



Public Works Committee Agenda

Regular Meeting Wednesday October 16, 2013 – 6:30PM
City Shop Conference Room

MEMBERS

Joseph A Klejka
Council Rep.
Term Expires
11/2013

Frank Neitz
Chair
Term Expires
12/2013

Jennifer Dobson
Vice-Chair
Term Expires
12/2014

Bill Schreiner
Committee Member
Term Expires
12/2013

Scott Guinn
Committee Member
Term Expires
12/2014

Donna Lindsey
Committee Member
Term Expires
12/2016

Delbert Egoak
Committee Member
Term Expires
12/2015

Chuck Willert
Ex-Officio Member

Cheryl Roberts
Secretary/Recorder

AGENDA

- I. CALL TO ORDER
- II. ROLL CALL
- III. PEOPLE TO BE HEARD – (15 Minute Limit)
Mike Nevenzel with ProDev - Pool Update
- IV. APPROVAL OF AGENDA
- V. APPROVAL OF MINUTES
A. Minutes from the previous regular meeting -
September 18, 2013.
- VI. SPECIAL ORDER OF BUSINESS
A.
- VII. UNFINISHED BUSINESS
A. Update - 5 Year Plan/ RFP - Water & Sewer Master Plan - Bill A.
B. Update - Institutional Corridor - Feasibility Study – Bill A.
C. Update - RFP - Cost Analysis of the City of Bethel's Water & Sewer Utilities
– Bill A.
D. Lagoon Issues – Bill A.
E. Landfill Operations & DEC Inspection
F. Junk Cars & Alaska Logistics Contract
- VIII. NEW BUSINESS
A. Dust Control Options – Brian Lefferts
B. Frederick's City Sub Service Line
C. Staffing/Training Plan for Pool
D. Boardwalk at Pinky's Park / Soccer Field
- IX. DIRECTOR'S REPORT
- IX. MEMBER COMMENTS
- X. ADJOURNMENT

City of Bethel, Alaska

Public Works Committee Minutes

September 18, 2013

Regular Meeting

Bethel, Alaska

CALL TO ORDER

A regular meeting of the Public Works Committee Meeting was held on September 18, 2013 at 6:49p.m. in the City Shop Conference Room, Bethel, Alaska was called to order by Committee Member Chair Frank Neitz.

ROLL CALL

Present: Frank Neitz, Jennifer Dobson, Scott Guinn, Delbert Egoak
Excused absence(s): Joseph Klejka, Bill Schreiner, Donna Lindsey
Unexcused absence(s): None

Also in attendance were the following:

~~Chuck Willert, Public Works Director~~
Cheryl Roberts, Public Works Admin, Recorder of Minutes

PEOPLE TO BE HEARD

Mike Nevenzel with ProDev - Pool Update -
Gave us an update on the project, everything is on track per the schedule and he gave us a hard copy of the project for the next 3 weeks.

APPROVAL OF MINUTES

MOVED BY:	S. Guinn	To approve the minutes of the regular meeting of July 17, 2013 and August 21, 2013.
SECONDED BY:	J. Dobson	

VOTE ON MOTION	Motion carried by unanimous voice vote.
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APPROVAL OF AGENDA

MOVED BY:	J. Dobson	Motioned carried to approve the agenda.
SECONDED BY:	D. Egoak	

VOTE ON MOTION	Motion carried by unanimous voice vote.
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DIRECTOR'S REPORT

The City took over the Armory and The Transit System is in the building.

UNFINISHED BUSINESS

Item A - Update - Yukon Kuskokwim Regional Aquatic Training & Safety Center - (Swimming Pool) - Mike Nevenzel with ProDev

Is there a staffing plan? Who will be running all the equipment?

Item B - Update - 5 Year Plan/ RFP - Water & Sewer Master Plan - Bill A.

The committee is wondering if there is any updated information from Larson Consulting Group and if LCG's report is done and ready for review.

Item C - Update - Institutional Corridor - Feasibility Study

No updated information at this time.

Item D - Update - RFP - Cost Analysis of the City of Bethel's Water & Sewer Utilities

This is finally done. Are the rates changing, if so, when, and what is our rate structure?

Item E - Update - Baseball Field - Grant Money

This should actually be for the Soccer Field. The Aeration & Seeding have not been done yet.

NEW BUSINESS

Item A - Landfill Operations / Clean Up Green Up-Junk Cars / D.E.C. / Salvage of Materials

The committee is wondering why Alaska Logistics is not fulfilling their "contract" of steel and junk car removal, if there is one.

Longevity of the Landfill

MOVED BY:	J. Dobson	To develop a new, or another, contract with Vendors to ensure the removal of junk cars, steel, etc. to preserve the longevity of the Landfill. Review the Directors Report and the current Contract with Alaska Logistics.
SECONDED BY:	S. Guinn	

VOTE ON MOTION	Motion carried by unanimous voice vote.
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D.E.C. - There were some very serious findings. This included, zero cover material being used, which was their most serious findings, which probably led to the two uncontrolled fires that the Fire Department had to respond to.

Item B - Dumpsters - Why are they not being fixed?

No new information at this time.

Item C - New Committee Member - Delbert Egoak

The members welcomed Delbert to our committee.

Item D - Lagoon Issues - Bill Arnold

No information at this time. Bill Arnold wasn't at the meeting.

Item E - Old Police Station

No information at this time. Some of this went to the Landfill.

Item F - Boardwalk - Pinky's Park -

- **Public Works** - Fixed some walkways
- **Parks & Recreation** -
- **Soccer Field** - Grant for \$125,000

MEMBER COMMENTS

Jennifer - Welcome aboard Delbert & no other comments

Scott - Nothing new and welcomes Delbert

Delbert - He has no comments and questions and he welcomes himself

Frank - Welcomes Delbert to the committee and thanks him for coming

ADJOURNMENT

MOVED BY:	J. Dobson	Motion to adjourn the meeting.
SECONDED BY:	D. Egoak	

VOTE ON MOTION	Motion carried by unanimous voice vote.
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With no further business before the Committee, the meeting adjourned at 7:26 p.m.

APPROVED THIS _____ DAY OF OCTOBER, 2013.

Frank Neitz, Chair

Cheryl Roberts
Recorder of Minutes



BETHEL 2013 WATER & SEWER MASTER PLAN UPDATE

FIGURE 1
WATER AND SEWER SERVICE AREAS

- Control costs, individually and to the community.
- Make costs and services more equitable [among] all users.
- Continue to meet or exceed federal water treatment standards.
- Exceed federal water treatment standards if deemed necessary to protect the environment.
- Implement water conservation measures.

The intent with this 2013 Update is to re-evaluate the City's water and sewer systems with the benefit of post-2005 studies, updated population statistics, a current cost of service study, recent water demand data, and re-calculated wastewater loads in establishing the most cost effective and highest priority projects for the Bethel community.

This document is organized to follow the chapter outline of the 2005 Plan, insert text and data as necessary to bring findings up to date, and amend recommendations as appropriate. Editorial instructions are made in *italics*.

1. EXECUTIVE SUMMARY

1.1. Introduction

Replace the third sentence in the first paragraph with the following.

The goal of piped water and sewer service to the entire Bethel service area is economically and operationally unrealistic. This 2013 Update recommends the more attainable goal of finding the most cost-effective and sustainable means to improve water and sewer service to the Bethel community.

1.2. Objectives and Means

No exceptions taken.

1.3. Evaluations of Previous Master Plan's Strategy

No exceptions taken other than to strike the final sentence of paragraph 3, page 3. The strategy remains to shorten haul distances and improve cost-effectiveness of utility operations even if all-piped service is unattainable.

1.4. Recommended Strategy

Revise bullet item number 3 on page 3 to read as follows:

3. Convert the existing lagoons into an all-gravity facultative treatment system with controlled effluent release to a constructed wetland.

Strike bullet item number 4 on page 3.

Strike paragraph 4, page 4 through paragraph 2, page 5. Replace with the following.



The overall goal of reducing operation and maintenance costs for the City of Bethel remains unchanged. It is recommended that the City take a comprehensive approach to reducing costs and improving service.

- **Adopt and implement planning policies and ordinances that promote sustainable growth within existing service area boundaries, discourage new development in outlying areas, and thereby avoid the high cost of extending utility, road, emergency, and other services.**
- **Add management level engineering staff to: oversee water and sewer operations; streamline utility functions; organize, maintain, and disseminate utility-related data; manage development of capital projects; and communicate with City leaders, regulatory agencies, and the public.**
- **Select capital improvements that provide the greatest benefit per dollar spent.**

1.5. Project Prioritization and Capital Cost Estimates

Replace text and Table 1-2 with the following.

Highest rated recommended capital improvement projects, in the order of priority based on the rating criteria presented in Section 13, are listed in Table ES-1.

Table ES-1. Bethel Water and Sewer Master Plan Update Highest Rated Recommended Capital Improvements		
Project Description	2013 Capital Cost	*Rating
Wastewater Treatment and Discharge System Upgrade	\$9,730,000	9
Institutional Corridor	\$12,500,000 to \$15,400,000	8
Backup Well for City Subdivision WTP	\$300,000	8
Utility Manhole Replacement	\$710,000	8
Bethel Heights Piped Water and Sewer Upgrade	\$28,500,000	7

Rating Scale: 0 - 9 based on Functionality, Operability, and Cost Effectiveness Criteria



Table ES-2 contains a complete listing of recommended capital projects together with a brief description and rating breakdown of each.

It is recommended that a business plan be prepared to implement the recommendations of this 2013 Update.

2. INTRODUCTION

Previous studies that guide the City's development of water and sewer improvements, in chronological order, include:

1. *Water and Sewer Facilities Master Plan Update*, City of Bethel, by Dames & Moore, 1996
2. *Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan Update*, City of Bethel, CH2M Hill, 2002
3. *Kasayuli Subdivision Water and Sewer Feasibility Study*, CRW, 2004
4. *Bethel Water and Sewer Facilities Master Plan Update*, CRW, 2005
5. *City of Bethel Wastewater Treatment Upgrade Plan Re-Evaluation*, GV Jones & Associates, 2007
6. *Bethel Heights Piped Water Distribution System Design Study Report*, CRW, 2008
7. *City of Bethel Water & Sewer System Upgrades*, Draft Environmental Review, CH2M Hill, 2009
8. *Bethel Comprehensive Plan 2035*, Agnew Beck Consulting, 2011
9. *Utility Manhole and Replacement Project*, Preliminary Engineering and Environmental Reports, Larsen Consulting Group, 2012
10. *Water Loops A, B & C and Wastewater Upgrades*, Preliminary Engineering and Environmental Reports, Larsen Consulting Group, 2013

Public funding for rural Alaska sanitation infrastructure has undergone a significant drop in recent years. At the time of the 2005 Plan state and federal appropriations were flowing to the "hub communities". Correspondingly, the list of capital water and sewer projects for Bethel anticipated a grant stream of \$10 million per year. As of this writing, public funding has declined severely while the estimated cost of addressing state-wide rural water and sewer needs has risen. According to the Alaska Department of Environmental Conservation (ADEC), the deficit between available funds and needs in 2013 is over \$667 million and growing.

With federal and state funding levels for rural Alaska sanitation projects not expected to increase in the foreseeable future, ADEC and other regulatory/funding agencies have labeled the existing approach to rural sanitation solutions as "untenable" and are in the process of



**Table ES-2. Bethel Water and Sewer Master Plan Update
Evaluation and Rating of Recommended Capital Improvements**

Item Number	Description	Comments	2013 Cost*	Evaluation Criteria**			Rating
				Functionality	Operability	Cost Effectiveness	
1	Bethel Heights Piped Water and Sewer Upgrade	<i>Replaces deteriorated piping, improves water quality, and reduces O&M cost. Avoids reducing level of service to existing piped customers.</i>	\$28,500,000	3	3	1	7
2	Wastewater Treatment and Discharge System Upgrade	<i>Improves treatment and enables compliance with State and Federal discharge regulations. Less expensive to operate than existing system.</i>	\$9,730,000	3	3	3	9
3	Sandpit Water Station	<i>Usefulness would be marginalized by Institutional Corridor (IC).</i>	\$3,945,659	1	1	1	3
4	FAA Lift Station Upgrades	<i>Will be necessary if Kasayuli and/or airport are connected. Usefulness would be marginalized by IC project.</i>	\$1,418,861	2	1	1	4
5	Kasayuli Subdivision Lift Station and Forcemain	<i>Reduces haul distance for 211 customers. Dependent on upgrade of FAA LS & FM.</i>	\$4,387,958	2	1	1	4
6	Ptarmigan Lift Station and Forcemain	<i>Closer to existing system than other alternatives. Connects directly into existing forcemain without adding load onto other lift stations.</i>	\$5,511,661	2	1	2	5
7	Tundra Ridge Subdivision Water Station	<i>Not as close to existing system as other alternatives. Consider whether water can be more efficiently delivered by extending existing distribution piping.</i>	\$4,896,384	2	1	2	5
8	Nunvak Subdivision Water Station	<i>Closer to existing system than other alternatives. Consider whether water can be more efficiently delivered by extending existing distribution piping.</i>	\$6,177,300	2	1	2	5
9	Larsen Subdivision Lift Station and Forcemain	<i>Dependent on implementation of Ptarmigan LS & FM. Shortens haul distance for 67 customers.</i>	\$4,032,367	1	1	1	3
10	Kilbuck North (Avenues)	<i>Closer to existing system than other alternatives. Could add 133 customers to piped service area.</i>	\$11,858,908	2	2	1	5
11	Kilbuck South (Avenues)	<i>Closer to existing system than other alternatives. Could add 49 customers to piped service area.</i>	\$6,392,606	2	2	1	5
12	Mission Lake Area West	<i>Closer to existing system than other alternatives and is contingent on the Kilbuck projects. Together with Mission Lake Area East, could add 135 customers to piped service area.</i>	\$7,024,253	2	2	1	5
13	Mission Lake Area East	<i>Closer to existing system than other alternatives and is contingent on the Kilbuck projects. Together with Mission Lake Area West, could add 135 customers to piped service area.</i>	\$7,024,253	2	2	1	5

