Scammon Bay Pre-Conceptual Design Report

Bulk Fuel and Power System Upgrades

Prepared for:
Alaska Village Electric Cooperative
Submitted: 9/15/2005

NANAPacific

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Executive Summary

NANA Pacific was responsible, in conjunction with Alaska Village Electric Cooperative (AVEC), for the development and execution of a Pre-Conceptual Design review for the community of Scammon Bay, Alaska. The goal of this exercise is to ascertain community readiness for participation in the bulk fuel/power system upgrades amalgamated program with an explicit recommendation to AVEC whether to advance to the CDR stage.

NANA Pacific recommends that the community of Scammon Bay advance to the Conceptual Design Review (CDR) stage. A quorum has recently been established for the Scammon Bay City Council which needs to be closely monitored as with any newly established form of government. All significant obstacles have been overcome which include a quorum being established along with a site identification. Site control is currently being secured on the part of AVEC, and the community has contributed positively to these initial stages.

To develop this recommendation, a site visit, review of program documents, review of secondary literature, and key informant interviews were undertaken and the data collectively analyzed by the project team.

The following observations are noted:

- **Community Plan.** The community plan of Scammon Bay needs and should be updated to reflect evolving priorities. The plan needs to be monitored and reviewed upon completion to determine how operating the Bulk Fuel facility fits into the completed plan.
- **Limited Power Inter-Tie Opportunity**. There are limited opportunities for sub-regional energy projects and suggest that a single facility for Scammon Bay be considered.
- **Wind Potential**. The need to secure anemometers to monitor the wind potential in Scammon Bay is suggested if anemometer resources allow.

- **Opportunity for Co-Mobilization.** There are limited opportunities for co-mobilization with other construction projects.
- **Location of the Scammon Bay/LYSD School.** The location of the new Scammon Bay school and its distance to potential marine headers makes an integrated facility cost prohibitive unless the district is able to provide matching funding. Furthermore, the school district has installed tanks at the present school site.
- **Village Corporation Tank Farm.** The Askinuk Village Corporation tank farm is was built in the mid 90's and in reportedly good condition. It is recommended to re-evaluate their participation in the amalgamated bulk fuel program during the CDR stage.

Furthermore, it is suggested that the following be attained before a CDR begins:

- Receive resolutions from the City Council and the Askinuk Village Corporation detailing their support for the project. The existing Village Council resolution can be interpreted as the Village Council being the lead operational entity for the management of the bulk fuel/power generation facility.
- Letter of support from Lower Yukon School District detailing their involvement (or non-involvement) in the amalgamated program. It is likely that LYSD would need to provide cash contributions to make their involvement cost feasible to donors;
- Execute a geotechnical investigation during the CDR stage.

Unless LYSD is able to provide matching funding and demonstrable involvement of the Askinuk Village corporation, a single facility with AVEC as the owner/operator would be the consideration for the CDR stage.

1. Introduction

NANA Pacific, in conjunction with Alaska Village Electric Cooperative (AVEC), was responsible for the development and execution of a Pre-Conceptual Design Review (Pre-CDR) for the community of Scammon Bay, Alaska. The goal of this exercise is to ascertain community readiness for participation in the bulk fuel/power system upgrades amalgamated program with an explicit recommendation to AVEC (to approve or defer).

To develop this recommendation, a site visit, review of program documents, review of secondary literature, and key informant interviews were undertaken and the data collectively analyzed by the project team.

2. Report Objective

This report is developed as a discussion of salient issues that emerged during the data collection process. Specific micro-data is found in the Scammon Bay Pre-CDR checklist attached to this document. There will be specific references made from the report to the checklist to facilitate review of the document.

3. Pre-CDR Obstacles

The following emerged as hindrances to the effective implementation of the Scammon Bay Pre-CDR:

- Lack of a quorum on the part of the City Council early in the Pre-CDR. (Quorum has since been established);
- Absence of submittal of appropriate community resolutions at the conclusion of the Pre-CDR;
- Identifying cost effective options for LYSD incorporation of the into the bulk fuel amalgamated program. The distance from the school to potential marine headers are a deterrent to a shared fuel line and facilities.

4. Community Leadership and Key Stakeholders[1]

At this time, the Scammon Bay Traditional Council appears to be the most dynamic of the village entities. The Traditional Council has a variety of social service and community development programs including environment, social work, and housing. However, the Traditional Council did not express strong interest in being an active operator in the bulk fuel/power system upgrades amalgamated program.

Of particular concern is the status of the city council. As of February 22, 2005, the city council did not have a quorum, resulting in the inability to conduct certain types of business. A quorum has since been established but should be closely monitored.

The Lower Yukon School District (LYSD) has built a new school in Scammon Bay with a scheduled opening of August 2005. Development of their plans, their tank farm, and fuel delivery occurred independently from the Pre-CDR process. There maybe opportunities for cost sharing if sites were considered on the east side of town.

The school has contracted with Crowley for the delivery of fuel from the city dock to the school. They will have two trucks on board at the time of delivery. This will add approximately 20 cents/gallon more than what it would cost for delivery with a fuel line. This is likely an on-going agreement for some years until a fuel fill line is constructed to the new site. LYSD estimated the distance from the school to the city dock to be about 1.5-2 miles. They have two tanks at the school site- 26,000 gallons and 30,000 gallons- or a total capacity of 56,000 gallons. LYSD's old site is still on the existing fuel fill line and is needed for the teacher housing complex.

The Askinuk Village Corporation is the final entity for consideration. Their fuel farm is reportedly in good condition. The corporation has expressed interest in co-locating facilities with AVEC, they are reportedly compliant with appropriate regulations and appear to be a stable, pivotal, and influential entity in the socio-economic and political

[1] Refer to section 1, 6, 7,& 9 for information on key stakeholders.

landscape of Scammon Bay. It is recommended to re-evaluate their participation in the amalgamated bulk fuel program during the CDR stage.

5. Demographics and Historical/Projected Fuel Use[2]

The most significant finding at this step is that actual population growth from 1993-2003 was 21.9%, which is lower than the projected 10-year population growth of 24.49% as calculated with program guidelines. While the difference is not dramatic, it should be considered and adjusted as needed during the CDR stage to reflect a more accurate projection of community needs and facility sizing.

Scammon Bay is a relatively vibrant rural Alaskan coastal community with an active fishing industry. It is reasonable to expect similar population growth in the next 10 years to that of the last 10 years. There does appear to be a new housing subdivision to be built by Association of Village Council Presidents (AVCP) Housing Authority and possibilities of new water and sanitation facilities.

There were no reported incidences of fuel rationing in the community.

6. Geographic and Physical Dimensions[3]

Scammon Bay is one of the more accessible communities on the Yukon Kuskokwim Delta due to its accessibility to the ocean and ocean barge service and has remained accessible in recent years.

6.1. Geotechnical Considerations

Soil conditions throughout the community are important to consider during any facility construction. There is likely a wide-range of geotechnical conditions in Scammon Bay, as the majority of the community is situated on an upward sloping hill. Because conditions will vary, a geotechnical survey is recommended during the CDR stage.

[2] Refer to Section 2 in the check-list.
[3] Refer to section 3 in check-list.

6.2. Foundation Types

Most of the buildings in the village, including large structures such as the old school and gymnasium, are supported on post and pad foundations. A good supply of gravel for the community is available from the Calista Corporation located in a quarry to the east of the community.

6.3. Proposed Sites

The community identified and proposed four sites during the site visit. Site #1, located on the west side of town, appears to be the most reasonable site, based on the analysis undertaken in the site selection decision matrix and discussion with stakeholders. This site is identified in the attached drawing.

There are other site possibilities closer to the new school sites that were not proposed by the community. These sites would require long fill lines that would be cost prohibitive without contributions from other entities.

6.4. Sub-Regional Energy Planning Considerations

There are limited opportunities for sub-regional energy projects, including power inter-ties. The closest community is Chevak, located about 30 miles to the south. The initial analysis at this time suggests that a single facility for Scammon Bay, separate from facilities for neighboring communities, be considered.

7. Technology

Major considerations regarding technology are discussed in the sections below.

