

ALASKA LEGISLATURE

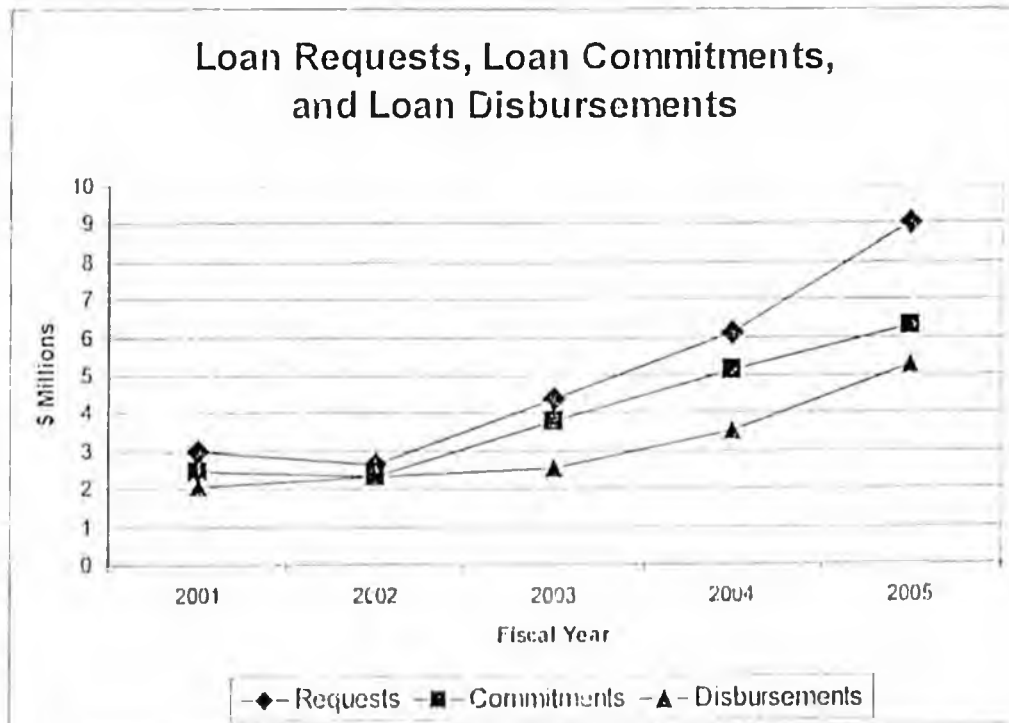
HOUSE and SENATE FINANCE COMMITTEE FILES, 2005-2006 3046

bear in mind the partial mismatch described above in fiscal year recording – a portion of loan requests and commitments in FY05 (for example) will result in loan disbursements during FY06:

TABLE 2

Fiscal Year	Loan Requests	Loan Commitments	Loan Disbursements
2001	2,998,905	2,440,338	2,042,898
2002	2,624,982	2,326,351	2,324,474
2003	4,396,210	3,805,673	2,536,452
2004	6,136,783	5,155,089	3,508,730
2005	8,997,460	6,285,574	5,282,842

GRAPH 3



For this study, a choice must be made between "loan requests" and "loan disbursements" as the appropriate measure of program demand. If the focus is on "loan requests," it might appear that program demand has already exceeded the program's lending capacity: AEA logged in \$9.0 million of loan requests during FY05 compared with the Fund's net assets of \$8.2 million. The financial reality, however, is that the Fund still had

nearly \$3 million in excess lending capacity because the actual loan disbursements in FY05 amounted to only \$5.3 million.

Despite the timing problems of the two data sources discussed above, and the distortion that introduces when comparing requests, commitments, and disbursements within individual years, it is true that AEA has disallowed a significant number of requests in recent years as suggested in Table 2 and Graph 3. Among the reasons for this are:

- loss of municipal revenue sharing, which weakened the financial position of many small communities;
- a higher incidence or increased collection of tax liens among BFRLF applicants; and
- the requirement under the new Bridge Loan Program<sup>3</sup> that all applicants for a bridge loan must first apply for a BFRLF loan and be turned down before a bridge loan request is considered. This requirement prompted a number of BFRLF loan requests from applicants who expected their request to be denied due to known problems with credit or collateral, but who needed to apply in any event in order to access the resources of the Bridge Loan Program.