14	Harbor Area West	<i>Dependent on implementation of adjoining piped water and sewer expansions. Together with Harbor Area East, could add 146 customers to piped service area.</i>	\$8,420,552	1	2	2	5
15	Harbor Area East	<i>Dependent on implementation of adjoining piped water and sewer expansions. Together with Harbor Area West, adds 146 customers to piped service area.</i>	\$8,420,552	1	2	2	5
16	Nunvak Subdivision West	<i>Closer to existing system than other alternatives. Together with Nunivak East, could add 47 customers to piped service area.</i>	\$5,053,186	2	2	2	6
17	Nunvak Subdivision East	<i>Closer to existing system than other alternatives. Together with Nunivak West, could add 47 customers to piped service area.</i>	\$8,372,654	2	2	2	6
18	Blueberry Field Subdivision Southeast	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, could add 275 customers to piped service area.</i>	\$7,302,230	1	2	2	5
19	Blueberry Field Subdivision Southwest	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, would add 275 customers to piped service area.</i>	\$7,302,230	1	2	2	5
20	Blueberry Field Subdivision Northwest	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, could add 275 customers to piped service area.</i>	\$6,449,483	1	2	2	5
21	Blueberry Field Subdivision Northeast	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, would add 275 customers to piped service area.</i>	\$6,449,483	1	2	2	5
22	Tundra Ridge Subdivision South	<i>Not as close to existing system as other alternatives. Consider whether water and sewer service can be more efficiently delivered by extending existing piping. The two Tundra Ridge projects would add 219 customers to piped service area.</i>	\$9,951,133	2	2	1	5
23	Tundra Ridge Subdivision North	<i>Not as close to existing system as other alternatives. Consider whether water and sewer service can be more efficiently delivered by extending existing piping. The two Tundra Ridge projects could add 219 customers to piped service area.</i>	\$9,951,133	2	2	1	5

Table 13-1, page 2 of 3

24	Uivuuq Subdivision	Not as close to existing system as other alternatives. Close to AVCP Housing. Consider whether water and sewer service can be more efficiently delivered by extending existing piping. Could add 83 customers to piped service area.	\$9,269,877	2	2	1	5
25	Larsen Subdivision	Further from existing system than other alternatives. Sewer piping could utilize gravity flow. Would add 67 customers to piped service area.	\$7,735,446	1	1	1	3
26	Airport Facilities	Could utilize existing sewer piping. Water viability is enhanced by Institutional Corridor.	\$6,047,060	2	2	2	6
27	Kasayuli Subdivision East	Further from existing system than other alternatives. Dependent on completion of other projects. Including Kasayuli West, could add 211 customers to piped service area.	\$9,704,376	1	2	1	4
28	Kasayuli Subdivision West	Further from existing system than other alternatives. Dependent on completion of other projects. Including Kasayuli East, could add 211 customers to piped service area.	\$9,704,376	1	2	1	4
29	H-Marker Lake Area	Further from existing system than other alternatives. Dependent on completion of Blueberry Field projects. Could add 16 customers to piped service area.	\$2,420,535	1	1	1	3
30	Raven Subdivision West	Further from existing system than other alternatives. Dependent on completion of Kasayuli and other projects. Raven projects could add 54 customers to piped service area.	\$7,251,340	1	1	1	3
31	Raven Subdivision East	Further from existing system than other alternatives. Dependent on completion of Kasayuli and other projects. Raven projects could add 54 customers to piped service area.	\$6,333,589	1	1	1	3
32	Institutional Corridor	Provides piped service to a commercially viable area. Alternative A, Alternative B.	\$12,500,000 \$15,600,000	3	3	2	8
33	Backup Well	Backup source for City Subdivision WTP. 10" x 500' casing, 400 gpm	\$300,000	2	3	3	8
34	Utility Manhole Replacment	Removes and replaces aging components of the water and sewer systems adjacdnt to City Courthouse.	\$710,000	3	3	2	8
<p>* 2013 Cost = 2005 cost times federal Construction Price Index of 232.531/195.3 (April 2013)/2005) Exceptions are item numbers 1, 2, 32, and 33. Costs for these projects were estimated by LCG based on studies completed since the 2005 Plan.</p> <p>** Rating Points. 3-Excellent, 2-Good, 1-Fair, 0-Poor</p> <p>Source: Bethel Water and Sewer Facilities Master Plan Update, April 2005, CRW Engineering Group, Inc.</p>							

shifting funding priorities. The most recent communications indicate that the shift will be away from large centralized piped systems toward more cost-effective cluster and onsite facilities.

As fresh approaches are developed by the state's funding and regulatory community focusing on cost-effectiveness, it is recommended that Bethel similarly reconsider its approach to water and sewer capital improvement.

3. COMMUNITY PROFILE

No exceptions taken.

4. FORECASTING AUGMENTATION

Bethel's population, along with that of the Bethel Census Area, continues to grow at a moderate rate of slightly over one percent per year. This is a reduction in the growth rate predicted in the 2005 Plan. See Table 4-1.

The Bethel City population in 2013 is estimated at 6,264. Growth over a 20-year planning horizon can be expected to increase the population to 7,643 by 2033.

5. FUTURE PROJECTS

Refer to Bethel Comprehensive Plan 2035 for a description of future (non-sanitation) projects.

6. EXISTING COMMUNITY SANITATION FACILITIES

6.1. Administration

In 2013 the number of hauled water and sewer accounts is essentially the same as that reported in the 2005 Plan while the number of piped accounts has increased by a third. Correspondingly, the proportion of piped customers during the eight-year period increased from 17 to 27 percent of total accounts. See Table 6-1.

Table 6-1. Bethel Water and Sewer Master Plan Update						
*Number of Water and Sewer Accounts						
Year	Total Accounts	Piped		Hauled		Source
		No.	% Total	No.	% Total	
2005	1,516	255	17%	1,261	83%	CRW Water and WW Master Plan, 2005
2010	1,631	255	16%	1,376	84%	LCG Institutional Corridor Study, 2010
2013	1,640	440	27%	1,200	73%	CH2M Hill Cost of Service Study, 2013

**Approximate. Actual number of active accounts varies from month to month.*

6.2. History of Sanitation Improvements



**Table 4-1. Bethel Water and Sewer Master Plan Update
Historical and Projected Populations**

Year	City of Bethel		Bethel Census Area		City Proportion of Census Area Population
	Population	Annual Growth	Population	Annual Growth	
1920	221		No Data	No Data	
		2.3%			
1930	278		No Data	No Data	
		3.1%			
1940	376		4,026		9%
		5.6%		1.5%	
1950	651		4,670		14%
		6.8%		3.1%	
1960	1,258		6,360		20%
		6.7%		3.4%	
1970	2,416		8,917		27%
		4.0%		2.1%	
1980	3,576		10,999		33%
		2.7%		2.2%	
1990	4,674		13,656		34%
		1.6%		1.6%	
2000	5,471		16,006		34%
		1.1%		0.7%	
2010	6,080		17,144		35%
		1.0%		0.7%	
2015	6,403		18,173		35%
		1.1%		1.1%	
2020	6,671		19,057		35%
		1.1%		1.1%	
2025	7,029		20,000		35%
		1.1%		1.1%	
2030	7,418		21,000		35%
		1.3%		1.1%	
2035	7,895		22,000		35%

Historical Source: US Census Bureau

Projection Source for Bethel Census District: Alaska Department of Labor and Workforce Development

Projections for the City of Bethel population assume a continuation of its 35% share of the Bethel Census District population.

The following Bethel water- and sewer-related projects have been completed since the 2005 Plan.

2004 - Membrane bioreactor (MBR) pilot testing was completed by CH2M Hill. Testing demonstrated that an MBR system and ultraviolet disinfection can provide adequate removal and inactivation of microorganisms and viruses albeit with prohibitive capital, operations, and maintenance costs.

2007 - *Bethel Wastewater Treatment Upgrade Plan Re-Evaluation* conducted by GV Jones & Associates, Inc. The evaluation compared: (1) Retention of the existing intermittently discharged facultative lagoon treatment process; (2) Development of a partially mixed aerated lagoon treatment system; and (3) Development of an MBR treatment system. The evaluation found: (1) The existing system does not consistently meet current regulations for effluent quality; (2) A partially mixed aerated lagoon system will require additional study to confirm viability; (3) An MBR system, at significantly higher cost, will exceed regulatory discharge requirements.

2010 - *Institutional Corridor Water System Feasibility Study* prepared by Larsen Consulting Group, Inc. The study evaluated the feasibility of extending a water service from the City Subdivision Water Treatment Plant to institutions along the Chief Eddie Hoffman Highway corridor.

2010 - FAA Housing Lift Station tasks completed. This project replaced pumps, pumping equipment, and electrical controls.

2010 - QFC#2 Lift Station and Force Main Improvements. This project replaced and relocated the QFC#2 Lift Station, installed several miles of force main, replaced and upgraded single service lift stations, and made related improvements to upgrade and extend piped sewer service as part of Bethel's "Background" water and sewer facilities.

2011 - Trailer Court Lift Station. This project replaced the holding tank and reconnected to the force main.

2012 - QFC#2. This project replaced lift pumps to attain a flow rate of 400-500 gallons per minute.

2012 – Utility Manhole Replacement. This project (designed, but not yet funded and constructed) will replace aging components of the water sewer force main systems adjacent to the City of Bethel Court house and police Station.

2013 – Bethel Heights Water Loops A, B & C. This project (designed, but not yet funded or constructed) will replace aging water distribution mains and service install equipment improvements in the Bethel Heights Water Treatment Plant.

6.3. Water Treatment Systems

Revise the total number of customers to 1,640 (1,200 hauled and 440 piped) Strike all references to "City laundromat". Truck fill stations at the Bethel Heights Water Treatment Plant are equipped with 10 hp pumps, not 3hp pumps (page 31, paragraph 5, 2005 Plan).



6.4. Wastewater Treatment & Disposal System

No exceptions taken.

7. COMMUNITY NEED FOR UPGRADES

7.3.3. Wastewater Treatment

Replace existing text with the following.

The existing wastewater lagoon treatment system consists of two 30-acre cells, followed by pumped effluent release to the tundra. The water surface area would be adequate to treat current municipal wastewater flow as well as for the 20-year planning horizon projection if both cells were operated and maintained as fully functional facultative treatment lagoons. However, treatment effectiveness is significantly impaired by short circuiting, groundwater infiltration, inadequate hydraulic volume, and bioactivity disruption caused the system's discharge constraints. Consequently, wastewater effluent does not meet state and federal discharge requirements. As a result, Bethel does not have an Alaska Pollution Discharge Elimination System (APDES) permit.

7.3.4. Wastewater Collection Systems

Strike the first two paragraphs.

8. DESIGN CRITERIA & ANALYSIS UPDATE

8.1. Drinking Water System Design Criteria

This 2013 Update revises design criteria for Bethel's drinking water system according to updated population (Table 4-1), water account (Table 6-1), and water demand (Table 8-1) data. Key findings are summarized as follows.

Population Findings

- Prior to 1980, the City of Bethel grew significantly faster than other communities in the Bethel Census Area.
- The City's proportion of the Bethel Census Area population remained stable (between 33 and 35%) over the past three decades.
- The City's annual population growth dropped from a peak of nearly 7% in the 1950's and 1960's to slightly over 1% by 2000.
- The City of Bethel is expected to continue to grow at a moderate (1.1 to 1.3%) rate over the 20-year planning horizon.
- Estimated 2013 Bethel City population – 6,264
- Estimated 2033 Bethel City population – 7,643

Water Account Findings

- The piped proportion of Bethel's water and sewer accounts varied from 17% in 2005 to 16% in 2005, to 27% in 2013.
- The average number of residents served by each account in 2005 was 3.8.



**Table 8-1. Bethel Water and Sewer Master Plan Update
Historical Water Demand**

Month	Plant Production (gal)			Delivered Water (gal)						
	Bethel Heights	City Sub-division	Total	Bethel Heights		City Subdivision		City-wide		
				Piped	Hauled	Piped	Hauled	Piped	Hauled	Total
2010										
JUL	2,689,182	3,681,356	6,370,538	2,676,333	634,375	949,600	2,109,000	3,625,933	2,743,375	6,369,308
AUG	2,685,076	3,722,941	6,408,017	2,806,171	1,168,597	890,100	2,140,000	3,696,271	3,308,597	7,004,868
SEP	2,588,224	3,363,098	5,951,322	2,798,885	785,300	883,600	2,053,000	3,682,485	2,838,300	6,520,785
OCT	2,841,558	3,677,085	6,518,643	3,033,298	412,900	979,400	2,081,000	4,012,698	2,493,900	6,506,598
NOV	2,430,632	3,499,396	5,930,028	2,574,237	330,300	890,000	2,041,000	3,464,237	2,371,300	5,835,537
DEC	3,006,608	3,697,268	6,703,876	3,189,372	411,600	1,121,500	2,030,000	4,310,872	2,441,600	6,752,472
2011										
JAN	2,748,244	3,724,036	6,472,280	3,137,593	314,700	1,101,400	2,008,000	4,238,993	2,322,700	6,561,693
FEB	2,638,697	3,451,021	6,089,718	2,783,718	380,200	1,039,200	1,798,000	3,822,918	2,178,200	6,001,118
MAR	3,049,282	3,514,619	6,563,901	2,991,533	623,800	1,060,600	1,830,000	4,052,133	2,453,800	6,505,933
APR	2,924,108	3,390,030	6,314,138	2,757,002	636,900	1,065,000	1,788,000	3,822,002	2,424,900	6,246,902
MAY	3,010,857	3,416,129	6,426,986	3,604,260	589,000	900,100	1,935,000	4,504,360	2,524,000	7,028,360
JUN	4,189,564	3,492,676	7,682,240	2,552,788	798,500	867,400	2,000,000	3,420,188	2,798,500	6,218,688
JUL		3,676,839			695,350	842,000	2,147,000		2,842,350	
AUG		3,658,540			695,350	754,700	2,268,000		2,963,350	
SEP		3,289,066			695,350	760,800	1,903,000		2,598,350	
OCT		3,467,331			695,350	855,400	1,939,000		2,634,350	
NOV		3,984,389			642,300		1,974,000		2,616,300	
DEC		3,578,466			409,600	891,800	2,094,000		2,503,600	
2012										
JAN		3,905,204			411,800	1,129,000	2,160,000		2,571,800	
FEB		3,328,513			228,000	919,000	1,848,000		2,076,000	
MAR		3,546,580			457,900	987,500	1,941,000		2,398,900	
APR		3,110,559			520,900	833,700	1,727,000		2,247,900	
MAY		3,534,008			673,200	830,500	2,053,000		2,726,200	
JUN		3,197,135				827,400	1,812,000			
Totals/Averages										
Totals	31,795,424	84,906,285	77,431,687	34,905,190	13,211,272	21,379,700	47,679,000	46,653,090	59,078,272	77,552,262
Avg Yr	31,795,424	42,453,143	77,431,687	34,905,190	6,892,838	10,689,850	23,839,500	46,653,090	30,823,446	77,476,536
Avg Mo	2,649,619	3,537,762	6,452,641	2,908,766	574,403	890,821	1,986,625	3,887,758	2,568,621	6,456,378
Avg Dy	87,111	116,310	212,142	95,631	18,884	29,287	65,314	127,817	84,448	212,264

Source: City of Bethel Utility Records

Note: Blank cells indicate missing or inadequate data.