7.1. Wind Potential

The U.S. Department of Energy National Renewable Energy Laboratory (NREL) data shows that wind potential in Scammon Bay is excellent. According to key stakeholders though, wind is excellent but uneven. Wind monitoring with an anemometer to further

evaluate wind conditions for the community should be considered if anemoter resources allow.

7.2. Power Inter-tie

Chevak, located 30 miles away, is the nearest viable community for an inter-tie. Factoring the distance to neighboring communities along with the terrain, suggests low feasibility for a power inter-tie.

7.3. Hydroelectric Potential

Independent Hydroelectric feasibility studies were undertaken for the community and areas surrounding the community, indicating low hydroelectric potential.

7.4. Extraordinary Construction Considerations

Arctic construction considerations (permafrost, weather, community isolation, logistics, availability of skilled labor, etc) and the appropriate measures to minimize its impact are of concern for the community.

8. Community Infrastructure

8.1. Co-mobilization

There are limited opportunities for co-mobilization with other construction projects. The community has already completed a health clinic (completed in 2004), Post Office, and school (completed August 2005). The Tribal Council has proposals in the funding pipeline for road improvements and housing for the 2005 and 2006 construction seasons through BIA. Sanitation feasibility studies and needs assessments are currently underway for the community. Therefore, there are potential for co-mobilization of construction activities between ANTHC and AVEC.

8.2. Logistical Obstacles

Scammon Bay has remained accessible in recent years for barge deliveries, with no reported delays or cancellations in ocean barge service. There have been no reported problems with moorage at the city dock.

8.3. Operations and Maintenance

The community has had difficulties maintaining their public facilities in the past, causing cash flow problems. In particular, the disrepair of the water treatment plant and the subsequent expenses involved with repairing these facilities has caused cash flow and financial difficulties for the City Council. Careful business planning and the need to budget for operations and maintenance should be emphasized.

8.4. Community Planning

The Scammon Bay Traditional Council has developed and adopted a community strategic plan for the community. There does not appear to be involvement from the City Council with this plan. It is noteworthy that bulk-fuel and power generation were not explicit components of a plan.

9. Owner(s)/Operator Assessment[4]

Three different owner/operators of the different tank farms emerged during the pre-CDR stage.

9.1. City Council/AVEC

The City Council is currently in partnership for the co-management of the existing Alaska AVEC Tank Farm. The City Council, like other rural Alaska City Councils, is experiencing financial and cash flow problems at this time, does not have a city administrator, and has only recently secured a legal quorum.

9.2. Lower Yukon School District

[4] Refer to section 7 in checklist.

The LYSD manages the school tank farms. They are planning on transporting fuel via fuel trucks from the city dock to the new school. Although, LYSD had previously contacted AVEC for the co-location of bulk-fuel and fuel lines, it was not feasible during planning for construction of the new school.

9.3. Traditional Council

The Traditional Council appears to be the more influential community entity at this time with several programs. The Tribal Administrator did not, however, express an interest in participating in the amalgamated bulk fuel program, citing diverging missions.

9.4. Askinuk Corporation

Askinuk Corporation is a vibrant presence in the community's political landscape and should be incorporated in an appropriate manner. Their bulk fuel facilities are in good condition.

Table 1 makes note of other discoveries related to the owner/operators mentioned above.

Table 1. Potential Operator Summary

Owner/Operator	Past Conflicts	Business Plan	Sufficient Human Resources	Compliance Issues	Financial Situation	Administrative Capacity
City Council	Yes	No	No	None reported	Weak	Poor
School District	None reported	No	Yes	None reported	Relatively strong	Good
Traditional Council	None reported	No	Yes	None reported	Moderate	Moderate
Askinuk Village Corporate	None reported	Yes	Yes	None reported	Moderate	Moderate

10. Legal/Regulatory Assessment

10.1. Permitting

The permits and regulatory interface include Alaska Fish and Game (AF&G), wetland permitting with the United States Army Corps of Engineers (USACOE), Fire Marshal,

United States Environmental Protection Agency (USEPA), and United States Coast Guard (USCG). Refer to Section 8 in the questionnaire for more information.

10.2. Facility Compliance

No facility compliance issues were reported during the course of research. However, it must be noted that the Pre-CDR did not involve a full compliance review of facilities.

10.3. Contaminated Sites

The only contaminated site on ADEC's web site involved the Alaska Army National Guard's facility in the community.

11. Project Sustainability

The City Council has not planned for a break-even framework in the operations of their facilities. To ensure the financial sustainability of the tank farm/power system program, the business plan development needs to be closely monitored and managed towards a break-even framework. Although the need for in-kind, matching contributions on the part of the community was discussed, it is questionable as to whether there are reasonable prospects.

As previously mentioned, the City Council has had difficulty maintaining a legal quorum, limiting its ability to establish commitments. As of August 2005, a legal quorum has been achieved.

12. Strengths

Discovered strengths for this project are:

- **Traditional Council**. It is a motivated presence for community action in the community.
- **Askinuk Village Corporation**. Opportunities exist for collaboration with the local village corporation.

- **CDR/Community Plan Enhancement.** Opportunity exists for simultaneous CDR and community plan enhancement.

13. Weaknesses

Discovered weaknesses for this project are:

- **City Council.** The Scammon Bay City Council has a newly established quorum. This situation needs to be monitored.
- **Community Plan.** Although a community plan exists, only one community entity has adopted it.
- **Planning for Sustainability.** There does not appear to be a history of planning for sustainability in other community infrastructure business plans.
- **Minimal opportunities for Co-Mobilization.** There do not appear to be opportunities for co-mobilization.
- **Limited Opportunities for Collaboration with Village entities.** There are apparent obstacles to incorporating LYSD (distance to potential headers and length of fuel fill lines) and the Askinuk Corporation (facility in reported good condition) into an amalgamated program. Therefore, it is likely that AVEC will have a single facility for its power facility and bulk fuel farm.

14. Specific Recommendations

NANA Pacific recommends the following for this project:

- Ensure that the City Council maintains a legal quorum.
- Resolutions are received from City Council and Village Corporation.
- Receive a Letter of Support from LYSD detailing their degree of participation in the amalgamated program.
- Prioritization on the part of project stakeholders on proposed sites.
- Secure an anemometer for wind monitoring for the proposed site.
- Monitor sanitation and water system project development for co-mobilization opportunities.

- Ensure that business plans are developed using a break-even analysis framework.
- Allocate sufficient resources for maintenance and renewal during the business plan development phase.
- Review tank farm facilities for ownership, capacity, and compliance.
- Clarify the feasibility of the armory's fuel tank in the amalgamated program.
- Integrate the community planning and CDR process to the greatest extent possible.
- Execute a geotechnical survey for the the proposed site.
- Plan for appropriate budget needs for the CDR stage, including geo-technical study, aerial photos, and site survey;

It is likely that AVEC will be the sole operator and owner for a new site in Scammon Bay.

15. Drawing

A preliminary drawing was developed to highlight proposed sites and facilities. Please refer to the attached document.

Scammon Bay Pre-CDR Checklist

1. Community and Key Stakeholder Contacts

Provide contact information for all key community contacts and stakeholders.

a. Name of Community. *Scammon Bay*

b. ANCSA Region. *Calista*

c. Community Key Contacts.