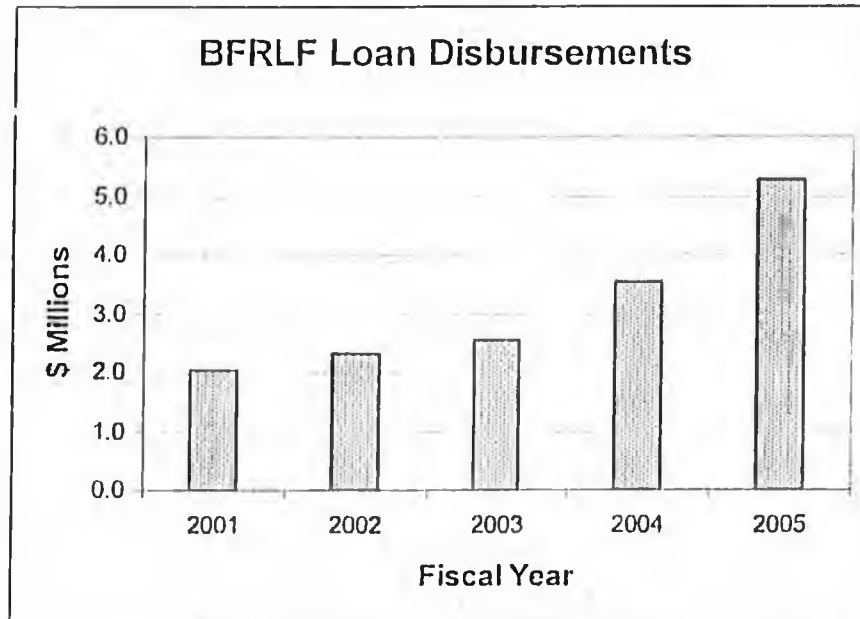
The amount by which requests exceed commitments and actual loans should not be included in the measure of program demand. The BFRLF need not be sized to accommodate whatever safety margin may be built into some requests in an uncertain environment with respect to fuel price and required volumes; nor need it be sized to accommodate the proportion of applications that, on average, will not be approved due to insufficient credit or collateral.

As a result, "loan disbursements" (i.e. actual loans) will be considered in this study to provide the best measure of past program demand and to provide the most useful take-off point for projecting future demand. Graph 4 below shows the increase in BFRLF loan disbursements from FY01 through FY05:

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<sup>3</sup> See page 60 in this report for a detailed discussion of the Bridge Loan Program

GRAPH 4



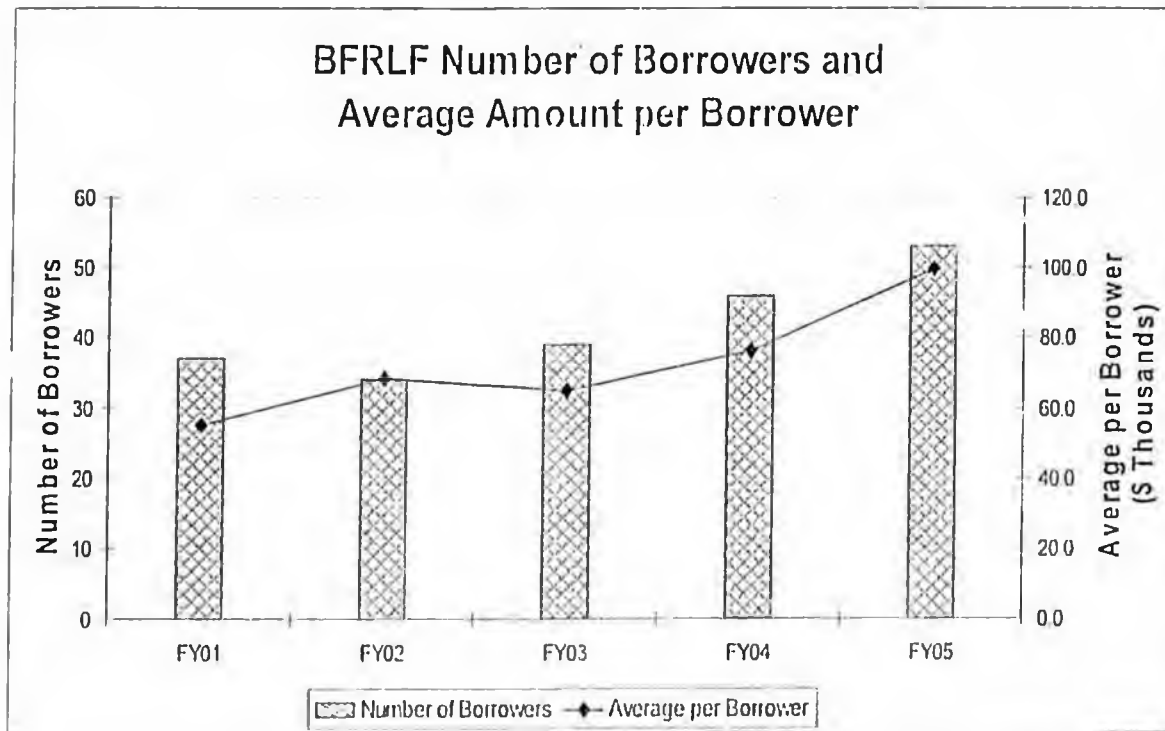
E. Number of Borrowers and Average Loan Size