Prepared: 12 Mar 13

- The average number of residents served by each account in 2013 is 3.8.

Water Demand Findings

- Combined monthly volume of water treated at the Bethel Heights and City Subdivision water treatment plants varies from 5.9 to 7.7 million gallons.
- Average monthly volume of treated water production is 6.4 MG.
- Total volume of water piped and trucked to Bethel customers per month varies from 5.8 to 7.0 MG.
- Average monthly volume of delivered water is 6.4 MG.
- There is no apparent pattern of higher or lower seasonal demand.
- Average day demand from the 440 piped accounts is 127,817 gallons, or 290 gallons per account per day.
- Average day demand from the 1,200 hauled accounts is 84,448 gallons, or 70 gallons per account per day.
- Average day demand for each of Bethel's 6,264 residents in 2013 is 34 gallons per capita per day (gpcd)

Water system design criteria established in Table 8-2 shall replace the "Design Population" and "Water Consumption" components of the criteria in Section 8.1 of the 2005 Plan.

Table 8-2. Bethel Water and Sewer Master Plan Update				
Water System Design Criteria				
Description	Units	City-wide	Piped	Hauled
2013 Bethel Service Area Population*	people	6,264	1,681	4,583
2013 Water and Sewer Accounts	accounts	1,640	440	1,200
Estimated 2033 Bethel Service Area Population**	people	7,643	2,051	5,592
Estimated 2033 Water and Sewer Accounts	accounts	2,001	537	1,464
2013 Avg Year Demand	gal/yr	77,476,536	46,653,090	30,823,446
2013 Avg Month Demand	gal/mo	6,456,378	3,887,758	2,568,621
2013 Avg Day Demand	gal/day	212,264	127,817	84,448
2013 Avg Day per Capita Demand	gpcd	34	76	18
Estimated 2033 per Capita Demand***	gpcd	37	84	20
Estimated 2033 Avg Day Demand	gal/day	284,893	171,551	113,343
Estimated 2033 Avg Month Demand	gal/mo	8,665,502	5,217,999	3,447,504
Estimated 2033 Avg Year Demand	gal/yr	103,986,028	62,615,984	41,370,044

Sources: City of Bethel Utility Records, Table 4 1, Table 6 1.

*Piped and hauled populations assumed to be commensurate with piped and hauled customer accounts.

**Piped and hauled services areas assumed to grow at similar annual rates.

***Calculation of city wide, piped, and hauled demands for 2033 applies a 1.1 factor of safety to the 2013 demands.

8.2. Wastewater Design Criteria

Present and future wastewater loading estimates are herewith revised according to the updated population, customer account and water data. Results are presented in Table 8-3 which replaces Tables 8-1, 8-2, and 8-3 in the 2005 Plan.

According to the above results, population and attendant waste loads to the sewer system are increasing at slower rates than were anticipated in the 2005 Plan. Consequently, the hydraulic and BOD/TSS loadings it predicted for 2024 are not expected to occur until after 2033.

9. PREVIOUS MASTER PLAN EVALUATION OF WATER AND WASTEWATER FACILITY IMPROVEMENTS

9.1. Introduction

Strike the first two paragraphs.

9.2. Water Source, Treatment and Storage

Strike paragraph five on page 49 through paragraph four on page 50.

9.3. Water Distribution

No exceptions taken.

9.4. Sewer Collection

No exceptions taken.

9.5. Evaluation of Aboveground vs. Belowground Piped Water And Sewer System

No exceptions taken.

9.6. Wastewater Treatment and Disposal Options

The list of potential wastewater treatment and disposal options for the City of Bethel has been refined by evaluations conducted since the 2005 Plan. In 2007, GV Jones & Associates conducted the following wastewater treatment evaluations:

- Retention of the existing intermittently discharged facultative lagoon treatment process;
- Development of a partially mixed aerated lagoon treatment system; and
- Development of an MBR treatment system.

The GV Jones evaluations concluded:

- Continued operation of the existing system will not meet current regulations for effluent quality;
- A partially mixed aerated lagoon system will require additional study to confirm viability; and



**Table 8-3. Bethel Water and Sewer Master Plan Update
Estimated Wastewater System Loads***

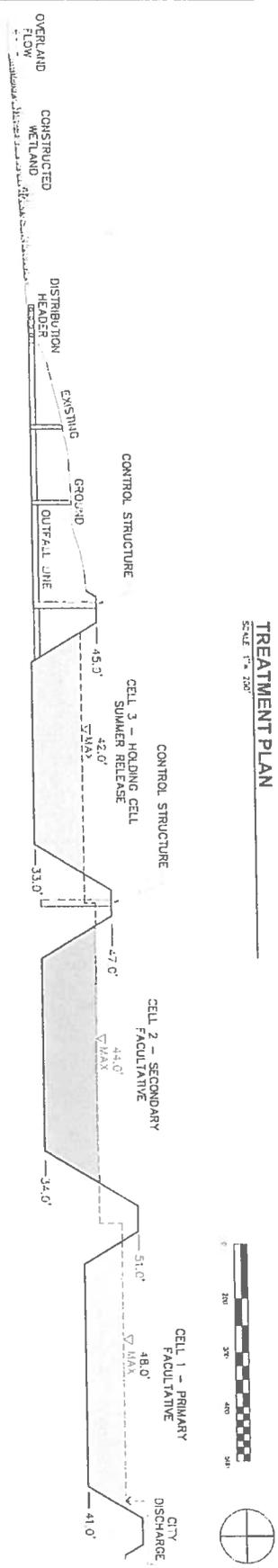
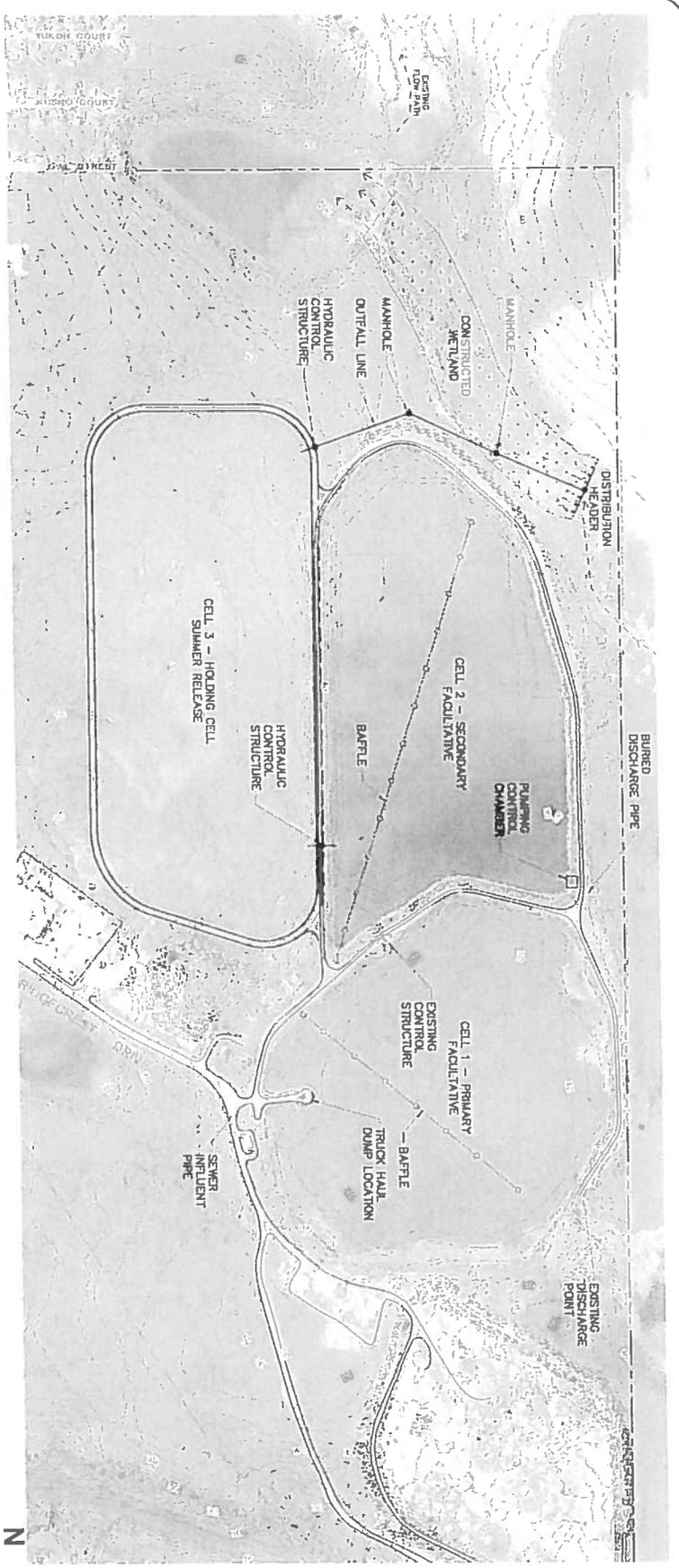
Baseline Information	Unit	City-wide	Piped	Hauled
2013 Service Area Population	Persons	6,264	1,681	4,583
2013 Sewer Accounts	Accounts	1,640	440	1,200
Estimated 2033 Service Area Population	Persons	7,643	2,051	5,592
Estimated 2033 Sewer Accounts	Accounts	2,001	537	1,464
Criteria	Unit	City-wide	Piped	30,823,446
Wastewater Volume Generation - 2013	gpcd	34	76	18
Wastewater Volume Generation - 2033	gpcd	37	84	20
Biochemical Oxygen Demand (BOD)**	ppcd	0.15	0.15	0.15
Total Suspended Solids (TSS)**	ppcd	0.19	0.19	0.19
2013 Loads	Unit	City-wide	Piped	Hauled
Wastewater Volume per Day	Gal	212,976	127,724	82,501
Wastewater Volume per Year	MG	77.7	46.6	30.1
BOD Concentration	mg/L	529	237	1000
BOD Load per Day	ppd	940	252	688
BOD Load per Year	Tons	171	46	125
TSS Concentration	mg/L	670	300	1,266
TSS Load per Day	ppd	1190	319	871
TSS Load per Year	tpy	217	58	159
2033 Loads	Unit	City-wide	Piped	Hauled
Wastewater Volume per Day	Gal	282,791	172,247	111,849
Wastewater Volume per Year	MG	103.2	62.9	40.8
BOD Concentration	mg/L	486	214	900
BOD Load per Day	ppd	1146	308	839
BOD Load per Year	Tons	209	56	153
TSS Concentration	mg/L	616	271	1,139
TSS Load per Day	ppd	1452	390	1063
TSS Load per Year	tpy	265	71	194

Sources: City of Bethel Utility Records, Table 4-1, Table 6-1, Table 8-1, Table 8-2.

*Estimates are based on the assumption that wastewater volume generation equals water demands

**Per capita loading values for residential domestic sewage accepted by the Environmental Protection Agency and others

Abbreviations: gpcd-gallons per capita per day; ppcd-pounds per capita per day, Gal-gallons, MG-million gallons, mg/L-milligrams per Liter, ppd-pounds per day, tpy-tons per year



BETHEL 2013 WATER & SEWER MASTER PLAN UPDATE

FIGURE 9-1
PROPOSED WASTEWATER TREATMENT AND DISPOSAL SYSTEM

- An MBR system, at significantly higher cost, will meet and exceed regulatory discharge requirements.

Investigation by LCG in 2012 found that facultative treatment in the existing lagoons is impaired by the following conditions.

- Damaged baffles that allow water to short-circuit through the cells
- Biosolids buildup in Cell 1
- Inadequate hydraulic detention in the two cells
- Microbial removal/impairment created by 'store and pump' operations

Effluent is presently pumped from Cell 2 during early summer and late fall to lower water levels in the two ponds and thereby provide space for incoming wastewater. Although this operation is necessary with the existing lagoon system, pumping removes the aerobic portion of the water column with the more active biomass and thereby slows treatment of water remaining in the cells.

Additional dilution of the biomass is created by infiltration of groundwater. Pumping lowers the pond down to a level below that of the surrounding water table. Consequently, a hydraulic gradient is created that draws water from the aquifer into the lagoons. Most of the estimated 250,000,000 to 290,000,000 gallons of effluent pumped each year from Cell 2 is infiltrated groundwater.

With the benefit of the studies conducted to date, it is concluded that the most cost effective wastewater treatment and disposal solution is to convert the existing lagoons into an all-gravity facultative treatment system with controlled effluent release to a constructed wetland.

The 2013 Preliminary Engineering Report by LCG provides details of the recommended wastewater system as summarized below and shown in Figure 9-1.

- Renovate Cell 1 by repairing the inlet structure, reshaping the basin, and replacing the baffle curtain. Operate existing outlet to maintain constant pond level within Cell 1.
- Renovate Cell 2 by reshaping the basin, replacing the baffle curtain, and installing a gravity hydraulic transfer structure to maintain constant pond level in Cell 2.
- Construct a new Cell 3 as a holding cell for winter storage with a gravity outlet for controlled summertime release.
- Install gravity outfall line, manholes, and distribution header.
- Build a constructed wetland to receive and polish lagoon effluent during the growing season.

10. EVALUATION OF WATER AND WASTEWATER FACILITY IMPROVEMENTS

10.1. Introduction

Replace existing text with the following.

Attempts to meet Bethel's all-piped water sewer service goal have been unsuccessful.



The 1996 Master Plan (by Dames and Moore) proposed a 12-phase capital improvement program (CIP) that would have included 12 water treatment plants; 10 new wells, 10 new water storage tanks, an unspecified number of sewage lift stations, and hundreds of thousands of feet of new water and pressure sewer mains at a total estimated cost of \$104,900,000 (1996 dollars).

Nine years later, the 2005 Plan (by CRW) noted that the 1996 plan's CIP would result in a system that would be too complex and costly to effectively operate and maintain. Based on more recent experience with the Bethel Heights and City Subdivision water treatment plants, CRW further concluded that the 1996 cost estimates were too low. CRW's 2005 Plan proposed a less extensive pump and short haul system to be implemented over a 24-year planning horizon. The CIP was broken down into 44 projects at a total estimated capital cost of \$240,000,000 (2005 dollars).