Table 2. Community and Key Contacts

Community Entity	Name	Position	Contact Information	Comment
City Council	Felix Walker, Sr.	Council Member	City of Scammon Bay PO Box 90 Scammon Bay, AK 99662 Ph: 907-558-5529Fax: 558-5626	Budget is in a state where a city clerk is the only staff member. The city clerk has been identified as a utility manager in other publications.
City Council	Tim Kaganak	Council Member	Same as above	
City Council	Paul Ulak	Council Member	Same as above	
City Council	Selma Kopanuk	City Clerk	Same as above	
Traditional Council	George Smith	Tribal Administrator	Scammon Bay Traditional Council PO Box 110 Scammon Bay, AK 99662 Phone: 558-5425 Fax: 558-5134	
AVEC Power Plant Operator	Lauren Chandler	Operator	Box 126 Scammon Bay, AK 99662 Ph: 907-558-5147 E-mail: lchandler@starband.net	
School District	Harvey Sundown Karen Goodwin	Principal Administrator	kgoodwin@do.lysd.k12.ak.us	

Community Entity	Name	Position	Contact Information	Comment
Housing Authority	Loren Chandler/ Bubba Abraham-Palacios(AVCP)	Housing Authority Representative	Box 126 Scammon Bay, AK 99662 Ph: 907-558-5147 E-mail: lchandler@starband.net	AVCP Housing Authority overseas the Housing Authority
Golder & Associates	Jan Deick	Hydrogeologist	907-341-6107	Contractor for hydrogeologic study.
Solutions, Inc	Kathie Wasserman	Consultant	907-735-2202	Business Plan and Accounting Systems Consultant
RUBA	Paul Chimiugak	Advisor	907-543-3475 paul_chimiugak@dced.state.ak.us	
YKHC Scammon Sanitarian	Jeff Severn	Field Environ. Health Officer, OEHE	Ph: 907-543-6424	
Askinuk Village Corporation	James Akerelrea	Chairman of the Board	PO Box 89 Scammon Bay, Alaska 99662 Phone (907) 558-5411 Fax (907) 558-5412 Work (907) 558-5529 e-mail: akeem258@msn.com	
Askinuk Village Corporation	Sebastian Kasayuli	Land Committee Chairman	Same as above. (907) 558-5226.	Works in the field and does not have a work number

2. Demographic/Future Demand Assessment

a. Demographics: Historical & Projections.

Historical: Describe demographic patterns over the last 10 years? *Comment and provide justification for any significant variances. Scammon Bay has experienced generally steady growth over the last 10 years. When viewing the growth rates over this time-frame, one notes some fluctuation from year to year. It does appear*

that these fluctuations are limited when viewed over time. Fluctuations such as these should be expected for a community the size of Scammon Bay.

Projections: Project population growth for the next 10 years.

The population is projected to increase by 22% over the next 10 years, assuming an average annual growth rate of 2%[5]. It is important to note that the actual average growth rate for this same period is 2.62%. Future socio-economic activities support the above projections. The school district will be opening a new school, opening of a Coastal Village Fisheries Fund office, and access to the commercial fishing industry support these projections.

Table 3. Historical Population Growth By Decade (US Census Data)

Year	1950	1960	1970	1980	1990	2000
Population	103	115	166	250	343	465
% Change	17.05%	11.65%	44.35%	50.60%	37.20%	35.57%

Table 4. Historical Population Growth By Year (DCRA/DOL Data)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	10 Year Change	10 Year Average
Population	360	378	384	434	425	459	450	484	501	465	491	470		
% Change		5.00%	1.59%	13.02%	-2.07%	8.00%	-1.96%	7.56%	3.51%	-7.19%	5.59%	-4.28%	24.34%	2.62%

Table 5. Population Projected By Year

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	10 Year Change
Population	479	489	499	509	519	529	540	551	562	573	584	
% Change	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	21.90%

b. Fuel Consumption.

Historical: Describe fuel consumption patterns over the last 5 years?

Community wide fuel deliveries has seen moderate fluctuations from year to year and lacking a discernible trend.

Has there been any fuel rationing?

Yes ☐ No ☒ Comments: *No reported fuel rationing.*

[5] The 2% population index is the standard used by AVEC in Bulk Fuel and Power Generation projects.

Comment and provide justification for significant variances.

Table 6. Fuel Delivered- Historical

Village Entity	Fuel Type	# of Deliveries & Amount Delivered	Years					
			2000	2001	2002	2003	2004	Mean
Lower Yukon School District	Unleaded	Amount Delivered	502	499	697	700	506	581
		Estimated # of Deliveries	1	1	1	1	1	1
City of Scammon Bay								
Askinuk Corporation	Unleaded	Amount Delivered				25896	73370	49633
		Estimated # of Deliveries				1	3	2
North Star Gas	Unleaded	Amount Delivered	59637	78407	69379			69141
		Estimated # of Deliveries	2	3	2			2
		Sub-Total Amount Delivered	59637	78407	69379		73370	70198
		Sub-Total-Estimated # of Deliveries	2	3	2	1	3	2
Alaska Village Electric Cooperative	Diesel/Heating Fuel #1	Amount Delivered	90735	80001	81700	76388		82206
		Estimated # of Deliveries	2	3	2	2		2
Askinuk Corporation	Diesel/HF#1	Amount Delivered				29128	54951	42040
		Estimated # of Deliveries				1	2	2
City of Scammon Bay	Diesel/HF#1	Amount Delivered				9565	10544	10055
		Estimated # of Deliveries				1	1	1
North Star Gas	Diesel/HF#1	Amount Delivered	49611	49566	56665			51947
		Estimated # of Deliveries	3	1	1			2
		Sub-Total- Amount Delivered	49611	49566	56665	38693	65495	52006
		Sub-Total- Estimated # of Deliveries	3	1	1	2	3	2
Lower Yukon School District	Diesel/HF#1	Amount Delivered	32907	27555	30579	25301	27358	28740
		Estimated # of Deliveries	2	2	1	1	1	1

Combined Fuel Deliveries (All Village Entities)	Diesel/HF#1	Amount Delivered	173253	157122	168944	140382	92853	146511
	Unleaded	Amount Delivered	60139	78906	70076		73876	70749

Projections[6]:

What is the projected fuel consumption demand for the community over the next 10 years? *See table 8 for projections*

What sources used and how calculated? *NANA Pacific utilized fuel records provided by the Yukon Fuel Company to project fuel demand. The projections were based upon the mean of the previous 5 years and an annual 2% increase in sales and demand.*

Describe short to medium term factors impacting future demand for fuel? *The primary driver in fuel demand will be population growth, the fuel needs of the new school, and a new housing division being promoted by AVCP Housing Authority. The projections below have assumed a 2% increase in demand. At this time there are insufficient variables to predict the increase in demand of the school and of the new housing division. Therefore, the 2% coefficient is the most reasonable predictor available.*

Table 7. Fuel Projections

Village Entity	Fuel Type	Fuel Demand & Projections (Assumes 2% annual increase in demand)										
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	% Change 2005-14
Lower Yukon School District	Unleaded	592	604	616	629	641	654	667	680	694	708	120%
Askinuk Corporation	Unleaded	71602	73034	74495	75985	77505	79055	80636	82248	83893	85571	120%

[6] Fuel deliveries Askinuk Corporation, City Council, and NorthStar Gas have all been combined for this analysis due to inconsistent deliveries over the 5 year time of analysis. If an amalgamated program is undertaken in Scammon Bay, individual projections would have to be undertaken.

Alaska Village Electric Cooperative	Diesel/Heating Fuel #1	83850	85527	87238	88982	90762	92577	94429	96317	98244	100209	120%
Askinuk Corporation	Diesel/HF#1	53046	54107	55189	56293	57419	58567	59739	60933	62152	63395	120%
Lower Yukon School District	Diesel/HF#1	29315	29901	30499	31109	31731	32366	33013	33673	34347	35034	120%

c. Peak & Average Load[7]

Historical: Describe peak & average load patterns over the last 10 years? *There has been an increase in peak and average load that seems to have tracked population growth over the last 10 years.*

Are there any seasonal factors? Yes ☒ No ☐ Comments: *Scammon Bay has experienced a steady increase in demand for electricity as evidenced by historical use patterns. Although a commercial fish processing facility does not exist in the community itself, it appears to be a hub of activity during the fishing season. The housing authority will also be building a new sub-division in the community, which could increase demand for electricity.*

Table 8. Scammon Bay Peak Load and Average Load/ %Change

Category	93	94	95	96	97	98	99	2000	2001	2002	2003	% Change (1993 & 2003)	10 Year Average
Peak Load	172	180	192	209	217	224	226	234	251	234	254	41.11%	222
%Change		4.65%	6.67%	8.85%	3.83%	3.23%	0.89%	3.54%	7.26%	-6.77%	8.55%		4.07%
Average Load	97	99	106	104	106	111	113	118	123	118	121	22.22%	112
% Change		2.06%	7.07%	-1.89%	1.92%	4.72%	1.80%	4.42%	4.24%	-4.07%	2.54%		2.28%

Table 9. Scammon Bay Historical Electricity Usage

Year	1992	1993	1994	1995	1996	1997	1998	1999	20S0	2001	2002	2003	Average Annual % change	10 year % change
kW/hr	344	345	359	382	397	425	437	430	463	489	440	445		