Table 3 and Graph 5 below show the number of BFRLF borrowers and the average amount loaned per borrower in fiscal years 2001 through 2005. The number of borrowers may be less than the number of loans since some borrowers receive more than one loan in a fiscal year. The \$300,000 limit (and the lower annual limits that preceded it) pertains to the total amount loaned to a borrower in a fiscal year, not the size of an individual loan.

TABLE 3

	<u>FY 01</u>	<u>FY 02</u>	<u>FY 03</u>	<u>FY 04</u>	<u>FY 05</u>
Number of Borrowers	37	34	39	46	53
Ave. per Borrower (\$ thousands)	55.2	68.4	65.0	76.3	99.7

GRAPH 5



Clearly, the number of borrowers and the average amount loaned per borrower per year has gone up since FY03. Among the factors that might have contributed to the increase in the number of borrowers are the following:

- An increase in the usefulness of the program to larger bulk fuel purchasers due to the increased limits on annual borrowing.
- An increase in the cost of fuel, which presumably led some bulk fuel purchasers to seek debt financing who may otherwise have had sufficient cash to do without a loan.
- An increase in the availability of BFRLF funds due to the \$5.0 million increase in BFRLF capitalization in February 2002.
- A reduction in the availability of credit or cash from other sources.
- Growing familiarity with the program in rural Alaska. (Although the program has been in existence for 25 years, turnover in the management of rural businesses and institutions tends always to erode a portion of the local knowledge base.)

- Increased tank farm capacity allowing some additional borrowers to acquire and store a minimum 6 months supply of fuel.

A closer look at the specific borrowers in each year suggests that more borrower-specific factors are involved as well. For example, there were 7 more borrowers in FY04 than in FY03, but this is the net result of the following:

- 10 FY03 borrowers did not obtain BFRLF loans in FY04. These 10 had borrowed \$923,600 from the BFRLF in FY03.

(How these 10 FY03 borrowers financed their FY04 bulk fuel requirements has not been determined for this study.)

- 17 FY04 borrowers did not obtain BFRLF loans in FY03. These 17 borrowed \$1,240,941 from the BFRLF in FY04.

The net increase due to these movements in and out of the program was therefore \$317,341, or about 33% of the increase in loan disbursements between FY03 and FY04.

Looking a little more closely at the 17 additional borrowers in FY04, 12 of the 17 had not obtained a previous BFRLF loan during the prior 3 fiscal years. Of these 12 "genuinely new" borrowers, 9 continued to borrow from the BFRLF in FY05 while 3 did not.

For the 9 "genuinely new" borrowers in FY04 who continued to borrow from the program in FY05, the aggregate amount loaned to them in each fiscal year was as follows:

FY04 loans to 9 new borrowers:	\$665,818
FY05 loans to these same borrowers:	\$820,083

The addition of these new borrowers in FY04 and their continuing use of the program in FY05 might therefore represent a substantial and ongoing increase in annual loan demand.

Comparing now the number of borrowers in FY04 and FY05, the data show a net increase of 7 borrowers as a result of the following:

- 10 FY04 borrowers did not obtain BFRLF loans in FY05. These 10 had borrowed \$958,699 from the BFRLF in FY04.

(Again, this study has not uncovered how these 10 FY04 borrowers financed their FY05 bulk fuel requirements.)