Despite their extent and cost, neither the 1996 nor the 2005 recommended facility plans would have been sufficient to meet the goal of piped utility service to every business and residence in Bethel. Had either CIP been implemented, it would have raised operations and maintenance costs well beyond the City's means.

Attainment of all-piped water and sewer service for the City of Bethel is not considered operationally sustainable or economically feasible.

Evaluations in the subsequent subsections of this 2013 Update are designed to meet the more reasonable goal of finding the most cost-effective means to improve utility performance.

10.2. Water Source, Treatment and Storage Options

Replace existing text with the following.

With a combined source and treatment capacity of 800 gallons per minute (gpm), or 1.52 mgd, the Bethel Heights and City Subdivision wells and water treatment plants significantly exceed the estimated 2033 average day demand of .21 mgd, allowing an ample maximum day to average day peaking factor of 7.2. Existing tanks are sized to match water treatment plant capacities. Expansion of existing source, treatment, or storage facilities is not recommended in this 2013 Plan.

10.3. Water Distribution Options

Strike paragraph four on page 64 through paragraph three on page 65. Replace with a reference to the 2013 Bethel Water and Sewer Cost of Service and Rate Study prepared by CH2MHill.

10.4. Wastewater Collection Options

Strike the first paragraph.

10.5. Wastewater Treatment and Disposal Options

Replace with the following text.



This 2013 Update recommends that the City of Bethel convert the facultative wastewater lagoons into an all-gravity facultative treatment system with controlled effluent release to a constructed wetland as described in Subsection 9.6. Compared to MBR and mechanical aeration, the proposed system has lower capital cost, almost no mechanical equipment, no pumping, simpler operational procedures, longer life, and lower life cycle costs.

11. PUBLIC INVOLVEMENT PROCESS

No exceptions taken.

12. RECOMMENDED WATER & WASTEWATER FACILITY UPGRADES

12.1. Introduction

Revise bullet item number 3 on page 70 to read as follows:

3. Convert the existing lagoons into an all-gravity facultative treatment system with controlled effluent release to a constructed wetland.

Strike bullet item number 4 on page 70.

12.2. Recommended Water Source, Treatment & Storage Option

Strike the first two paragraphs on page 72.

12.3. Recommended Water Distribution Option

No exceptions taken.

12.4. Recommended Wastewater Collection Option

No exceptions taken.

12.5. Recommended Wastewater Treatment and Disposal Option

Replace text with the following.

With the benefit of the studies conducted to date, it is concluded that the most cost effective wastewater treatment and disposal solution is to convert the existing lagoons into an all-gravity facultative treatment system with controlled effluent release to a constructed wetland. See Figure 9-1. The proposed system would utilize the two existing cells for primary and secondary facultative treatment, allowing both cells be kept in a full and operating condition year-round to stabilize treatment conditions and preclude groundwater infiltration. A third cell would be added to hold effluent for controlled release to a constructed wetland area during the summer and early fall. The entire wastewater treatment and disposal facility would be located



on property presently owned by the City and its operation would require less equipment, energy, and manpower than the existing system.

12.6. Transportation Impacts

No exceptions taken.

12.7. Management and Operations Impacts

Replace text with the following.

It is recommended that the City of Bethel hire management-level engineering staff to oversee, manage, and organize water and sewer utility services. The proposed improvements, including the facultative lagoon recommendation, are not expected to require changes in operations personnel.

13. PRELIMINARY COST ESTIMATES FOR UPGRADES

Replace with the following.

The 2005 Plan proposed a recommended capital improvement list of 44 water and sewer projects for an estimated capital cost of \$240,000,000. See Figure 13-1. Detailed cost estimates for each project are in the 2005 Plan, Appendix M.

Of these 44 projects, the first two have been completed. Since 2005, the Institutional Corridor a backup well and piping replacements have been proposed for the City's capital improvement list. Given the findings and funding constraints of 2013, the remainder of the list is hereby re-evaluated to select projects that best meet the future needs of the City of Bethel.

The initial evaluation is based largely on a review with Bethel Public Works staff during an October 2012 work visit using broad spectrum criteria to eliminate projects that are obsolete, cost prohibitive; operationally cumbersome; and/or not capable of delivering reliable long-term functionality for the City. Projects dropped from the 2005 Plan list after this first round are shown in Figure 12-2, leaving the remainder for further evaluation and prioritization according to specific criteria.

Accepted utility planning and engineering practice applies criteria to facilitate objective evaluation, balanced assessment of relative merit, and informed selection of the best options. The following criteria are hereby used to compare the shortlisted alternatives and the results presented in Table 13-3.

- *Functionality* – Effectiveness in accomplishing intended objectives
- *Operability* – Impact on operation and maintenance program
- *Cost Effectiveness* – Comparison of benefit to life cycle cost



Table 13-1. 2005 Recommended Capital Improvement List

Table 1-2
Project Priorities and Capital Cost Estimates

PRIORITY	CODE (a)	ITEM NO.	DESCRIPTION	PRESENT COST (b)	CUMULATIVE COST (b)	VSW-SFY FUNDING	NO. YEARS	CUMULATIVE FUNDING (c)
1	S	1	QFC No. II Lift Station and Forcemain Upgr	\$4,153,984	\$4,153,984	2006	1	\$10,000,000
2	S	2	Main Forcemain Upgrade (Ridgcrest to Lag	\$1,202,624	\$5,356,608	2006	1	\$10,000,000
3	W	1	Bethel Heights Piped Water and Sewer Up	\$2,248,000	\$7,604,608	2006	1	\$10,000,000
4	S	3	Wastewater Treatment Facility	\$18,944,000	\$26,548,608	2006/08	3	\$30,000,000
5	W	2	Small West Water Treatment Plant	\$3,315,680	\$29,864,288	2008	3	\$30,000,000
6	S	4	FAA Lift Station Upgrades	\$1,192,320	\$31,056,608	2008/09	4	\$40,000,000
7	S	5	Garage / Shop Facility	\$4,416,000	\$35,472,608	2009	4	\$40,000,000
8	S	6	Kasayuli Subdivision Lift Station and Force	\$3,687,360	\$39,159,968	2009	4	\$40,000,000
9	W	3	Kasayuli Subd. Water Station	\$5,275,648	\$44,435,616	2009/10	5	\$50,000,000
10	S	7	Ptarmigan Lift Station and Forcemain	\$4,631,648	\$49,067,264	2010	5	\$50,000,000
11	W	4	Tundra Ridge Subd. Water Station	\$4,114,608	\$53,181,872	2010/11	6	\$60,000,000
12	W	5	Nunvak Subd. Water Station	\$5,191,008	\$58,372,880	2011	6	\$60,000,000
13	S	8	Larson Subdivision Lift Station and Forcem	\$3,388,544	\$61,761,424	2011/12	7	\$70,000,000
14	W	6	Larson Subd. Water Station	\$4,046,528	\$65,807,952	2012	7	\$70,000,000
15	S	9	Harbor Area Lift Station and Forcemain	\$3,303,168	\$69,111,120	2012	7	\$70,000,000
16	W	7	Kilbuck Water Station	\$3,699,406	\$72,810,526	2012/13	8	\$80,000,000
17	W	8	Mission Lake Water Station	\$4,298,240	\$77,108,766	2013	8	\$80,000,000
18	W	9	Hospital Area Water Storage	\$4,879,680	\$81,988,446	2013/14	9	\$90,000,000
19	W	10	Enlarge West Water Treatment Plant	\$2,208,000	\$84,196,446	2014	9	\$90,000,000
20	P	1	Kilbuck North (Avenues)	\$9,965,469	\$94,161,915	2014/15	10	\$100,000,000
21	P	2	Kilbuck South (Avenues)	\$5,371,938	\$99,533,853	2016	10	\$100,000,000
22	P	3	Mission Lake Area West	\$5,902,734	\$105,436,587	2016/17	11	\$110,000,000
23	P	4	Mission Lake Area East	\$5,902,734	\$111,339,321	2016/17	12	\$120,000,000
24	P	5	Harbor Area West	\$7,076,094	\$118,415,415	2017	12	\$120,000,000
25	P	6	Harbor Area East	\$7,076,094	\$125,491,509	2017/18	13	\$130,000,000
26	P	7	Nunivak Subdivision West	\$4,246,375	\$129,737,884	2018	13	\$130,000,000
27	P	8	Nunivak Subdivision East	\$7,035,844	\$136,773,728	2019	14	\$140,000,000
28	P	9	Blueberry Subdivision Southeast	\$6,136,328	\$142,910,056	2019/20	15	\$150,000,000
29	P	10	Blueberry Subdivision Southwest	\$6,136,328	\$149,046,384	2020	15	\$150,000,000
30	P	11	Blueberry Subdivision Northwest	\$5,419,734	\$154,466,118	2020/21	16	\$160,000,000
31	P	12	Blueberry Subdivision Northeast	\$5,419,734	\$159,885,853	2021	16	\$160,000,000
32	P	13	Tundra Ridge Subdivision South	\$8,362,297	\$168,248,149	2021/22	17	\$170,000,000
33	P	14	Tundra Ridge Subdivision North	\$8,362,297	\$176,610,446	2022/23	18	\$180,000,000
34	P	15	Ulvaq Subdivision	\$7,789,813	\$184,400,259	2023/24	19	\$190,000,000
35	P	16	Larson Subdivision	\$6,500,375	\$190,900,634	2024/25	20	\$200,000,000
36	P	17	Airport Facilities	\$5,081,563	\$195,982,196	2025	20	\$200,000,000
37	P	18	Kasayuli Subdivision East	\$8,154,938	\$204,137,134	2025/26	21	\$210,000,000
38	P	19	Kasayuli Subdivision West	\$8,154,938	\$212,292,071	2026/27	22	\$220,000,000
39	P	20	H-Marker Lake Area	\$2,034,063	\$214,326,134	2027	22	\$220,000,000
40	P	21	Raven Subdivision West	\$6,093,563	\$220,419,696	2027/28	23	\$230,000,000
41	P	22	Raven Subdivision East	\$5,322,344	\$225,742,040	2028	23	\$230,000,000
42	S	10	Haroldsen Subdivision Lift Station and Forc	\$2,620,160	\$228,362,200	2028	23	\$230,000,000
43	W	11	Haroldsen Estates Water Station	\$3,554,880	\$231,917,080	2028/29	24	\$240,000,000
44	P	23	Haroldsen Estates	\$6,014,500	\$237,931,580	2029	24	\$240,000,000

Notes:

- (a) S = Backbone Sewer Improvements; W = Backbone Water Improvements; P = Piped Water & Sewer Improvements
- (b) Capital costs in 2005 dollars (present worth) +/- 15%
- (c) Funding based on fixed rate of \$10,000,000 per year

Table 13-2. First Cut to 2005 Recommended Capital Improvement List

Re-name to Sandpit Water Station

Projects 1 and 2 completed

Table 1-2
Project Priorities and Capital Cost Estimates

PRIORITY	CODE (a)	ITEM NO.	DESCRIPTION	PRESENT COST (b)	CUMULATIVE COST (b)	VSW-SFY FUNDING	NO. YEARS	CUMULATIVE FUNDING (c)
1	S	1	OFC No. 11 Lift Station and Force Main Upgr	\$4,153,984	\$4,153,984	2006	1	\$10,000,000
2	S	2	Main Force Main Upgrade (to Airport) Leg	\$1,686,680	\$5,840,664	2006	1	\$16,000,000
3	W	1	Bethel Heights Piped Water and Sewer Up	\$2,248,000	\$7,604,608	2006	1	\$10,000,000
4	S	3	Wastewater Treatment Facility	\$18,944,000	\$26,548,608	2008/08	3	\$30,000,000
5	W	2	Small West Water Treatment Plant	\$3,315,680	\$29,864,288	2008	3	\$30,000,000
6	S	4	K-Lift Station Upgrades	\$1,192,320	\$31,056,608	2008/09	4	\$40,000,000
7	S	5	Garage / Shop Facility	\$4,416,600	\$35,472,608	2009	4	\$40,000,000
8	S	6	Kasayull Subdivision Lift Station and Force	\$3,687,360	\$39,159,968	2009	4	\$40,000,000
9	W	3	Kasayull Subd. Water Station	\$5,275,648	\$44,435,616	2009/10	5	\$50,000,000
10	S	7	Piarmigan Lift Station and Force Main	\$591,648	\$49,067,264	2010	5	\$50,000,000
11	W	4	Tundra Ridge Subd. Water Station	\$4,114,608	\$53,181,872	2010/11	6	\$60,000,000
12	W	5	Nunvak Subd. Water Station	\$5,193,008	\$58,372,880	2011	6	\$60,000,000
13	S	8	Larson Subdivision Lift Station and Forecm	\$3,388,544	\$61,761,424	2011/12	7	\$70,000,000
14	W	6	Larson Subd. Water Station	\$4,046,624	\$65,807,962	2012	7	\$70,000,000
15	S	9	Harbor Area Lift Station and Force Main	\$9,933,168	\$69,111,120	2012	7	\$70,000,000
16	W	7	Kapusk Water Station	\$9,933,168	\$72,816,528	2012/13	8	\$80,000,000
17	W	8	Mission Lake Water Station	\$4,208,240	\$77,103,768	2013	8	\$80,000,000
18	W	9	Hospital Water Station	\$4,975,808	\$81,888,416	2013/14	8	\$80,000,000
19	W	10	Enlarge West Water Treatment Plant	\$2,208,000	\$84,196,446	2014	9	\$90,000,000
20	P	1	Kilbuck North (Avenues)	\$9,665,469	\$94,161,915	2014/15	10	\$100,000,000
21	P	2	Kilbuck South (Avenues)	\$5,371,938	\$99,533,853	2016	10	\$100,000,000
22	P	3	Mission Lake Area West	\$5,902,734	\$105,436,587	2016/17	11	\$110,000,000
23	P	4	Mission Lake Area East	\$5,902,734	\$111,339,321	2016/17	12	\$120,000,000
24	P	5	Harbor Area West	\$7,076,094	\$118,415,415	2017	12	\$120,000,000
25	P	6	Harbor Area East	\$7,076,094	\$125,491,509	2017/18	13	\$130,000,000
26	P	7	Nunvak Subdivision West	\$4,246,975	\$129,737,984	2019	13	\$130,000,000
27	P	8	Nunvak Subdivision East	\$7,035,844	\$136,773,728	2019	14	\$140,000,000
28	P	9	Blueberry Subdivision Southeast	\$6,136,328	\$142,910,056	2019/20	15	\$150,000,000
29	P	10	Blueberry Subdivision Southwest	\$6,136,328	\$149,046,384	2020	15	\$150,000,000
30	P	11	Blueberry Subdivision Northwest	\$5,419,734	\$154,466,118	2020/21	16	\$160,000,000
31	P	12	Blueberry Subdivision Northeast	\$5,419,734	\$159,885,853	2021	16	\$160,000,000
32	P	13	Tundra Ridge Subdivision South	\$8,362,297	\$168,248,149	2021/22	17	\$170,000,000
33	P	14	Tundra Ridge Subdivision North	\$8,362,297	\$176,610,446	2022/23	18	\$180,000,000
34	P	15	Ulvik Subdivision	\$7,789,619	\$184,400,259	2023/24	19	\$190,000,000
35	P	16	Larson Subdivision	\$6,500,375	\$190,900,634	2024/25	20	\$200,000,000
36	P	17	Airport Facilities	\$5,081,563	\$195,982,196	2025	20	\$200,000,000
37	P	18	Kasayull Subdivision East	\$8,154,938	\$204,137,134	2025/26	21	\$210,000,000
38	P	19	Kasayull Subdivision West	\$8,154,938	\$212,292,071	2026/27	22	\$220,000,000
39	P	20	H-Marker Lake Area	\$2,034,063	\$214,326,134	2027	22	\$220,000,000
40	P	21	Raven Subdivision West	\$8,093,653	\$220,419,695	2027/28	23	\$230,000,000
41	P	22	Raven Subdivision East	\$5,322,344	\$225,742,040	2028	23	\$230,000,000
42	S	10	Haroldson Subdivision Lift Station and For	\$2,926,400	\$226,668,200	2028	23	\$230,000,000
43	W	11	Haroldson Estates Water Station	\$3,554,800	\$231,917,600	2028/29	24	\$240,000,000
44	P	23	Haroldson Estates	\$6,614,500	\$237,931,800	2029	24	\$240,000,000