[7] Refer to AVEC Graph

% change		0.291%	4.058%	6.407%	3.927%	7.053%	2.824%	-1.602%	7.674%	5.616%	-10.020%	1.136%	2.488%	28.99%

3. Physical & Geographical Assessment

a. Does an existing community map exist? (Attach map) Yes ☒ No☐

Source/Comments: *Community map was secured through DCED with an approximate completion date of 1994.*

b. Do existing aerial photos exist for this community? (Attach photos) Yes ☒ No☐

Source/Comments: *Photos were available via the DCED web-site. Aerial maps are available, but were not procured from a commercial venue due to the availability of DCED map. For the CDR stage, an aerial photo should probably be procured.*

c. Is there recent geotechnical data available? (Attach if available) Yes ☒ No☐

Table 10. Available Geotechnical Data Summary

Source	Date	Comments
	1998	The tests were undertaken by probing the soft soil and digging one test pit to eight feet deep. The site is about one block south of the post office location and was poorly drained and needed to be filled to raise the grade before the house was constructed. The site is underlain by a brown sandy silt that is wet and soft to medium stiff to 3 feet and then gray silt that is moist and stiff. Water was seeping into the pit at 3 feet when the work was done in August. The soils are highly frost susceptible.
R&M Consultants	1998	Geotechnical investigation of the new solid waste facility and access road. A total of 23 borings were drilled in the vicinity of the new school site. At the solid waste site, nine borings were drilled to depths ranging from 10.5 to 25.5 feet. These borings revealed a thin surficial organic layer over two distinct layers of colluviums underlain by weathered bedrock at depths of 3 to 6 feet. Six of eight test holes located along the proposed access road met refusal on bedrock or colluvial boulders at depths of less than 8 feet. Six additional test holes were advanced to depths of 6 to 19 near the existing quarry. The test holes revealed a shallow surface layer of organic material and silt over sand and occasional cobbles and boulders

Howard Grey & Associates	1982	Prepared for AVCP housing authority. Seven hand dug and hand augured borings were dug to depths of 8 to 12 feet in the village. The borings show a variation of conditions. Borings SB-3, SB-4, and SB-5 were drilled near the post office site. The logs of SB-3 and SB-5 are available and show surface layer if peat to a depth of 1 foot. The underlying soil is soft to medium stiff silt. Other than a thin surface layer of seasonal frost, no frozen ground was found when the borings were made in November of 1981.
Alaska DOT & PF	1991	Done for the airport and provides information on the quarry site east of the village. Seven test pits were dug in the quarry area and show an overburden of organic soil, silt, and silty gravel over sandy gravel and then shows silt content of 11 to 32% and low degradation of values of 5. This data is consistent with characteristics of decomposed granite.

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d. Describe the annual heating degree days for this community?

The average annual heating degree days from 1993-2004 is 12,329 with a high of 13, 373 in 2000 and a low of 10,944 in 2003 for Bethel.

e. Is this community a snow drift site[8]?

Yes ☒ No☐

f. Provide a summary of ACOE community flood data.[9]

The ACOE flood data was limited for Scammon Bay. Further inquiries at the Alaska Department of Commerce and Economic Developed revealed little information. There is no flood report, nor insurance study, or flood monitoring data available. The community is on the Kun River System. The community is located on a hillside above the Kun River which periodically floods overbank to a depth of 4 to 5 ft. Floodwaters have come near buildings, but no buildings have been reported flooded. The majority of the city is built high above the Kun River and is not subject to flooding. An approximate 100 ft drop in elevation promotes good drainage for the community.

During the course of research, the community provided photos from the October 2004 storm, showing the airport inundated with water and the

[8] Reference AVEC list.
[9] Reference U.S. Army Corps of Engineers flood hazard data

village corporation tank farm surrounded by water. Flood water did not reportedly encroach the 25' contour line.

g. What is the recommended building elevation?

There was not a recommended building elevation indicated by the Army Corps of Engineers. However, photos from the October 19th and 20th 2004 storm show flooding and water inundation at the village corporation's tank farm and airport. Caution is warranted if this area is to be considered as a site.

h. What is the flood data and recommendations based upon?

☐ Survey Data ☒ Local Experience ☒ Other (Describe)

Photo documentation and discussion by/with community leadership. Review attached photos for documentation of the flood in Scammon Bay.

i. Describe the source of gravel available to the community or nearest to the community. *See table 12 and Comment below.*

Comment: The fill material site comes from a quarry site east of town accessible by road. The quarry seems to have been developed from a granitic intrusion and appears consistent with highly weathered granite. Based on tests done by ADOT&PF and Duane Miller and Associates, the available fill material is expected to be highly frost susceptible.[10]

Table 11 Available Gravel

[10] Sanitation Facilities Master Plan, January 2005.

#	Quality	Quantity Available	Owner	Distance away	Mode of Transportation	Price $/cu yd[11]	Comments/Description[12]
1	Average	Sufficient	Calista Corporation	0-3 miles	Road access	$2.80	For an undetermined reason, the project managers for the new school construction imported their fill material from elsewhere.

The fill material site comes from a quarry site east of town and is accessible by road. The quarry seems to have been developed from a granitic intrusion and appears consistent with highly weathered granite. Based on tests done by ADOT&PF and Duane Miller and Associates, the available fill material is expected to be highly frost susceptible.[13]

j. What are the possible marine header locations?

Site #1: Existing village corporation marine header site located west of the city dock.
Site #2: Existing village corporation marine header site located west of the city dock.
Site #3: Existing AVEC marine header site, located east of the city dock. Able to access and ROW of existing fill lines.
Site #4: Existing AVEC marine header site, located east of the city dock. This site presents the most difficult obstacle for access between the marine header and proposed site.

k. Are there any extraordinary construction cost considerations?

Skilled labor available?

Yes ☒ No ☐ Comments:
Community members reported that there was skilled labor available, including electricians and plumbers. The community has a local ordinance in place that requires local hire in certain instances. This needs to be confirmed with documentation of appropriate license and qualifications.

Length of fill pipelines?

Yes ☒ No ☐ Comments:
Site 4 presents the most difficulty in siting fill lines due to proximity of airport, sewage lagoon, and community. Sites 1&2 have the shortest fill lines and can benefit from the village corporation tank farm's fill

[11] Delivered
[12] Can AVEC use the material?
[13] Sanitation Facilities Master Plan, January 2005.

lines. Site 3 has need for longer fill line, but can benefit from the school's proximity.

Geotechnical/soil conditions?

Yes ☒ No ☐ Comments:
The lower sites identified are on a marshy flood plain. An additional site was adjacent to a closed land-fill. The school site appeared to be sound, with limited need for site development. Most of the buildings in the village, including the large structures such as the old school and gymnasium, are supported on post and pad foundations. There are examples in the village where some footings have heaved.

Climate?

Yes ☒ No ☐ Comments:
Scammon Bay is located on the coast with severe easterly winds, making access in the fall and winter difficult. The climate can be characterized as a maritime climate. Winters are often cold and windy, and summers are cool with off-shore winds, fog, and overcast. The Askinuk Mountains have an influence on precipitation and winds. The nearest weather station is Cape Romanzof Air Forces Station, located approximately 15 miles to the west. Data from this station can be considered representative of Scammon Bay. Summer temperatures average 49ºF and winter temperatures approximately 9ºF. The average annual temperature is 28.6ºF. Annual precipitation is approximately 10.5 inches, including 65 inches of snow. The Bering Sea is ice-free from June through October.

Transportation limitations?

Yes ☒ No ☐ Comments:
All freight needs to be barged in via ocean barge or air freight. The airport runway may not be adequate for the larger (C1-30) cargo planes. The runway is estimated to be 3000 feet.

Existing fill pipelines

Yes ☒ No ☐ Comments:
There are two existing fill pipelines. The Askinuk Fuel Storage

Facility has a fill line located on the west side of the village. The second fuel line runs from the city dock, adjacent to the access road, to the AVEC power plant facility, and up to the old school site.[14]

Other? Yes ☐ No ☒ Comments:

l. What types of security systems should be considered for the project?

