to try to keep up with the break downs.

Transit System:

On December 23 the drivers gave out FREE Day Passes for December 24. It was a Christmas Gift from the Bethel City Council and Transit System Staff. People were really appreciative of them. On December 24 we had 101 riders take advantage of the free rides. 7 elders, 7 youth, 87 general riders and of the 101 riders 10 were disabled.

The new studded /snow tires and wheels for bus #438 came in, and just the studded snow tires for 437. I was able to put the studded snow tires on Bus 438 last week. With the snow and icy roads they'll make it a lot safer to drive. I need to find the wheels for Bus 437/436 and get their studded snow tires mounted on, in case we need a back up. The studs on the tires wear out in one or two winters, but the

tread on the tires are still good. I want to look into the possibility of purchasing a Tire Stud Gun and studs to replace the worn out ones, instead of keep buying new studded tires. I changed oil/filter on bus #438 and I noticed several grease fittings under the bus; I need to get a grease gun/grease so I can grease them when I change the oil in the buses.

John Sargent, City Grant Manager, is working on the RFPs for the new buses and Bus Stop Shelters. I hope they'll be out and back by the end of January as it takes the bus companies 4-6 months to assemble the buses and get them on the barge this summer. The new bus (#439) we got last October, 2014, already has over 40,000 miles on it and it will start needing to have replacement parts soon. Bus 438 has over 100,000 miles on it and is starting to use a quart of oil every couple of weeks.

Streets and Roads plowed the Transit Bus Barn area last week and it was greatly appreciated. If they're not dealing with snow and snow berms its mud and pot holes. It's a major challenge for them to keep all the city roads passable. I think they do a great job doing it.

Bethel Transit System goal for the FY 2016 will be to show a 15-20 percent increase in ridership / revenue. I think we can do this by providing better and more dependable / reliable service for our passengers.

If you have questions and concerns please feel free to contact me anytime. Stop by the office and we can share a cup of coffee.

Landfill / Recycle Center:

Streets and roads have been hauling cover for me here at the landfill. My objective is to cover part of where the dumpster truck dumps to make a smaller foot print. The other reason is to make a substantial cover pile so that next summer I can be in accordance with our landfill permit by covering the trash at least once a week.

Staffing Issues/Concerns/Training:

Shortage of Mechanics and drivers is causing a lot of slow down and overtime.

City Clerk's Report



City of Bethel, Alaska

City Clerk's Office

Council Meetings and Events

January 13, Joint Task Force Meeting
January 26, Regular City Council Meeting

Committees and Commission

Annual Training has been set up for January 11 and January 21. This year the City Clerk's Office will provide general training to the committees and hold one on one trainings with each of the bodies next year.

A Committee/Commission training guide was created and will be disseminated to the individuals attending the 2016 Committee/Commission Training. The Office began working on a similar guide for the recorders and ex-officio members.

The City Clerk will hold Annual Training for the recorders and ex-officio members on January 18.

Electronic Cemetery Records

After a full year of data entry, the electronic cemetery module is complete and up to date with all of the Bethel Memorial Cemetery Information.

Joint Task Force Meeting

The next Joint Task Force meeting will be held on January 13, 6:30p, in the City Council Chambers.

Research/Document Preparation

- The City Clerk provided a summary of issues related to the proposed marijuana regulations to the Marijuana Advisory Committee as well as the Administration and the department heads.
- The City Clerk assisted in the drafting of an Ordinance prohibiting the establishment of marijuana facilitates within the community.
- The City Clerk has been working closely with the Bethel Municipal Code, publishing company, on the Code update for 2015. Supplements should be available in January.
- When time permits, the Office is reviewing the must updated modifications to the proposed State marijuana regulations as well as the City's property ownership.
- When time permits, the Office is working through the City owned property transfers/leases with the hope to get a comprehensive outline of City owned land.

- With 50% of the budget year passed, the Office is conducting a detailed review of budget accounts for the Office and will be providing Finance with any required line item transfers under \$5,000.
- The City Clerk began the review of the Donlin Gold EIS, this review will continue as time will allow.
- The Office has provided notice to Administration as well as the department heads on the potential Restaurant Eating Place License Application submission to the Alaska Alcohol Beverage Control Board by Fili's Restaurant. The City has not yet received notice from the ABC on the application.

Passport

- The Office conducted the end of year audit and close out for the passport facility. The office processed 125 passports in the Federal year, October 1, 2014 through September 30, 2015.
- The City Clerk will complete the annual online passport acceptance training in January 2016.

Lobbyist Reporting

The City Clerk attended the Alaska Public Offices Commission Ethics Training as required for lobbyist reporting.

The City Clerk's Office completed the fourth quarter report for calendar year 2015.

Executive Session

Additional Information