Add Institutional Corridor

Notes:

- (a) S = Backbone Sewer Improvements; W = Backbone Water Improvements; P = Piped Water & Sewer Improvements
- (b) Capital costs in 2005 dollars (present worth) +/- 15%
- (c) Funding based on fixed rate of \$10,000,000 per year

**Table 13-3. Bethel Water and Sewer Master Plan Update
Evaluation and Rating of Recommended Capital Improvements**

Item Number	Description	Comments	2013 Cost*	Evaluation Criteria**			Rating
				Functionality	Operability	Cost Effectiveness	
1	Bethel Heights Piped Water and Sewer Upgrade	<i>Replaces deteriorated piping, improves water quality, and reduces O&M cost. Avoids reducing level of service to existing piped customers.</i>	\$28,500,000	3	3	1	7
2	Wastewater Treatment and Discharge System Upgrade	<i>Improves treatment and enables compliance with State and Federal discharge regulations. Less expensive to operate than existing system.</i>	\$9,730,000	3	3	3	9
3	Sandpit Water Station	<i>Usefulness would be marginalized by Institutional Corridor (IC).</i>	\$3,945,659	1	1	1	3
4	FAA Lift Station Upgrades	<i>Will be necessary if Kasayuli and/or airport are connected. Usefulness would be marginalized by IC project.</i>	\$1,418,861	2	1	1	4
5	Kasayuli Subdivision Lift Station and Forcemain	<i>Reduces haul distance for 211 customers. Dependent on upgrade of FAA LS & FM.</i>	\$4,387,958	2	1	1	4
6	Ptarmigan Lift Station and Forcemain	<i>Closer to existing system than other alternatives. Connects directly into existing forcemain without adding load onto other lift stations.</i>	\$5,511,661	2	1	2	5
7	Tundra Ridge Subdivision Water Station	<i>Not as close to existing system as other alternatives. Consider whether water can be more efficiently delivered by extending existing distribution piping.</i>	\$4,896,384	2	1	2	5
8	Nunvak Subdivision Water Station	<i>Closer to existing system than other alternatives. Consider whether water can be more efficiently delivered by extending existing distribution piping.</i>	\$6,177,300	2	1	2	5
9	Larsen Subdivision Lift Station and Forcemain	<i>Dependent on implementation of Ptarmigan LS & FM. Shortens haul distance for 67 customers.</i>	\$4,032,367	1	1	1	3
10	Kilbuck North (Avenues)	<i>Closer to existing system than other alternatives. Could add 133 customers to piped service area.</i>	\$11,858,908	2	2	1	5
11	Kilbuck South (Avenues)	<i>Closer to existing system than other alternatives. Could add 49 customers to piped service area.</i>	\$6,392,606	2	2	1	5
12	Mission Lake Area West	<i>Closer to existing system than other alternatives and is contingent on the Kilbuck projects. Together with Mission Lake Area East, could add 135 customers to piped service area.</i>	\$7,024,253	2	2	1	5
13	Mission Lake Area East	<i>Closer to existing system than other alternatives and is contingent on the Kilbuck projects. Together with Mission Lake Area West, could add 135 customers to piped service area.</i>	\$7,024,253	2	2	1	5

14	Harbor Area West	<i>Dependent on implementation of adjoining piped water and sewer expansions. Together with Harbor Area East, could add 146 customers to piped service area.</i>	\$8,420,552	1	2	2	5
15	Harbor Area East	<i>Dependent on implementation of adjoining piped water and sewer expansions. Together with Harbor Area West, adds 146 customers to piped service area.</i>	\$8,420,552	1	2	2	5
16	Nunvak Subdivision West	<i>Closer to existing system than other alternatives. Together with Nunivak East, could add 47 customers to piped service area.</i>	\$5,053,186	2	2	2	6
17	Nunvak Subdivision East	<i>Closer to existing system than other alternatives. Together with Nunivak West, could add 47 customers to piped service area.</i>	\$8,372,654	2	2	2	6
18	Blueberry Field Subdivision Southeast	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, could add 275 customers to piped service area.</i>	\$7,302,230	1	2	2	5
19	Blueberry Field Subdivision Southwest	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, would add 275 customers to piped service area.</i>	\$7,302,230	1	2	2	5
20	Blueberry Field Subdivision Northwest	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, could add 275 customers to piped service area.</i>	\$6,449,483	1	2	2	5
21	Blueberry Field Subdivision Northeast	<i>Closer to existing sewer but further to existing water system than other alternatives. Together with the other three Blueberry subdivision alternatives, would add 275 customers to piped service area.</i>	\$6,449,483	1	2	2	5
22	Tundra Ridge Subdivision South	<i>Not as close to existing system as other alternatives. Consider whether water and sewer service can be more efficiently delivered by extending existing piping. The two Tundra Ridge projects would add 219 customers to piped service area.</i>	\$9,951,133	2	2	1	5
23	Tundra Ridge Subdivision North	<i>Not as close to existing system as other alternatives. Consider whether water and sewer service can be more efficiently delivered by extending existing piping. The two Tundra Ridge projects could add 219 customers to piped service area.</i>	\$9,951,133	2	2	1	5

Table 13-3, page 2 of 3

24	Uivuuq Subdivision	<i>Not as close to existing system as other alternatives. Close to AVCP Housing. Consider whether water and sewer service can be more efficiently delivered by extending existing piping. Could add 83 customers to piped service area.</i>	\$9,269,877	2	2	1	5
25	Larsen Subdivision	<i>Further from existing system than other alternatives. Sewer piping could utilize gravity flow. Would add 67 customers to piped service area.</i>	\$7,735,446	1	1	1	3
26	Airport Facilities	<i>Could utilize existing sewer piping. Water viability is enhanced by Institutional Corridor.</i>	\$6,047,060	2	2	2	6
27	Kasayuli Subdivision East	<i>Further from existing system than other alternatives. Dependent on completion of other projects. Including Kasayuli West, could add 211 customers to piped service area.</i>	\$9,704,376	1	2	1	4
28	Kasayuli Subdivision West	<i>Further from existing system than other alternatives. Dependent on completion of other projects. Including Kasayuli East, could add 211 customers to piped service area.</i>	\$9,704,376	1	2	1	4
29	H-Marker Lake Area	<i>Further from existing system than other alternatives. Dependent on completion of Blueberry Field projects. Could add 16 customers to piped service area.</i>	\$2,420,535	1	1	1	3
30	Raven Subdivision West	<i>Further from existing system than other alternatives. Dependent on completion of Kasayuli and other projects. Raven projects could add 54 customers to piped service area.</i>	\$7,251,340	1	1	1	3
31	Raven Subdivision East	<i>Further from existing system than other alternatives. Dependent on completion of Kasayuli and other projects. Raven projects could add 54 customers to piped service area.</i>	\$6,333,589	1	1	1	3
32	Institutional Corridor	<i>Provides piped service to a commercially viable area. Alternative A, Alternative B.</i>	\$12,500,000 \$15,600,000	3	3	2	8
33	Backup Well	<i>Backup source for City Subdivision WTP. 10" x 500' casing, 400 gpm</i>	\$300,000	2	3	3	8
34	Utility Manhole Replacment	<i>Removes and replaces aging components of the water and sewer systems adjacnt to City Courthouse.</i>	\$710,000	3	3	2	8

* 2013 Cost = 2005 cost times federal Construction Price Index of 232.531/195.3 (April 2013)/2005) Exceptions are item numbers 1, 2, 32, and 33. Costs for these projects were estimated by LCG based on studies completed since the 2005 Plan.

** Rating Points. 3-Excellent, 2-Good, 1-Fair, 0-Poor

Source: Bethel Water and Sewer Facilities Master Plan Update, April 2005, CRW Engineering Group, Inc.

Accordingly, the highest priority capital improvement projects recommended for the City of Bethel are as follows.

Project Description	2013 Capital Cost	*Rating
Wastewater Treatment and Discharge System Upgrade	\$9,730,000	9
Institutional Corridor	\$12,500,000 to \$15,400,000	8
Backup Well for City Subdivision WTP	\$300,000	8
Utility Manhole Replacement	\$710,000	8
Bethel Heights Piped Water and Sewer Upgrade	\$28,500,000	7

Rating Scale: 0 - 9 based on Functionality, Operability, and Cost Effectiveness Criteria

14. FUNDING OPTIONS

14.1. Funding Status

Strike the entire paragraph and replace with the following.

The City is in receipt of a \$7 million legislative grant appropriated by the State of Alaska to fund a modified version of the Institutional Corridor in fiscal year 2014. See Figure 14-1. **[John, please provide a copy of the legislation describing the project.]** A grant agreement, as of the time of this writing (July 19, 2013), is pending.

14.2. Funding

Insert the following paragraph.

As described previously, state and federal funding agencies are responding to appropriation curtailment with changes in qualifying criteria and priorities. Consequently, although the list of public funding agencies is essentially the same as those listed in the 2005 Plan, eligibility is becoming more limited while funds availability shrinks. The City is advised to search the respective websites for up-to-date contact, eligibility, and fund availability information.

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Instructions to the Inspector – Not part of inspection form

- Parts **One** and **Two** of the inspection score sheet should be completed in the office electronically, prior to conducting the site visit.
- Parts **Three** through **Eleven** should be completed in the field, during the site visit.
- There is a small space for comments after each question, and additional space at the back of the inspection checklist under the Additional Comments pages. Please note under each question if additional comments are written into that section.
- Comments should be annotated during the inspection. The landfill owner/operator will receive a copy of the score sheet with the inspection report. The more detailed the comments are, the more information the landfill owner/operator will have regarding their operations.
- If a question is not applicable to the specific landfill facility, place "NA" in the scoring box. If necessary, note why the question is not applicable.
- After completing the inspection score sheet, add up the scores and place the total in the appropriate box on the cover sheet of the inspection packet.
- Add up the total possible points the landfill could have earned (this will vary, depending on how many items were not applicable). Place the total in the appropriate box on the cover sheet of the inspection checklist.
- Calculate the percentage in the appropriate box on the cover sheet of the inspection checklist.
- Sign the front page of the inspection score sheet to certify the inspection.
- The checklist can be finalized manually in the field, or notes can be retyped electronically, after the site visit. Either way, the checklist will be provided to the landfill owner/operator as part of the inspection report.
- **Notes:**
 - How to find precipitation amounts:
 - Go to www.wunderground.com
 - At the top, type in location
 - Scroll down to History & Almanac section. Select "Detailed history and climate" and enter "go"
 - Select "custom"
 - Enter dates
 - How to determine if a facility is current on invoices:
 - Open BillQuick
 - On the top toolbar, select "Reports"
 - On the pull-down menu, select "More Reports"
 - Under Report File Name, select "ADEC Account Transactions"
 - Under the Date Filters box, select "Transaction Date" and "all dates"
 - Under the Other Filters box, select "Transaction Project ID" and enter the permit number under both the from and to boxes
 - At the bottom of the page, select "preview"
 - Information about requirements of the Local Government Financial Test is located on the Anchorage network drive in G:\EH\Eh-Sw\Inspection Forms\Financial Assurance Fact Sheet – Local Government Test

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Alaska Department of
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Solid Waste Program

Landfill: Bethel Landfill

Date of Inspection: June 21, 2013

ADEC Inspector: Doug Huntman

Participants: Dave Stovner
Gary Koester
Jacob Timmons

Weather Conditions: Sunny and 77 deg

Past Month Rainfall: 1.6 Inches

Scoring

Total points awarded: 308

Total possible points: 360

Final Score (percent): 85%

ADEC Signature: _____

Printed Name: Doug Huntman

Title: Environmental Program Specialist

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Part One: ADEC Information Gathering

This section should be filled out completely, prior to the site visit. This section is not scored, but the information will be used during the site visit to determine compliance with requirements.