Each owner's bulk tank fuel cell and the Power Plant will be separately fenced. Fencing will consist of 8 ft. of fabric and three strands of barbed wire per AVEC standard design criteria.

m. Should wind energy be considered in the amalgamated program?

Yes ☒ No ☐ Justification:
According to the NREL, wind rating in Scammon Bay is excellent. Likewise, comments from stakeholders indicate strong interest in the use of wind for the community. However, wind patterns are uneven.

It is recommended that an anemometer be implemented with meteorological towers, data logging equipment, and technical support to help Scammon Bay quantify their wind resource.

What is the NREL wind rating?

Scammon Bay is a high-value (superb), class-7 wind regime for wind power generation. It is recommended that AVEC erect a wind monitoring tower at the potential wind generator location.

What is its economic feasibility[15]?

For Nightmute (a community found in the same region with similar mobilization needs), the cost of erecting a wind tower was estimated at approximately $850,000 (2002 market data). Scammon Bay has potentially better ocean barge accessibility than Nightmute and more vibrant economic potential. These reasons suggest that its economic feasibility is good for this community. It is recommended that a detailed cost/benefit analysis be undertaken to fully assess the economic potential of wind.

[14] The transportation medium (fuel line or truck) of fuel for the new school is unknown at this time.
[15] Preliminary Opinion.

What are the USF&W issues?	*According to Ellen Lance with the USF&W service, there will be USF&W issues with wind power.*[16] *The stellar's eider moves throughout the area although critical habitat is not believed to be in the area, but migration occurs through the community. If the decision was made to proceed with wind, a correspondence to their office is required indicating specifics of the projects (where, when, and how). They would then proceed with a letter stating their concurrence with the project.*
Equipment availability? (crane)	*All equipment in Scammon Bay is in poor condition. Equipment will need to be mobilized from outside the community.*
Comments on wind potential from stakeholders.	*There was strong interest on the part of the community for wind turbines . The tribal office has an IGAAP grant through the EPA and a tribal environmental coordinator who could work with AVEC on the implementation of an anemometer. A wind program could conceivably be integrated into the environmental program coordinated through the Tribal Council's Office.*
n. Should heat recovery be included in the amalgamated program?	Yes☐ No ☒ Justification: *There does not appear to be enough viable data nor confirmed site location to fully recommend heat recovery. Assuming 500 ft or less as a basic parameter for feasibility, all four proposed sites are pushing this threshold to a viable user. The issue needs further analysis.*
Who are the potential users?	*There are no potential users within the 500 ft threshold for Sites 1, 2 & The Public Health Service water treatment plant is about 400 feet from Site 3. There does not appear to be any other potential users for these sites.* *Feasibility of using recovered heat for the water lines is unknown. The area surrounding Site 3 will be redeveloped once the new school is open. It is unknown who will be the immediate neighbors and if they are appropriate for recovered heat.*

[16] Telephone conversation with Ellen Lance on November 9, 2004.

What is the length of the supply lines per proposed site?	*Site 3: 400 feet. The other sites are beyond the 500 ft threshold.*
What is its economic feasibility[17]?	*Based upon this cursory analysis, the economic feasibility is low due to the distance to potential users.*
Comments from stakeholders.	*Interest was expressed on the part of community members for the application of recovered heat in the area.*
Should a power intertie be considered with other villages?	Yes☐ No ☒ Justification: *Scammon Bay's remote location, distance from neighboring communities, and rugged terrain makes power intertie feasibility low.*

Table 12. Distance Between Communities

Community Name	Distance From Scammon Bay	Observations
Paimut	20 miles south west	Need to cross Towak Mountain (2500 ft elevation. Small settlement.
Chevak	30 miles south	Cross Towak Mountain and open wetland tundra. Closest major settlement from Scammon Bay.
Utukariuk	40 miles north east	Cross open wetland tundra. Small settlement
Owl Village	40 miles east	Cross Towak Mountain and open tundra. Small settlement.

Existing route or road between communities?	*No roads exist between the communities.*
What infrastructure is available for the power intertie?	*No other infrastructure exists between communities.*
Any land owner or ROW issues between villages?	*Land owned by private land owners and the Calista Corporation.*
What is its economic feasibility[18]?	*The rugged terrain and distance between the communities may make the intertie option unfeasible from an economic perspective.*

[17] Preliminary Opinion.
[18] Preliminary Opinion.

Comments from stakeholders.	*The feasibility of a power interie was discussed, without positive feedback.*

4. Logistics Assessment

a. In considering how freight and fuel would be moved to the community, which scenarios best describes the means? Include all logistics options available and schedule.

Transportation Mode	Delivery Schedule	Company	Additional Information[19]
Ocean Barge- SW	June/October	Northland Barge & Crowley	No road access
Air Freight	On-Demand	ATS & Arctic Circle	

b. Is the village runway adequate for support of the project[20]?

Yes ☐ No ☐ Depends ☒

Justify Response. The runway is a 3000 ft runway maintained by the ADOT and is not accessible for C-130 use. Community leadership did not communicate previous difficulty with air cargo in the community. However, other larger cargo types of aircraft may be able to land in the community.

c. Describe the availability of heavy equipment in the local community.

Is sufficient and functional equipment is locally available or could be mobilized any time of the year?

Yes ☐ No ☒

It is strongly recommended to mobilize all heavy equipment. Local equipment is in very poor condition.

Table 13 Heavy Equipment Information

[19] Access due to seasonal issues, water levels of rivers, condition, and other general conditions.
[20] Airport accessible by large aircraft.

Type	Owner/Operator	Available for Use	Condition
Dump Truck	City Council	Yes☒ No☐	Poor
Front End Loader	City Council	Yes☒ No☐	Poor
Back-hoe	City Council	Yes☒ No☐	Poor
Small Dozer	City Council	Yes☒ No☐	Poor
1150 Dozer	City Council	Yes☒ No☐	Poor

5. Major Community Infrastructure Assessment

What is the existing community infrastructure?

Table 14 Community Infrastructure

Structure	Year Built	Description/Location	Plans/Needs for Renovation Expansion	Owner	Operator
Water and waste water system	1986	Center of the village, about 400 feet from	Master plan completed in January of 2005.	ANTHC	City Council/YKHC
School	1990	Tanks are included at the site.	New facility	Lower Yukon School District	Lower Yukon School District
Fuel Storage Facilities 1[21]	1970's	AVEC operated power plant & tank farm for the community.	Pre-CDR currently underway. 2005-2008	AVEC	AVEC/ City Council
Fuel Storage Facilities 2	1990		No Plans for expansion & renovation	Askiunuk Village Corporation	Askiunuk Village Corporation
Boardwalk	1990		Completed	YKHC	YKHC

[21] > 660 gallons.

a. What project information is available from other projects in the last 5 years? For future village construction projects? *See below.*

Table 15 RAPIDS Database-Scammon Bay, August 30, 2005

Agency	FY	Project Status	Project Description	Project Stage	Agency Cost	Total Cost
HUD	2004	Funded	Indian Housing Block Grant	Prelim.	$292,010	$292,010
EED	2003	Funded	Scammon Bay Replacement School	Const.	$17,029,762	$17,377,308
FAA	2003	Funded	Construct Snow Removal Equipment Building	Const.	$893,000	$952,533
HUD	2003	Funded	Indian Housing Block Grant	Const.	$331,222	$331,222
ANTHC	2003	Funded	Future Water & Sewer Upgrade Study	Design	$0	$250,000
ANTHC	2003	Funded	Scammon Bay Dental & Behavioral Clinic Additional Space	Prelim.	$0	$232,132
DCCED	2003	Funded	Water and Sewer Repair	Complete	$50,000	$52,632
ANTHC	2002	Funded	Clinic Design & Construction	Const.	$0	$575,662
HUD/ICDBG	2002	Funded	Primary Care Facility	Const.	$351,594	$351,594
HUD	2002	Funded	Indian Housing Block Grant	Complete	$291,199	$291,199
ANTHC	2002	Funded	Water/Sewer Connect – 3 homes	Design	$0	$100,000
ANTHC	2002	Funded	Water Treatment Plant	Const.	$0	$100,000
ANTHC	2002	Funded	Renovate Washeteria	Prelim.	$0	$85,902
Denali	2002	Funded	Bulk Fuel Storage Project	Design	$40,000	$40,000
DCCED	2002	Funded	Cemetary Fence Repair	Complete	$25,092	$26,413
BIA	2002	Funded	Winter Trail Marking to Hooper Bay (32 mi.) and Chevak (25 mi.)	Design	$19,152	$19,152
DCCED	2001	Funded	Sewage Lines & Manhole Repairs	Complete	$26,738	$28,145
COE	2000	Funded	Repair Fuel Storage Tanks – Cape Romanzof Long Range Radar Site	Const.	$3,682,000	$3,682,000
HUD	2000	Funded	Indian Housing Block Grant	Complete	$276,548	$276,548
DCCED	2000	Funded	Public Safety Building	Complete	$25,000	$26,316
AHFC	1999	Funded	Mutual help housing, 5 low income units	Complete	$79,200	$1,119,653
HUD	1999	Funded	Indian Housing Block Grant	Complete	$276,548	$276,548
DCCED	1999	Funded	Teen Center Construction	Complete	$50,000	$52,632
DOT&PF	1998	Funded	Landfill Access Road Construction	Complete	$99,330	$1,100,000
Agency	**FY**	**Project Status**	**Project Description**	**Project Stage**	**Agency Cost**	**Total Cost**