#	Part One: ADEC Information Gathering
1	<p>PERMIT AND OPERATING PLAN – Review permit and operating plan to familiarize yourself with the requirements and approved operations for this landfill.</p> <p>Does the facility have a current ADEC permit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Permit Number: <u>SW2A002-17</u></p> <p>Expiration Date: <u>3/16/2017</u></p>
2	<p>SITE/DEVELOPMENT PLANS – Review site plans and development plans to familiarize yourself with the approved layout of the landfill and the conditions at the site.</p> <p>Check the conditions that exist at the landfill:</p> <p><input checked="" type="checkbox"/> Is the landfill located in or near wetlands?</p> <p><input checked="" type="checkbox"/> Is the landfill located on permafrost?</p> <p><input type="checkbox"/> Is the landfill located in a 100-year floodplain?</p> <p><input type="checkbox"/> Is the landfill located within 5,000 feet of any airport?</p> <p><input type="checkbox"/> Is the landfill located within 10,000 feet of an airport used by turbojet aircraft?</p> <p><input type="checkbox"/> Are there any drinking water wells within 500 feet of the landfill property boundary?</p> <p>Has a current/up-to-date site map been submitted?</p>
3	<p>LAND OWNERSHIP – <i>The landfill application must contain documentation that the operator is the landowner, or that the operator has obtained authorization from the land owner.</i></p> <p>Check the appropriate box.</p> <p><input checked="" type="checkbox"/> The operator is the landowner</p> <p><input type="checkbox"/> The landowner has authorized the landfill</p>
4	<p>PREVIOUS INSPECTIONS – Review previous inspection forms. List any issues that may still be outstanding that should be investigated.</p> <p>Frequency of cover, surface water sampling frequency and C&D management.</p>
5	<p>COMPLAINTS – If ADEC has received any complaints regarding the facility, list and describe them below:</p> <p>Concern in the community regarding waste not being covered at the landfill. Questions concerning the landfill capacity have also been raised in the past few months by the City Council. There was a fire at the landfill in June.</p>

Class I or II MSWLF Inspection Checklist



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#	Part One: ADEC Information Gathering										
6	<p>AUTHORIZED WASTE TYPES – <i>The landfill is required to have a permit that authorizes all types of waste disposed at the site.</i></p> <p>Check the types of waste that the facility is authorized to dispose:</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/></td> <td>Municipal Solid Waste</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Inert or C&D Waste (<i>May be disposed in MSW cell</i>)</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Regulated Asbestos Containing Material (RACM) (<i>Must be disposed in separate cell</i>)</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Sewage Solids or Biosolids</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Other (list) _____</td> </tr> </table>	<input checked="" type="checkbox"/>	Municipal Solid Waste	<input checked="" type="checkbox"/>	Inert or C&D Waste (<i>May be disposed in MSW cell</i>)	<input type="checkbox"/>	Regulated Asbestos Containing Material (RACM) (<i>Must be disposed in separate cell</i>)	<input type="checkbox"/>	Sewage Solids or Biosolids	<input type="checkbox"/>	Other (list) _____
<input checked="" type="checkbox"/>	Municipal Solid Waste										
<input checked="" type="checkbox"/>	Inert or C&D Waste (<i>May be disposed in MSW cell</i>)										
<input type="checkbox"/>	Regulated Asbestos Containing Material (RACM) (<i>Must be disposed in separate cell</i>)										
<input type="checkbox"/>	Sewage Solids or Biosolids										
<input type="checkbox"/>	Other (list) _____										
7	<p>SIGN REQUIREMENTS – <i>Many permits require signage that identifies the owner or operator, hours of operation, emergency contacts, or other information.</i></p> <p>List any signage requirements specified in the permit:</p> <ul style="list-style-type: none"> • Facility Identification • Owner/Operator Name • Hours of Operation • Emergency Phone Numbers • Prohibited Items and Wastes NOT Allowed for Disposal <p>* A sign prohibiting the disposal of PCB's in the landfill is required under the current permit. PCB's are not addressed on the current sign.</p>										
8	<p>WAIVERS – <i>The landfill may obtain waivers for requirements related to development or operation.</i></p> <p>List any ADEC-approved waivers: None</p>										

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#	Part One: ADEC Information Gathering																																
9	<p>MONITORING REQUIREMENTS – A facility may be required to monitor groundwater, surface water, gas, or other parameters. Requirements are specified in the permit or approved monitoring plan. By regulation, monitoring reports must be submitted to ADEC for groundwater and surface water. If reports are required for other types of monitoring, it will be specified in the permit. This information will help you determine if the operating record is complete.</p> <p>Check the types of monitoring that the facility is required to conduct, note the required sampling frequency, and check if reports must be submitted to DEC:</p> <table border="1"> <thead> <tr> <th>✓</th> <th>Type</th> <th>Sampling frequency</th> <th>Report to DEC required?</th> </tr> </thead> <tbody> <tr> <td></td> <td>Groundwater</td> <td></td> <td></td> </tr> <tr> <td>X</td> <td>Surface Water</td> <td>Bi-annual</td> <td>Yes</td> </tr> <tr> <td></td> <td>Gas</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Thermal</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Slope Stability</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Piezometer</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Other</td> <td></td> <td></td> </tr> </tbody> </table>	✓	Type	Sampling frequency	Report to DEC required?		Groundwater			X	Surface Water	Bi-annual	Yes		Gas				Thermal				Slope Stability				Piezometer				Other		
✓	Type	Sampling frequency	Report to DEC required?																														
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	Gas																																
	Thermal																																
	Slope Stability																																
	Piezometer																																
	Other																																
10	<p>MONITORING LOCATIONS – Sampling must be conducted at approved wells or sites. Locations are specified in the monitoring plan.</p> <p>Make a copy of a site plan or map that shows the locations of monitoring wells, surface water sampling sites, or other approved monitoring locations. Take the map with you to assist in field inspection.</p>																																
11	<p>ADDITIONAL PERMIT REQUIREMENTS</p> <p>List any additional permit requirements that are not addressed in the inspection checklist.</p> <p>Compact, consolidate, and cover all waste w/ minimum of six inches of soil daily.</p> <hr/> <p>Compact, consolidate, and cover C&D debris w/minimum of six inches of soil quarterly.</p> <hr/> <p>Ensure HHW is properly stored and maintained at LF until it can be shipped for disposal.</p> <hr/> <p>Prevent litter accumulation along litter control fence.</p> <hr/> <p>Conduct SW & visual monitoring at LF as described in monitoring plan dated 7/3, 2006.</p> <hr/> <p>Conduct SW sampling in May and Sept at 4 compliant sites and one background, submit monitoring report to ADEC no later than 60 days after receiving the results.</p> <hr/>																																

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Part One: ADEC Information Gathering

12 **FINANCIAL ASSURANCE** –*The landfill must demonstrate financial assurance to cover closure and post closure costs. The local government financial test is the most commonly used mechanism. Some financial assurance mechanisms require an annual update. 18 AAC 60.235, 18 AAC 60.265, 18 AAC 60.398, 40 CFR 258, Subpart G*

The landfill must submit this information with their permit application, and then make annual updates to their operating record. They are not required to submit the updates to DEC.

Check the type of financial assurance used :

- Local government financial test (requires annual update)
- Corporate financial test (requires annual update)
- Trust Fund
- Surety Bond guaranteeing payment or performance
- Letter of credit
- Insurance
- Corporate guarantee
- Local government guarantee
- Other state-approved mechanism

List the requirements for the type of financial assurance used:

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Part Two: ADEC Records Review

This section should be completed and scored in the office, prior to conducting the site visit.

#	Part Two: ADEC Records Review	POINTS	
		Possible	Score
1	<p>FEES – The landfill is required to pay annual and other fees to ADEC. 18 AAC 60.700</p> <p>Is the facility current on payment of all fees? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Date of last payment: <u>March 2012</u></p> <p>OR</p> <p>Amount owed: _____</p>	5	5
2	<p>MONITORING REPORTS – A facility may be required to monitor groundwater, surface water, gas, or other parameters. Groundwater and surface water reports MUST be submitted to ADEC. Submission of gas and other monitoring reports may be required by permit.</p> <p>NOTE to inspector: The project manager should be reviewing and communicating about monitoring reports as they are received. 18 AAC 60.810, 18 AAC 60.830, permit condition</p> <p>Does the facility submit the required monitoring reports to ADEC? No</p> <p>Do monitoring reports address all required types of monitoring? Yes</p> <p>Are monitoring reports complete and contain required analyses? No</p>	30	25

Part Three: Landfill Records

This section, and all remaining sections, should be completed at the landfill facility during the site visit.

#	Part Three: Landfill Records	POINTS	
		Possible	Score
1	<p>PERMIT – A copy of the permit application and current permit must be kept in the operating record. 18 AAC 60.235</p> <p>Is a copy of the permit application and current permit in the operating record? Yes</p>	10	10
2	<p>OPERATIONS PLAN – The operations plan should be used as a guide for day to day operation of the landfill. A copy must be kept in the operating record. 18 AAC 60.210, 18 AAC 60.235, permit</p> <p>Does the operating record contain a copy of the operations plan? Yes</p> <p>Is a copy of the operations plan available to landfill staff? Yes</p>	10	10

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#	Part Three: Landfill Records	POINTS	
		Possible	Score
3	<p>WASTE QUANTITY TRACKING – <i>The facility must maintain records of amount of waste received.</i> 18 AAC 60.210, 18 AAC 60.395</p> <p>How is waste tracked? <input type="checkbox"/> Weight <input checked="" type="checkbox"/> Volume</p> <p>Do records appear to be accurate and complete? Yes, records are kept 5 years.</p>	5	5
4	<p>TRAINING – <i>Landfill staff must receive training to recognize regulated hazardous waste and PCB waste. Class I landfills must employ at least one operator or manager who has at least 2 years experience in landfill operations and who holds a current MOLO certification. Records of training must be kept in the operating record.</i> 18 AAC 60.235, 18 AAC 60.240, 18 AAC 60.335</p> <p>Does the landfill have a record showing that operators have received training to recognize regulated hazardous waste and PCB waste? Dave is up to date with the HAZWOPER certification. Gary K. was not allowed to participate in the Freon removal class. Large stockpile of refrigerators and freezers that need to be processed.</p> <p>For Class I landfills, does the landfill have a record showing that at least one operator or manager has current MOLO certification? Dave and Gary K. do not have a current MOLO certification.</p>	5	2
5	<p>RANDOM INSPECTION RECORDS – <i>The landfill must perform random inspections of incoming waste loads to identify any regulated hazardous waste or PCB waste. Records of the inspections must be available for review.</i> 18 AAC 60.235, 18 AAC 60.240</p> <p>Are random waste inspections performed and recorded? Yes, good records of random screening for prohibited wastes.</p>	5	5
6	<p>ASBESTOS RECORDS – <i>The landfill must maintain asbestos shipment records for each load of RACM. Records must include contact information for the waste generator and waste transporter, the amount (cy) disposed, and the date of receipt. The landfill must maintain an up-to-date map or site plan showing the boundaries of the asbestos cell. The landfill must maintain up-to-date records of the amount of waste in the RACM cell, including depth and the total volume.</i> 18 AAC 60.450</p> <p>Does the landfill maintain complete asbestos shipment records for each load of RACM received? No records for disposal of Asbestos. Bethel is not permitted to accept asbestos, and to the best of the landfills knowledge they have not accepted asbestos. Screening for Asbestos is not adequate. Asbestos is not listed on the entrance sign as a prohibited item.</p> <p>Does the operating record contain an adequate, up-to-date map of the asbestos cell? N/A</p> <p>Does the operating record contain up-to-date information about the depth and total volume of RACM in the asbestos cell? N/A</p>	5	2

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#	Part Three: Landfill Records	POINTS									
		Possible	Score								
7	<p>GAS MONITORING – <i>If explosive gas is monitored, it must be measured in all facility structures and at the property boundary, and records maintained. Reports may or may not have to be submitted to ADEC. 18 AAC 60.350</i></p> <p>If the landfill monitors for gas, and is NOT required to submit reports to ADEC, review the gas monitoring records. Is landfill gas monitored and recorded as required?</p> <p>(Note: This should be scored as “not applicable” if reports are submitted to ADEC.)</p>	10	N/A								
8	<p>VISUAL MONITORING – <i>Visual monitoring must be performed at least monthly and recorded on a form approved by ADEC. Records must be maintained for at least 5 years. 18 AAC 60.800</i></p> <p>Does the operating record contain copies of <u>monthly</u> visual monitoring reports? Yes, reports are stored at the landfill and are up to date.</p>	10	10								
9	<p>COST ESTIMATES – <i>The landfill must update closure and post closure cost estimates annually to adjust for inflation. Documentation must be kept in the operating record. 18 AAC 60.235, 18 AAC 60.265, 40 CFR 258.71(a)(2) Subpart G</i></p> <p>Does the operating record contain appropriate and up-to-date (i.e. annual) closure and post-closure cost estimates?</p> <p>What is the date of the latest estimate? <u>November 10, 2011</u></p>	5	5								
10	<p>FINANCIAL ASSURANCE – <i>The landfill must demonstrate financial assurance to cover closure and post closure costs. Documentation must be kept in the operating record. The local government financial test is the most common. The local government and corporate financial tests require an annual update. 18 AAC 60.235, 18 AAC 60.265, 40 CFR 258.71(a)(2) Subpart G</i></p> <p>What type of financial assurance does the landfill use?</p> <p><input checked="" type="checkbox"/> Local Government <input type="checkbox"/> Other _____</p> <p>If the Local Government Test is used, the following items must be updated annually:</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/></td> <td>A statement by the CFO that the government meets the 5 conditions of the local government test.</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>The independently audited year-end financial statements for the latest fiscal year</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>A report to the local government from the local government's independent certified public accountant (CPA) or the appropriate State agency stating the procedures performed and the CPA or State agency's findings</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>A copy of the comprehensive annual financial report (CAFR) or certification that the requirements of General Accounting Standards Board Statement 18 have been met</td> </tr> </table> <p>Does the operating record contain all required elements of the financial assurance documentation? Is the financial assurance documentation up-to-date? Yes</p> <p>What is the date of the latest update? <u>November 10, 2011</u></p>	<input checked="" type="checkbox"/>	A statement by the CFO that the government meets the 5 conditions of the local government test.	<input checked="" type="checkbox"/>	The independently audited year-end financial statements for the latest fiscal year	<input checked="" type="checkbox"/>	A report to the local government from the local government's independent certified public accountant (CPA) or the appropriate State agency stating the procedures performed and the CPA or State agency's findings	<input checked="" type="checkbox"/>	A copy of the comprehensive annual financial report (CAFR) or certification that the requirements of General Accounting Standards Board Statement 18 have been met	5	5
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#	Part Three: Landfill Records	POINTS																									
		Possible	Score																								
11	<p>OTHER OPERATING RECORD ITEMS – <i>The facility is required to maintain many other items in the operating record. 18 AAC 60.235, 18 AAC 60.305, 18 AAC 60.310, 18 AAC 60.810, 18 AAC 60.830</i></p> <p>Check each of the required items in the operating record:</p> <table border="1"> <thead> <tr> <th>Required?</th> <th>In Record?</th> <th>Item</th> </tr> </thead> <tbody> <tr> <td>No</td> <td>Yes</td> <td>Inspection records</td> </tr> <tr> <td>No</td> <td>No</td> <td>NOI or NPDES permit (if required)</td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>As-built drawings</td> </tr> <tr> <td>Yes</td> <td>Yes</td> <td>Monitoring plan (if required)</td> </tr> <tr> <td>No</td> <td>No</td> <td>Leachate recirculation records (if required)</td> </tr> <tr> <td>No</td> <td>No</td> <td>Documentation showing how the landfill is designed and operated to prevent bird hazard (if within 5,000 feet of an airport, or 10,000 feet of an airport used by turbojet aircraft)</td> </tr> <tr> <td>No</td> <td>No</td> <td>Documentation showing the landfill will not restrict floods and waste will not be washed out (if located in 100 year floodplain)</td> </tr> </tbody> </table>	Required?	In Record?	Item	No	Yes	Inspection records	No	No	NOI or NPDES permit (if required)	Yes	Yes	As-built drawings	Yes	Yes	Monitoring plan (if required)	No	No	Leachate recirculation records (if required)	No	No	Documentation showing how the landfill is designed and operated to prevent bird hazard (if within 5,000 feet of an airport, or 10,000 feet of an airport used by turbojet aircraft)	No	No	Documentation showing the landfill will not restrict floods and waste will not be washed out (if located in 100 year floodplain)	5	5
Required?	In Record?	Item																									
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Part Four: Landfill Development

#	Part Four: Landfill Development	POINTS	
		Possible	Score
1	<p>LANDFILL DEVELOPMENT – <i>The facility is required to follow the approved landfill site plans and development plans. If minor changes are made, they should not be detrimental to regular operations. Any major changes must be approved by ADEC. 18 AAC 60.233, 18 AAC 60.210, permit</i></p> <p>Is the facility following the site and developments plans? Yes</p> <p>If any minor changes have been made, are they detrimental to operations? No</p> <p>Is the waste disposal area at least 50 feet from the property boundary? Yes</p>	20	20
2	<p>WATER WELLS – <i>Waste may not be disposed of within 500 feet of a drinking water well. If any wells exist within 500 feet of the property boundary, the site must be developed and operated to ensure that waste is not deposited too near the wells. 18 AAC 60.040</i></p> <p>Has development of the landfill or surrounding area impacted this separation zone? No</p>	10	10

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Part Five: Access

#	Part Five: Access	POINTS	
		Possible	Score
1	<p>SIGNAGE – A clearly legible sign must be posted at the entrance to the landfill. The sign must prohibit disposal of regulated hazardous waste and polychlorinated biphenyl (PCB) waste. Most permits also require signage that identifies the owner or operator, hours of operation, and emergency contacts. 18 AAC 60.240, permit</p> <p>Are signs prohibiting hazardous waste and PCB waste posted and clearly legible? No, this is not included on the sign.</p> <p>If additional signage is required, is it posted and clearly legible? Need additional signage to include asbestos disposal.</p> <p>Do the existing signs meet all of the requirements noted in Part One, Question 7? No, need to be updated.</p>	5	2
2	<p>ACCESS – Access to the landfill facility must be limited by the use of fencing, berms, or natural barriers to control public access to the site. This should prevent unauthorized traffic or dumping. 18 AAC 60.220</p> <p>Is access to and within the facility limited? Yes, two large gates are installed and locked afterhours restricting vehicular traffic.</p> <p>Is there any evidence of unauthorized access to the landfill (target shooting, off-road vehicles, etc.) No, although the landfill recently changed their policy to allow salvaging of automobile parts during work hours. This has eliminated people coming into the landfill afterhours to salvage.</p> <p>Is there any evidence of dumping outside the permitted areas? No, Bethel has dumpsters. There have been some reported problems with illegal dumping in dumpsters, but not on the ground dumping.</p>	20	20

Part Six: Working Cell Operations

#	Part Six: Working Cell Operations	POINTS	
		Possible	Score
1	<p>AUTHORIZED WASTE TYPES – The landfill is required to have a permit that authorizes all types of waste disposed at the site. 18 AAC 60.200</p> <p>Is there evidence that the facility has accepted or is accepting any wastes that are not addressed or authorized in the permit? (See answers in Part One, Question 6) Continue to see evidence of liquid waste being disposed of in Bethel landfill. There was quite a bit of municipal waste mixed in with the C&D cell.</p>	20	14

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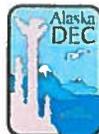
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#	Part Six: Working Cell Operations	POINTS	
		Possible	Score
2	<p>COVER - Waste must be covered by 6 inches of soil or an approved alternative cover at the end of each day or more frequently to control disease vectors, fire, odor, blowing litter, and scavenging. This includes the horizontal surface of a Balefill, although the vertical bale face may remain uncovered unless it is inactive for 7 or more days, exceeds 200 feet, or is causing animal attraction problems. 18 AAC 60.340</p> <p>Is there evidence of waste that was not covered, or was not covered sufficiently? Waste is not covered sufficiently at the Bethel landfill. The result is a lot of windblown litter, large area of exposed waste, and a landfill fire that was hard to extinguish due to large working face. Landfill needs to be covered regularly and the working face kept small. This issue is key to many of the problems associated with the landfill.</p>	20	2

Part Seven: General Operations

#	Part Seven: General Operations	POINTS							
		Possible	Score						
1	<p>BURNING - Open burning of municipal waste is not allowed at landfills. All fires must be extinguished immediately. Federal and State regulations allow operating a separate area for burning brush, overburden and clean wood. 18 AAC 60.355</p> <p>Is any waste other than approved brush, overburden, or clean wood burned at the facility? Burning of any kind is not allowed at the Bethel landfill. There was a report of a fire in May. The Fire Dept. was called and had to fight the fire for several hours. Several thousand gallons of water was used to put out the fire.</p> <p>Is there any evidence of uncontrolled fires? Yes</p>	5	0						
2	<p>LITTER - Litter must be controlled so that it does not become a nuisance or hazard. 18 AAC 60.233, 18 AAC 60.345</p> <p>Is excessive litter evident at or near the landfill? Green-up/Clean-up had not yet taken place at the landfill, so there was quite a bit of litter in the field between the landfill and the school. Litter fences had not been maintained as well as they had been in the past.</p> <p>Check the types of measures that are used to control litter at the landfill:</p> <table border="1" style="margin-left: 20px;"> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Litter fencing</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Litter collection</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Other <ul style="list-style-type: none"> • Brush placed strategically in LF to collect litter. • Working face is moved between summer and winter locations to take advantage of prevailing winds. </td> </tr> </table>	<input checked="" type="checkbox"/>	Litter fencing	<input checked="" type="checkbox"/>	Litter collection	<input type="checkbox"/>	Other <ul style="list-style-type: none"> • Brush placed strategically in LF to collect litter. • Working face is moved between summer and winter locations to take advantage of prevailing winds. 	5	1
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#	Part Seven: General Operations	POINTS	
		Possible	Score
3	<p>DUST, ODOR, NOISE, ETC. - <i>Dust, odor, noise, traffic, and other effects from the landfill must not become a nuisance or hazard to the public health, safety, or welfare. 18 AAC 60.233</i></p> <p>Are dust, odor, noise, traffic or other effects from the operation causing, or likely to cause, a nuisance to neighboring homes or businesses? Facility gets very dusty in the summer, affecting the nearby school.</p>	5	4
4	<p>SALVAGING - <i>Public salvaging, if allowed, must be limited to an area that does not hinder facility operation, create a safety hazard, or cause pollution. 18 AAC 60.220</i></p> <p>Is public salvaging restricted to a controlled area away from the working face? Yes, Recently changed policy to allow salvaging during working hours. People are not allowed into the facility when equipment is working. This policy virtually eliminated un-authorized salvaging after hours.</p> <p>Is the salvage area managed with respect to safety and pollution control? Fluids are removed from vehicles prior to backhaul. Vehicles staged in landfill do not have fluids or batteries removed.</p>	5	3
5	<p>DISEASE VECTORS AND ANIMALS - <i>Disease vectors, including wildlife and domestic animals, must be controlled so that the public health, safety, or welfare are not endangered by the spread of disease or contact with animals, and that the animals are not harmed by contact with the waste or become a nuisance. 18 AAC 60.230</i></p> <p>Is there any evidence (prints, scat, digging, etc.) of bear, fox, or other animals around the waste? Yes, evidence of birds as well as prints from foxes.</p> <p>Were there excessive numbers of birds present? Bethel has seasonal problems with eagles and gulls. Ravens in large numbers were present during the May inspection.</p> <p>Are there any reports of wildlife being harmed, or conditions that are likely to harm wildlife? Large area of uncovered waste has the likely hood of impacting birds. The large pile is also an attractant to foxes and other smaller vermin.</p>	5	2
6	<p>INACTIVE AREAS - <i>Areas that have not received or will not receive waste for more than 90 days, but have not yet reached the final capacity or elevation, must receive an intermediate cover within 7 days of the last waste placement. The area must be covered with 12 inches of soil and graded to prevent ponding and erosion. 18 AAC 60.243</i></p> <p>Have inactive areas been appropriately covered and graded? Landfill had not been covered in some time. Large cell, working face was very spread out. Not meeting conditions of the permit for cover. City not providing cover material for the landfill. Cover material frozen into the ground during the time of the inspection. C&D cell needs to be covered. This too is a permit condition. Material from three years ago still present, and uncovered in the C&D cell.</p>	10	0

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#	Part Seven: General Operations	POINTS	
		Possible	Score
7	<p>STABILITY – <i>The landfill should be graded and shaped to preserve the integrity of the landfill.</i> 18 AAC 60.320</p> <p>Do any slopes appear to be unstable or potentially unstable? No</p> <p>Are any slopes abnormally steep? Yes, the main working face needed to be graded. Large volume of uncovered waste at the working face. Cover application not meeting the conditions of the permit.</p>	10	7
8	<p>MAINTENANCE AND REPAIR - <i>The landfill must maintain structures and components of the facility, and repair any structural changes or damage to the facility, including the liner, leachate system, and other components.</i> 18 AAC 60.815</p> <p>Are there signs of damage to the liner such as tears, or leachate escaping the lined cell or treatment system? N/A</p> <p>Are there signs of damage to any other component of the facility? Repairs are carried out as necessary at the Bethel landfill. There is a nice shop used to repair all of the rolling stock. There were upgrades to the outside gate as well as a new operator shack. The litter fence was also in good shape.</p>	10	10

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Part Eight: Special Waste

#	Part Eight: Special Waste	POINTS	
		Possible	Score
1	<p>RACM CELL - <i>If the facility accepts RACM, it must be disposed of in a separate cell. Access to the asbestos site must be restricted, and there must be no visible emissions. 40 CFR 61.154</i> <i>Asbestos loads must be inspected and handled to ensure that all friable asbestos is sealed in leak-proof containers, deposited in the asbestos cell without damaging the containers, and covered by the end of the day with 6 inches of soil. 18 AAC 60.450</i></p> <p>Is RACM disposed of in a separate cell from MSW?</p> <p>Is there evidence of visible emissions?</p> <p>What measures are used to prevent public access to the asbestos disposal area?</p> <p>Are any exposed or broken bags evident?</p> <p>Has adequate cover been applied to the waste?</p>	25	N/A
2	<p>NON-RACM HANDLING - <i>Non-RACM waste must be handled so that it does not become friable. It must be covered within 24 hours using procedures that prevent the release of asbestos fibers. 18 AAC 60.450</i></p> <p>Does the facility have a clear policy for handling non-RACM waste? Yes, there is a policy outlined in the operations plan. I am not sure however that landfill is actually covering the waste within the required 24 hour time period. I did not observe any cover for the most part at the C&D cell, and there was not a separate area for non-RACM material.</p>	5	3
3	<p>MEDICAL WASTE - <i>Medical waste may not be disposed at the landfill unless it has been treated by an approved process.. 18 AAC 60.030</i></p> <p>Is treated medical waste accepted? Yes, treated medical waste is accepted from the YK hospital. I spoke with a representative from YK hospital, and he informed me that waste was shipped out to be treated and disposed.</p> <p>How does the landfill verify treatment of the waste? The waste is verified through the random screening at the gate.</p>	5	5

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#	Part Eight: Special Waste	POINTS	
		Possible	Score
4	<p>LIQUID WASTE - <i>Liquid waste may not be disposed at the landfill, with the exception of small quantities (one gallon or less) of containerized household waste. This prohibition includes leachate and baler squeezings, unless recirculation has been approved under an RD&D permit. 18 AAC 60.360</i></p> <p>Are any prohibited liquids disposed at the landfill? Yes, I observed 5 gallon jugs with used cooking oil mixed in with the municipal waste. There is no alternative for cooking oil disposal other than throwing out in the municipal dumpsters. The City should set up a collection program for used cooking oil and then dispose of it in the shop's used oil burner. This would divert a bulk of this waste from the working face.</p> <p>Are any fluids generated at the landfill (leachate or baler squeezings)? Bethel landfill does not have a leachate collection system. I did not observe any leachate being generated at the landfill during the inspection.</p> <p>If so, how are they disposed? N/A</p>	10	6
5	<p>SEWAGE SOLIDS - <i>If sewage solids are disposed at the landfill, they may not be a regulated hazardous waste or PCB waste; they may not contain free liquids (paint filter test); and disposal must meet vector reduction requirements (may be done with daily cover). 18 AAC 60.365</i></p> <p>Based on its appearance and/or test records, do sewage solids meet the liquids restriction? N/A</p> <p>Are sewage solids covered daily? N/A</p>	10	N/A

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#	Part Eight: Special Waste	POINTS	
		Possible	Score
6	<p>VEHICLES - <i>Vehicles may not be disposed at the landfill unless all fluids and batteries have been removed. If undrained vehicles, or the fluids and batteries removed from them, are stored at the landfill for later disposal or recycling, they must be managed to prevent release of fluids. 18 AAC 60.035, 18 AAC 60.010</i></p> <p>Are vehicles disposed at the landfill? Vehicles are staged at the landfill for eventual backhaul. Fluids and batteries are removed prior to shipping out. Alaska Logistics took out some valuable metal from vehicles last summer but left the vehicle "carcasses". At the time of the inspections the City and Alaska Logistics were in negotiations for this summer's removal of vehicles. Start date and inventory of material at the landfill was being negotiated at the time of the May inspection.</p> <p>Are all fluids and batteries removed prior to disposal? How is this confirmed? Yes, Alaska Logistics is responsible for making sure these are removed. There are penalties for transporting vehicles over water that have not been properly serviced, so to avoid this removal is done to Coast Guard standards.</p> <p>Are the vehicles disposed in a stable location? Vehicles are staged in semi-stable locations. This is just a temporary staging area, and vehicles are stacked 4-5 high. Vehicles are scheduled to be removed this summer.</p> <p>If vehicles or the fluids/batteries removed from them are stored at the landfill, how does the landfill ensure no fluids are released? Fluids are stored in barrels near the car collection area. Gas is re-used, used oil is burned in the shop, and other fluids are packaged up and shipped out.</p>	10	7