DCCED	1998	Funded	Community Playground/Equipment and Settlement of Outstanding Community Debts	Complete	$20,000	$20,000
DCCED	1998	Funded	Community Playground/Equipment and Settlement of Outstanding Community Debts	Complete	$18,929	$18,929
DOT&PF	1997	Funded	Landfill Access Road Construction	Complete	$240,000	$2,640,000
AEA-BF	1997	Funded	Bulk Fuel System Upgrade	Complete	$800,000	$800,000
DCCED	1997	Funded	Community Building Renovation	Complete	$25,000	$26,316
ANTHC	1996	Funded	Upgrade Water Treatment Plant	Complete	$0	$910,000
HUD/CGP	1996	Funded	Housing Modernization	Complete	$407,000	$407,000
DCCED	1996	Funded	Community Playground & Equipment	Complete	$25,000	$26,316
DCCED	1995	Funded	Community Playground/Equipment	Complete	$25,000	$40,456
HUD/CGP	1994	Funded	Housing Modernization	Complete	$195,000	$195,000
DCCED	1994	Funded	Waste Heat Project	Complete	$40,000	$40,000
DCCED	1994	Funded	Waste Heat Project	Complete	$25,000	$26,316
AEA-BF	1993	Funded	Bulk Fuel Repairs	Complete	$0	$1,919,000
AEA-BF	1993	Funded	LYSD Bulk Fuel Repairs	Complete	$100,000	$100,000
DCCED	1993	Funded	Landfill Relocation	Complete	$100,000	$100,000
AEA	1993	Funded	AVEC Electric Efficiency Improvements	Complete	$65,398	$86,698
ANTHC	1992	Funded	Water Tank	Complete	$0	$887,000
DOT&PF	1990	Funded	Airport Improvements	Complete	$190,353	$1,903,533
DOT&PF	1990	Funded	Airport Right-of-Way	Complete	$10,050	$100,500
DOT&PF	1990	Funded	Dock Road	Complete	$7,957	$79,574
DOT&PF	2003	Planned	Airport Snow Removal Equipment – Dozer	N/A	$0	$100,000
N/A	2003	Potential	Boat Shop	N/A	$0	$450,000

b. What future projects planned and scheduled for the community?

The Tribal Council is responsible for two new projects, including a new housing development to be developed with AVCP Housing Authority and road improvements funded by the Bureau of Indian Affairs.

c. Describe the layout of the community, to include major community infrastructure, facilities and proposed sites. Attach of any copy of preliminary drawings.

Scammon Bay is on the south bank of the Kun River, one mile from the Bering Sea. It lies to the north of the 2300 foot Askinuk Mountains on

the Yukon Kuskoswim Delta. The area encompasses .6 sq miles of land. The proposed sites are all found on the outlying sides of the community.

6. Site Selection Decision Matrix.

The following can help facilitate selection of the proposed sites in the community for all potential types of facilities in the amalgamated program.

Category	Site 1	Site 3 Old School Site	Site 2 Askinuk Fuel Storage	Site 4
Physical Location[22]	*West Side of town, just off of the road as the hill slowly increases in gradient.*	*SW side of community, last building.*	*West side of town on the flood plain, adjacent to the Askinuk Fuel Storage.*	*East side of town, on the road to the new school. Proposed site to the north of the road.*
Road access (if no, distance to nearest road)	Yes☒ No☐ *Community map indicates road accessibility. Tribal council has funding for improving this particular stretch of the road.*	Yes☒ No☐	Yes☒ No☐ *Community map indicates that there is road access. Tribal council to be improving road access in the general area.*	Yes☒ No☐
Available land for expansion	Yes☒ No☐ *There appears to be substantial land available for expansion.*	Yes☒ No☐ *There is available land, but the slope gradient is steep, indicating difficulty with site work and increase costs.*	Yes☒ No☐ *Land is available, but all wetland/floodplain.*	Yes☒ No☐ *Proposed site is sited close to the solid waste disposal site. There does appear to be land available.*
Soil suitability	Yes☒ No☐ *Positive sloping gradient suggest soil and topo suitability.*[23]	Yes☒ No☐ *Current school is on pile foundations. Siting on a steep hill suggests that the soil is stable, with no wetland.*[24]	Yes☐ No☐ *Askinuk Fuel Storage Facility is located adjacent to proposed site on a gravel foundation. Soil/topo can be worked with, but may not be the best option available.*	Yes☐ No☐ *Difficult to assess due to high snow loading and downward slope gradient to the flood plain is located next to a solid*

[22] Brief statement.
[23] During the site visit, the ground was covered with snow and unable to visually verify the soil.

[24] During the site visit, the ground was covered with snow and unable to visually verify the soil.

				waste site.
Flood risk	Yes☐ No☒ *During the Oct 04 flooding and storm, proposed site remained above flood waters. Slight/little risk of flooding.*	Yes☐ No☒ *Higher elevation of this site suggests low/non-existent risk of flood.*	Yes☒ No☐ *Photos from the Oct 2004 storm show the site completely surrounded by flooding. The area is at high risk of flooding.*	Yes☒ No☐ *Site appears to be above the flood plain.*
Proximity to barge Fill line length (approx)	900 ft Comments	Approximately 2400 ft Comments: *Fill line would likely be sited through the middle of town.*	600 ft Comments: *Village corporation fill-line is already in place.*	3500 ft Comments: *Siting the fill line would be difficult- with the sewage lagoon and airport as limiting factors.*
Recovered heat recovery potential Line length to user (ft)	Yes☐ No☒ 750 ft Comments: *Closest viable user of recovered heat is PHS water treatment plant.*	Yes☒ No☐ 600- ft Comments: *PHS Water treatment plant the most likely candidate for this site.*	Yes☐ No☒ 1250 ft Comments: *PHS Water Treatment plant is the only viable user of recovered heat found about*	Yes☐ No☐ ft Comments: School is about 2000' from this site.
Contamination concerns – distance to water source	Yes☒ No☐ ft Comments: *There is a flowing river (reportedly year around) approximately 200 ft east, located upstream from the PHS water infiltration gallery.*	Yes☒ No☐ 200 ft Comments: *There is flowing river (reportedly year around) approximately 200 ft east. The PHS water infiltration gallery is found upstream..*	Yes☒ No☐ ft Comments: *There is a flowing river (reportedly year around) approximately 200 ft east.*	Yes☐ No☒ ft Comments: *Former solid waste site.*

Noise and emission concerns; Distance to neighbors	Yes☐ No☒ Comments: *Sparsely populated corner of town, without many neighbors. Closest neighbor is about 300 feet.*	Yes☒ No☐ Comments: *Site is going to be redeveloped for public use. There is relative close proximity to neighbors.*	Yes☐ No☒ Comments: *Site is almost 600 feet from nearest neighbors.*	Yes☐ No☒ Comments:
Fire safety Distance to neighbors	Low Risk 300ft Comments: *Closest neighbor is about 300 feet. Neighbors located on one side of the plant only.*	Low Risk 50-150 ft Comments: *Neighbors located on two sides.*	Low Risk 600ft Comments: *Very low risk of fire danger for the community- wetlands on all sides and far from the closest neighbor.*	Low Risk 600-800 ft Comments: *Relatively isolated site- low risk of fire danger.*
Other location comments	*Tribal Council has road improvement funding for the road found adjacent to the site.*	*Old school location- site to be decommissioned Aug 2005. Community is interested in having structures deeded back to the community.*	*Decision makers need to view photos taken from the after-math of the Oct 2004 storm. While the village fuel storage site is attractive, the high risk of flooding, with photos as proof, should be considered.*	*Site is the old dump site. There could be settling difficulties involved with this site.*
Parcel ID and Land owner	*Askinuk Coroporation*	*Current LYSD. Community is seeking ownership.*	*Askinuk Village Corporation*	*City or Calista Corporation*
Local select	Yes☒ No☐	Yes☒ No☐	Yes☒ No☐	Yes☒ No☐
Potential Foundation[25]	*Pile Foundation*	*Pile Foundation*	*Pile Foundation*	*Pile Foundation*
Secondary Containment Description[26]	*Gravel Dike w/geomembrane*	*Gravel Dike w/geomembrane*	*Gravel Dike w/geomembrane*	*Gravel Dike w/geomembran*

There is other land available owned by the Village Corporation, east of town towards the school.

a. Potential project site identification evaluation for any legal obstacles.[27] *Preliminary Assessment: Securing a site among the above mentioned alternative appears straightforward.*

[25] Preliminary Opinion
[26] Preliminary Opinion
[27] Questions to be asked of the mayor, city administrator, land owners. This will not entail review of official records at municipal boroughs.

	Sites are controlled by community entities (city council and Village Corporation) and the Lower Yukon School District.
What are the potential site control issues of the proposed site (s)?	*All owners would sign over site control to AVEC for the construction phase. Entities appeared positive and willing to participate during this assessment- there does not appear to be significant obstacles to site control.*
What are the recommended use agreements for the proposed sites(s)?	
Were city officials able to identify any ROW for proposed site(s)?	*No*
Who are the primary land owners of proposed site?	*City Council, Village Corporation, and LYSD.*

7. Operator Assessment

The following questions are designed to assess the capacity at the community level to manage facilities in an effective manner. These questions are not designed to assess the effectiveness of agency oversight of the targeted community. These questions would be asked of appropriate individuals and entities, such as the operator, city administrator/mayor, etc. The operator/owner may not be able to provide a response for all of the questions. It is important to note that these points are self-disclosed and will not be audited by the consultant.

#	Criteria	Operator 1: City Council	Operator 2: Askinuk Village Corporation	Operator 3 School (LYSD)
1.	Who provides oversight of operations for the existing power system/bulk fuel facilities?	*City Council via the city administrator. The city council does not have a quorum as of 2/22/05.*	*Board of directors & general manager*	*LYSD*
2.	Who is the primary operator? Who is the secondary operator? Describe operating context.	*City Council*	*Askinuk Village Corporation*	*Lower Yukon School District*
3.	Does the operator have a structure with clearly defined lines of authority and responsibility?	Yes☐ No☒ Justification: *There is an existing charter and structure in place.*	Yes☒ No☐ Justification:	Yes☐ No☒ Justification: *Clear line of authority as per*

				school district guidelines.
4.	Is an adequate repair and maintenance program in place to maintain existing facilities?	Yes☐ No☒ Justification: *City is lacking personnel and resources to properly maintain existing facilities.*	Yes☒ No☐ Justification: *Facility is in good condition and they demonstrated how their O&M plan.*	Yes☐ No☒ Justification:
5.	Do administrative procedures exist and are they followed?	Yes☐ No☒ Justification:	Yes☐ No☐ Justification: *Unable to verify*	Yes☒ No☐ Justification: *Per school district guidelines.*
6.	Is there an adequate number of personnel available with required skills to operate facility?	Yes☐ No☒ Justification: *City is currently staffed by the city clerk only.*	Yes☒ No☐ Justification:	Yes☒ No☐ Justification: *Per school district guidelines.*
7.	*Is there a high turnover of personnel?*	*Yes☒ No☐ Justification: There is currently only a city clerk on staff.*	Yes☐ No☒ Justification:	Yes☐ No☒ Justification:
8.	Are appropriate financial procedures and reporting systems in place?	Yes☐ No☒ Justification: *Did not indicate formal budgeting and auditing procedures.*	Yes☐ No☐ Justification: *Adequately explained their procedures. Did not view documentation.*	Yes☒ No☐ Justification: *Per school district's guidelines.*
9.	Are project funds clearly separated?	Yes☐ No☒ Justification:	Yes☐ No☒ Justification:	Yes☐ No☐ Justification: *Unable to verify.*
10.	Is there a regular budgeting process developed?	Yes☐ No☒ Justification: *No formal budgeting process presented.*	Yes☒ No☐ Justification: *Adequately explained their procedures. Did not view documentation.*	Yes☐ No☒ Justification: *Per School District guidelines.*
11.	Are adequate financial and inventory controls in place and implemented?	Yes☐ No☒ Justification:	Yes☒ No☐ Justification: *Adequately explained their procedures. Did not view documentation*	Yes☒ No☐ Justification:
12.	Are internal and external financial reviews performed regularly?	Yes☐ No☒ Justification:	Yes☐ No☐ Justification: *Adequately explained their procedures. Did not view documentation.*	Yes☒ No☐ Justification: *Per school district guidelines.*
13.	Are financial reports accurate and timely?	Yes☐ No☒ Justification:	Yes☐ No☐ Justification: *Adequately explained their procedures. Did not view documentation.*	Yes☒ No☐ Justification: *Per school district guidelines*
14.	Are there any contaminated sites?	Yes☐ No☒ - *The only open contaminated site on DEC's web-site appears to involve the Alaska Army/National Guard.*		

LYSD Field Notes:

- *New School site has two, 30,000 gallon fuel tanks at the site.*

- *School district will be working with Crowley to truck fuel from the city dock to the new school;*
- *Teacher housing will remain at the present location.*
- *Elementary School will be demolished, two of the school districts tanks will be demolished, and the village corporation and the city council may take over ownership of the high school.*

City Council Field Notes:
During the time of the site visit, a legal quorum did not exist for the city council- there were only three council members available. This has since been rectified. The budget does not allow for a city manager/administrator-office is currently staffed by a city clerk. The city council is engaged in water/sewer, road development. VPO and power plant operator being paid through the city council. City Council is currently partnering with AVCP and VSW. As with most rural communities, the revenue sharing has been cut. There are currently no IRS back taxes and liens against the city council according to the city clerk and city administrator.

Traditional Council Field Notes:

Discussion and interview with George Smith, Tribal Administrator

- *The community tank farms are too scattered around the community and need to be consolidated;*
- *Did not indicate strong interest for the tribal council to be involved, citing the work being done at the tribal council.*

Village Corporation Notes:

- *Would like to see AVEC and the school district to buy from the village corporation.*
- *Business lines include the village store and the fueling facilities.*
- *Contrary to what was communicated during the community corporation, the village corporation is interested in participating in the program.*
- *Not involved w/gravel, said that Calista Natural Resources Department is responsible. There is a borrow pit with a good source of gravel in the community. Current price is $2.80 cu/yd. School district did use a different source for construction of the school currently underway.*
- *Would like to see the village corporate to have ownership.*
- *Their bulk fuel site is in good condition.*

8. Legal/Regulatory Assessment

What types of permit(s) are likely for this power plant/bulk fuel upgrade project?
Permitting requirements for the new tank farm and fuel distribution systems will include submittal of construction documents to the State Fire Marshal for review and approval, obtaining a US Army Corps of Engineers (COE) permit to place fill on wetlands and consultation with the US Department of Interior, Fish and Wildlife Service regarding the Endangered Species Act.