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#	Part Eight: Special Waste	POINTS	
		Possible	Score
7	<p>WASTE STORAGE – <i>If the landfill collects and stores used oil, batteries, household hazardous waste, or other materials, they must be stored and managed to prevent release of fluids. 18 AAC 60.010(a)</i></p> <p>Check the materials that are collected and stored at the landfill:</p> <p><input checked="" type="checkbox"/> Used oil</p> <p><input checked="" type="checkbox"/> Batteries</p> <p><input type="checkbox"/> Household hazardous waste (paint, chemicals, etc.)</p> <p><input type="checkbox"/> Other (list): _____</p> <p>_____</p> <p>_____</p> <p>Are the materials stored and managed in a manner that will prevent the release of fluids? The City maintenance shop will take used oil if it from a reliable source. Used oil is collected in a tank and used in one of two the shop heaters. The program is not well advertised, and it was reported that the shop won't always take used oil. The battery recycling program in Bethel is pretty poor. This is discouraging especially since the battery recycler is IN Bethel. Batteries were stored uncovered and had accumulated water/ice. Batteries should be collected weekly and stored inside prior to shipping out for recycling.</p> <p>Is there any evidence that fluids have leaked or spilled in the area? Some staining on the ground near the vehicle fluids removal station.</p>	10	2
8	<p>REMOVAL OF REFRIGERANTS – <i>The landfill must ensure that refrigerants from vehicles and appliances (refrigerators, freezers, air conditioners) do not vent to the environment. All refrigerant must be removed by a certified removal technician. 40 CFR 82</i></p> <p>How does the landfill ensure that refrigerants are removed from vehicles or appliances prior to disposal? All appliances are set aside in an area near the operator shack and staged for Freon removal. Appliances marked with spray paint when refrigerants removed. Vehicles are staged with fluids and batteries at the landfill. These are removed prior to being shipped for backhaul.</p> <p>Is refrigerant removed by a licensed refrigerant removal technician? There was a back log of freezers at the time of the inspection. It was reported that Gary K. was denied the required Freon removal training. Several dozen units were being stored and waiting Freon removal at the time of the inspection.</p>	5	2

Part Nine: Surface Water Controls/Impacts

#	Part Nine: Surface Water Controls/Impacts	POINTS	
		Possible	Score

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#	Part Nine: Surface Water Controls/Impacts	POINTS	
		Possible	Score
1	<p>RUN-ON/RUN-OFF - <i>The landfill must have a control system to prevent run-on water from flowing in to the active cell. Run-off must also be controlled so that it does not impact nearby surface waters. 18 AAC 60.225</i></p> <p>Does the control system prevent run-on from flowing into the active cell? Some big ponds of water near the C&D pile. Bethel does a fairly good job of keeping water out of the waste. This is a very wet area and there are many challenges to preventing water from coming into contact with waste.</p> <p>Is there evidence that run-off may be impacting nearby waters? No, the run-off does not seem to be escaping the confines of the landfill. Surface water monitoring wells have maintained that there is currently little impact to the surrounding area from the landfill.</p>	10	9
2	<p>SURFACE WATER AND PONDING - <i>Waste may not be placed in surface water, including ponded rainwater. Landfill surfaces should be graded to prevent ponding, and all ponded water must be removed within 7 days. 18 AAC 60.225</i></p> <p>Is there any evidence of waste in contact with surface water, including ponded rainwater? Several big ponds at the landfill. Caused by melting snow. Low area needs to be filled in. It was reported that this "pond" shows up every year in the spring.</p> <p>If there is ponded water at the landfill, has it been 7 days or more since the last significant rainfall? Result of snow melting and thawing.</p>	5	2
3	<p>LEACHATE SEEPS - <i>Leachate seeps must be prevented, or contained and controlled at the boundary of the waste management area. 18 AAC 60.225</i></p> <p>Are there any visible leachate seeps outside the landfill cell? Everything still frozen. Uncovered waste at the landfill presents the potential to impact the surrounding area and create leachate.</p> <p>What measures have been taken to contain and control the seeps?</p>	20	18
4	<p>PERMAFROST - <i>If the landfill is located on permafrost, it must be designed and operated so that the permafrost remains frozen. If the landfill settles and water is pooling, the operator must take corrective action. 18 AAC 60.227</i></p> <p>Are there any indications that permafrost is thawing (pooled water or settlement)? Some ponding in site. Most likely from run-off and snow melting during warmer days. Snow still on the ground.</p>	10	10

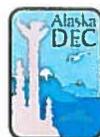
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#	Part Nine: Surface Water Controls/Impacts	POINTS	
		Possible	Score
5	<p>WETLANDS - <i>If the landfill is located in or near a wetland, it may not cause or contribute to significant degradation of the wetlands. 18 AAC 60.315</i></p> <p>Is there any evidence of stress to plants or wildlife as a result of landfill operations, discolored water, other evidence of wetland degradation? Did not notice impact to plants or wildlife. Snow still on the ground and plants still in winter mode. Uncovered waste presents the potential to impact the surrounding area.</p>	10	9

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Part Ten: Monitoring Locations

#	Part Ten: Monitoring Locations	POINTS	
		Possible	Score
1	<p>MONITORING LOCATIONS – <i>Monitoring must be conducted at approved locations. Surface water monitoring sites must be properly maintained. Groundwater monitoring wells must be properly maintained. 18 AAC 60.810, 18 AAC 60.825, permit</i></p> <p>Are surface water monitoring sites clearly identified and marked? Yes</p> <p>Are surface water monitoring sites located according to the approved plan? Yes</p> <p>Are monitoring wells in good condition and locked? I was only able to observe one of the wells. Access to the other wells was difficult due to snow and muddy conditions.</p> <p>Are other monitoring devices well-maintained and located as required? N/A</p>	10	8

Part Eleven: Additional Permit Requirements

#	Part Eleven: Additional Permit Requirements	POINTS	
		Possible	Score
1	<p>ADDITIONAL PERMIT REQUIREMENTS</p> <p>Is the facility complying with the additional permit requirements listed in Part One, Question 11?</p>	10 each	8

Class I or II MSWLF Inspection Checklist



Alaska Department of
Environmental Conservation
Division of Environmental Health
Solid Waste Program

Additional Comments

Part #	Question #	Comment

Sent: Monday, September 23, 2013 12:00 PM
To: Jennifer Dobson
Subject:FW: Dust Control
Attachments: Chip Sealing Distributors and Equipment.pdf

From: Brian Lefferts
Sent: Monday, September 23, 2013 11:42 AM
To: Jennifer Dobson
Subject: Dust Control

I noticed the city administration recommended \$3,000,000 for CaCl and other dust control measures as the third priority to AK FY15 capital budget. I would strongly encourage the city to consider asking for this to include a pilot project to chip seal Bethel roads.

Basic process – repair surface then a layer of emulsion oil is sprayed over the entire surface of the road. Immediately afterward, an even layer of crushed aggregate is spread. After a couple days, the excess rock is power-broomed off and a paint crew gets out there to stripe the road. The process is improved using rollers and specialized equipment, but this isn't required. The National Academies recently developed a synthesis of Chip Seal Best Practices. According to this document, the quality of a chip sealed road varies based on quality of the materials and craftsmanship. It's best done when it's warm and dry, still it can be done in temps as low as 50, and in extremely rainy locations such as WA and OR.

We have a good base in our roads around town. I think this could be added as a top layer rather easily, but it would be best to start with a test road. I think the legislature may be willing to help front the upfront capital equipment, materials, and a company to train a local road crew.

I think even the worst chip seal road's better than CaCl. Some chip seal equipment isn't that pricy either. In the long run I believe this to be a superior approach that is cheaper and more effective method of dust control.

It is legal to add liquid asphalt emulsion oil to roads in AK.

Jennifer Dobson, REHS
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YKHC, Office of Environmental Health & Engineering
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USED EQUIPMENT

- All Used Equipment**
- Used Asphalt Tanks (19)
 - Used Chip Spreaders (4)
 - Used Cold Feed Bin (13)
 - Used Crack Kettles (34)
 - Used Crusher/Screen (5)
 - Used Distributors (20)
 - Used Hot Air Lances (1)
 - Used Hot Boxes (27)
 - Used Infrared (12)
 - Used Line Stripers (0)
 - Used Milling (4)
 - Used Patch Trucks (15)
 - Used Pavers (10)
 - Used Plants & EQ (52) >>
 - Used Pugmills (11)
 - Used Recyclers (22)
 - Used Rollers (1)
 - Used Roofing (8) >>
 - Used Routers (9)
 - Used Sealcoating (15)
 - Used Silos (22)
 - Used Spray Patchers (5)
 - Used Sweepers (1)
 - Used Tank Trucks (30) >>
 - Used Truck/Tractor (3)

NEW EQUIPMENT

- All New Equipment**
- Chip Sealing
 - Chip Spreaders
 - Cold Feed Bins
 - Compaction
 - Crack Kettles
 - Crack Sealant

Chip Sealing Equipment

Home > NEW Equipment > Chip Sealing



Our Chip Sealing Distributors are designed for spraying tar emulsion or coal tar based products prior to the application of stone chips. Our asphalt distributor tanks are propane heated and ideal for spraying SS1H, CRS and CRS2P, with heating up to a max of 175F. Our pressure sealed tanks dramatically extend the material life and allows the material to be reheated when needed. Tanks have a double sealed lid which can be padlocked shut. A spray hose and wand is included. An optional spray bar and platform is available.

2 item(s) - Page 1 of 1

Sort ↓

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Product Id	Manufacturer	Model	Year	Size	Condition
Chip Seal Distributor Tank 300				300 gallons	New



Our 300 gallon Distributor trailers are ideal for chip seal application of tar emulsion, coal tar based products and chip seals such as SS1H, CRS, CRS2P. The pressure sealed tank allows material to be heated up to 170.F. Uses a propane burner heating system. Material is pumped via the onboard 8gpm circulation pump powered by a dependable Honda engine. Material can be ordered with a spray bar, rear platform and spray wand. Electric brakes, DOT lights, choice of hitch style, 8 gallon poly cleanout tank and 30 gal propane tank are standard equipment. Skid mount setup is available. Affordably Priced -- Ideal for Small Roadways, Parking Lots and Driveways

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\$8,400

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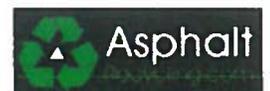
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- Distributors
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- Water Tanks Drop-On
- Water Tanks Kits
- Water Tanks Slip-In
- Water Trailers
- Water Trucks »
- Water Trucks & Tanks
- Water Truck Parts

**Chip Seal Distributor Tank
550**

550 gallon New



Our 550 gallon Distributor trailers are large enough for most chip seal jobs but still very affordable. Ideal for spraying tar emulsion, coal tar based products and chip seals such as SS1H, CRS, CRS2P. The pressure sealed tank allows material to be heated up to 170.F. Uses a propane burner heating system. Material is pumped via the onboard 8gpm circulation pump powered by a dependable Honda engine. Material can be ordered with a spray bar, rear platform and spray wand. Electric brakes, DOT lights, choice of hitch style, 8 gallon poly cleanout tank and 30 gal propane tank are standard equipment. Skid mount setup is available. Very Affordable - Easy To Operate

 **4 Images**

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\$12,185



MATERIALS & TOOLS

- Hand Tools
- Asphalt Patch
- Crack Sealer
- Parts

Shopper Tools

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- My Address Book
- My Orders
- My Favorites
- Items Found Alerts
- Price Drop Alerts
- Inventory Reports
- Financing

Seller Tools

- Sell My Equipment
- Dealer Inquiries
- Advertise

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- Payment Methods
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MEMORANDUM

DATE: 10/01/2013
TO: Lee Foley, City Manager
FROM: Chuck Willert, Public Works Director
SUBJECT: Manager's Report

Programs/Divisions

Public Works Director:

Utility Maintenance:

This month we continue to level and flush sewer lines in ASHA. We are also in the process of moving our office to the old Armory Compound. Discharging of our sewer lagoon will end the first week of October. We also received our water treatment supplies for the winter. We are also helping out with our new sander truck doing some welding. We are also working on Seventh Avenue heat trace for home owner's sewer system.

Hauled Utilities:

Property Maintenance:

We have been winterizing buildings getting ready for freeze up. There were lots of plumbing and electrical issues we have been working out. Heating equipment has been serviced and should be ready for the season. Vandalism is a problem lately inside and outside of the buildings.

We have had some projects to deal with such as building some containment cells for contaminated soil. We have had to re-vamp a couple of the Armory Buildings to meet our needs.

Road Maintenance:

Streets and Road is now done with hauling our road sand from the city sand pit to the salt sand pile on north side of the shop, and also we are now done with mixing our salt sand, for the road sander, that we will use this winter. We will use this on the roads this winter when the roads are slippery.

Streets and Roads haul in sand in back of the bus transit building to

build up the pad so the water would drain off. We also dug out the culvert ends that drain that area, and dug a ditch to the culvert, from the bus transit building so that it will drain.

Streets and Roads, hauled in sand to the land fill, and built up the road in the land fill that goes to the back, 2 feet or more up. We also built the turn, around up, at the back of the land fill. This should help for the water to drain off it, and not get so muddy in the spring.

Streets & Roads dug out the lower end of the culvert that crosses, Ptarmigan St. by Mallard Lane, and welded in 6 more feet to the lower end of it. In the spring, sand, and gravel would wash off the road and cover the lower end of the culvert. By adding 6 feet to the lower end, this should stop it from plugging the culvert.

Streets and Roads has been pushing up a large pile of sand with the D8 at the city sand pit so we can keep hauling through freeze up with our dump trucks. We will be hauling to the landfill, off and on, until we can, not haul no, more.

Vehicles and Equipment:

We are now into our cold weather transitioning period again. In terms of getting services and tune ups done on as many vehicles as we can, and getting winter tires lined up for the upcoming snowy season tire changing. We recently got our new truck lift installed which allows for more efficient services and repairs on a lot of our small and mid-sized city vehicles.

We have been slightly shorthanded of late and hope we can fill our vacant Mechanic position soon before the really cold weather hits. In between vehicle repairs, we have been trying to clean up and clear our backyard space behind the shop. Luckily there hasn't been a whole lot of major breakdowns of the utility trucks, which has been good for us in that it has allowed us to concentrate more on the smaller repairs on trucks...(broken work lights, small hydraulic leaks, brake adjustments, just to name a few).

Transit System:

Staffing Issues/Concerns/Training:

Budget/Financial:

See each department.