Fire Marshal Review
The construction of the new tank farm and fuel distribution systems would require submittal of a complete set of construction documents to the State of Alaska, Department of Public Safety, Division of Fire Prevention (Fire Marshal) for plan review and approval

U.S. Army Wetlands Permit
The U.S. Army corps of Engineers is responsible for reviewing applications and issuing permits for the placement of fill material in wetlands. Specific provisions have been established as a General Permit (96-07) to address the construction of tank farms in Alaska. As a result, facilities that meet requirements of the General Permit, can utilize this expedited review process, which reduces the review period from approximately 120 days to 15 days.

3. U.S. DOI, Fish and Wildlife Service – Endangered Species Act

The U.S. Department of Interior, Fish and Wildlife Service administers the Section 7 consultation process for the Endangered Species Act. The purpose of the Act is to ensure that proposed projects or actions do not jeopardize the continued existence of listed species. A formal consultation process with the Service may take up to 135 days. However, the informal consultation process provides an opportunity for the Federal action agency or its non-federal representative to utilize an informal consultation process and receive a preliminary determination for some proposed projects.
Ellen Lance of the U.S. DOI, Fish and Wildlife Service was contacted regarding endangered species for the Scammon Bay project. She indicated that there are potential conflicts with endangered species in the area.

During detailed design, AVEC will complete the consultation process through submittal of a letter to the U.S. DOI, Fish and Wildlife Service on behalf of its federal partner, the Denali Commission, providing its assessment of Section 7 Endangered Species.

Table 16. Permit Requirements

Permitting Agency	Type of Permit	Likelihood	Justification/Comments
AF&G		Either way	Would be required if hydroelectric options are included
USFWS	General permit	Highly Likely	Wind does not appear to be feasible option.
USACOE	General Permit	Required	Proposed sites are more than likely in wetlands areas.
FAA		Not at all likely	Proposed sites are a distance from the airport.
Fire Marshal	Plan Review and Approval	Required	Plan review and approval. Alaska Department of Public Safety, Division of Fire Prevention.
OPMP		Required	

a. What degree of regulatory interface is likely for this project? With who?

Table 17. Regulatory and Agency Interface

Regulatory Agency	Type of Interface	Likelihood	Justification/Comments
USEPA	Compliance	High Degree	SPCC interface.
USCG	Oil Spill Response	High Degree	USCG has jurisdiction over the marine header.

ADEC	Compliance	Low Degree	Proposed facilities are more than likely outside of DEC's limits.
USFWS	Endangered Species	High Degree	The area has high potential for wind.

9. Sustainability Assessment

a. Does community leadership have an understanding of the sustainability requirements?

Yes ☒ No ☐

Explain and how verified.

The sustainability requirement was communicated during the community meeting on February 22, 2005. Denali Commission documentation was distributed to the community.

b. Has the community effectively involved other stakeholders in the past in the planning and management of the bulk fuel facilities/power facility?

Yes ☐ No ☒

Explain and how verified.

The City Council, in partnership with AVEC, is the village entity most involved in the management of the existing power facility. As with many City Councils in rural Alaska, they have been adversely affected with the state cuts in revenue sharing. In the case of Scammon Bay, this created difficulties in meeting their obligations.

c. Provide details on the nature (who, what, when, etc) of agreements, support letters, etc that should be established with AVEC and other entities.

MOU

The situation with the city council needs to be monitored as there is no quorum with the city council as of 2/22/05. If the city council situation does not resolve itself, an MOU with another village entity maybe appropriate to ensure credibility.

Letters of intent

Need letters of intent from the City Council, Tribal Council, Askinuk Village Corporation, and the LYSD.

Resolutions

City Council, Tribal Council, Askinuk Village Corporation. Model Resolutions were submitted during the site visit. A resolution from the Tribal Council is the only resolution received.

d. Has the community established a comprehensive community plan? Yes ☒ No ☐

Explain how (who, methodologies, and outcomes) the plan was developed. *A Scammon Bay Strategic plan was developed and approved by the Traditional Council. The plan does not suggest significant involvement by other village entities, such as the village corporation, city council, and other entities. There is no significant discussion of electricity and power in the plan.*

Attach copies and supporting information.

Actual/ Estimated Completion date. *August 22-25, 2001*

e. Do business plans exist for the facilities? Yes ☐ No ☒ Comments

If no, does community leadership understand the components of the business plan?

Understands that business plan needs to be updated? Yes ☒ No ☐ Justify:
The need for a business plan was clearly communicated to the community during the community meeting on February 22, 2005. Denali Commission Guidelines were also given to the community.

f. Does community leadership understand the requirement for a renewal and replacement fund?
Yes ☒ No ☐ Justify:
The need for a renewal and replacement fundwas clearly communicated to the Community during the community meeting on February 22, 2005. Denali Commission guidelines were given to key community leaders and the policies explained.

g. Are existing tank-farm facilities in compliance with the laws that govern its operation?
Yes ☒ No ☐ Justify:
In reviewing the DCRA Bulk Fuel Community Data Base for Scammon Bay, the following observations can be made:

Table 18. Reported Tank Farm Deficiencies

Community Entity	Deficiencies
Village Corporation.	No deficiencies or code violation noted during the inspection.
City of Scammon Bay	Several deficiencies were noted in the tank farms and the facilities did not appear to be compliant
Catholic Church	Several violations were indicated.
Alaska Army National Guard	Several violations noted.
AVEC	Several violations noted
School	Several Violations noted.

h. Does the community understand that an adequate preventative and maintenance plan needs to be established?

Yes ☒ No ☐ Justify:

The need for a preventative and maintenance plan was clearly communicated to the community during the community meeting on February 22, 2005. Denali Commission guidelines were given to the committee.

i. Does the primary owner maintain separate accounts and arranges for annual audits?

Yes ☐ No ☒ Justify:

City and Village Council do not have annual audits. Unknown for the village corporation. The school falls under the Lower Yukon School District audit process.

j. Primary/secondary operators understand that formal agreements need to be established and understands the content of these arrangements?

Yes ☒ No ☐ Justify:

Formal operating agreements was discussed during the community meeting.

k. How does the operator deal with cash-flow difficulties?

City Council does not appear to be proactively dealing with cash flow difficulties via budgeting and cash flow planning.

l. Is there any foreseeable bankruptcy or financial difficulties?

Yes ☒ No ☐ Justify:

There is little activity happening at the City Council at this time and it appears services have been dramatically reduced and that there are problems with collections for public facilities. The tribal council appears robust with a diversity of activities. The financial health of the village corporation and the tribal corporation was not queried, but there did not appear to be indicators of financial malaise.

m. Are the operators in good standing with the IRS? (self-disclosed)

Yes ☒ No ☐ Justify:
The question was specifically discussed with the city and village council. Both entities indicated that they were in good standing.

Appendix Community Meeting Field Notes 2/22/05 7:15.

A community-wide meeting was convened in Scammon Bay on February 22, 2005 to discuss the bulk fuel and power system upgrade program promoted by the Denali Commission. All major entities in the community were invited to the meeting, including the City Council, Traditional Council, Village Corporation, and committee at large members. The goal of the meeting was to bring the major entities together to educate community members on the program and to identify a minimum of four sites for consideration. Marie Becker facilitated the meeting and presented the following points:

- The process will be a 2 ½ to 3 year duration and will entail a community-wide effort to work together.
- The need to identify a lead village entity for the process was emphasized. Each entity was asked to assess their capacity at undertaking a capitol project such as this.
- The need for an updated community plan, a renewal fund and community savings account with the need to set-aside 40% over 40 years.
- This project may entail an increase in the cost of fuel for the community.
- Resolutions from all entities need to be undertaken supporting the project and identifying roles. Marie Becker placed emphasis is on the need to identity the lead village agency.
- It was brought up that the community has had difficulty with water collections in the past.
- Potential sites were also discussed. The community had identified three sites, which were later increased to four. The need to have access to road and water was also emphasized.
- During the meeting, it was said that the village corporation may not want to participate.[28]
- Several community members indicated that George Smith was absent from the meeting and needs to be involved.
- Several community members indicated that there was a United States Corps of Engineer hydroelectric study undertaken for the community.
- A community member indicated that the village corporate is fairly new and code compliant when it was built.
- There is a Tribal Employment Rights Opportunity ordinance in place that requires local hire.

[28] In later discussions with the Chairman of the Village Corporation, this was later rescinded.