- 17 FY05 borrowers did not obtain BFRLF loans in FY04. These 17 borrowed \$1,833,704.

The net increase of these movements in and out of the program was therefore \$875,005, or about 49% of the increase in loan disbursements between FY04 and FY05.

Again examining the 17 additional borrowers in FY05, 10 of the 17 had not obtained a previous BFRLF loan during the prior 4 years. These 10 "genuinely new" borrowers accounted for \$1,155,072 in FY05 loans. How many of these "first time" BFRLF borrowers will remain with the program in FY06 and beyond remains to be seen.

It is difficult to isolate the contribution of new borrowers to increased program demand because of the offsetting factor of past borrowers dropping out of the program. Why they dropped out is unknown, as is the likelihood and timing of their possible return to the program in the future. Similarly, we don't know whether or for how long the new borrowers will remain with the program. However, the available figures indicate that a third or more of the increase in BFRLF loans over the last two years is associated with the net increase in the number of borrowers. Further, the fact that 9 of the 12 "first time" borrowers in FY04 returned in FY05 for another BFRLF loan suggests that the program is successfully meeting the needs of the preponderance of new borrowers. The subject of future growth in program demand will be taken up again in later sections of this report.

As shown in Table 3 and in Graph 5, not only the number of borrowers has grown since FY03 but the average size loan per borrower has grown substantially as well from approximately \$65,000 per borrower in FY03, to \$76,300 per borrower in FY04, to \$99,700 per borrower in FY05. Factors that may contribute to the increase in average loan per borrower include the following:

- Increase in wholesale, delivered fuel prices.
- Increase in the gallons of fuel financed by borrowers, which could correspond to increased consumption in the subject communities. It could also mean, for those bulk fuel purchasers who finance their purchase in part with cash and in part with a BFRLF loan, that the loan portion is growing and the cash portion is shrinking.
- Increase in the maximum amount per year of debt financing that each borrower may obtain from the program.

These three factors are discussed in the sections below:

### Impact of Diesel Fuel Prices

Delivered fuel prices certainly increased during this period and must have affected the financing requirements of bulk fuel purchasers. The most comprehensive record of historical, wholesale fuel prices in communities that are eligible for BFRLF loans is found in the annual statistical reports of the Power Cost Equalization (PCE) program. These reports show the average price of fuel delivered to the electric utility bulk fuel tanks in each community for each fiscal year.

Diesel fuel prices for electric utilities were obtained for each PCE community for 5 years: the prices reported in the PCE statistical reports were used for FY01 through FY04, and the most recent price of fuel delivered to each community's electric utility was used for FY05<sup>4</sup>. Because BFRLF loans are available only for use in communities with population under 2000, PCE communities with populations above this level were removed. In order to gain a regional perspective on fuel prices, each remaining community was assigned one of the following region codes:

- 1 = Aleutians
- 2 = Kodiak
- 3 = Southwest Coast
- 4 = North Slope Borough
- 5 = Southeast Alaska
- 6 = Southwest River
- 7 = Interior
- 8 = Northwest Coast
- 9 = Southcentral
- 10 = Road Access

There are close calls in assigning communities to one of these regions: for example, a community several miles upriver from the Southwest Coast could have been assigned either code "3" or code "6."

It is acknowledged that, especially for FY05, these prices are likely to be lower than prices paid by many BFRLF borrowers. Among the reasons for this are:

- This report is being prepared in an environment of rapidly increasing fuel prices. Even the fuel price most recently reported

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<sup>4</sup> The PCE statistical report for FY05 showing average fuel prices for each utility paid throughout the fiscal year will not be available until roughly the mid-point of FY06. For this reason, the most recent fuel price paid in FY05 by each PCE utility (which is available now in PCE records) was used rather than an FY05 average.

for PCE may be out of date, especially if it reflects prices for deliveries in fall 2004.

- In many cases, though not all, electric utility prices may be more favorable than prices available to the average BFRLF borrower. For example, AVEC may be able to obtain a lower price than a particular fuel retailer due at least in part to its larger presence in the market and its record of making timely and complete payments to fuel suppliers.

On the whole, however, it is reasonable to use the electric utility fuel price records for purposes of this study: to document historical diesel fuel price trends by region and across the state, and to help develop rough estimates of the total cost of diesel fuel and gasoline in BFRLF communities. The focus of this report is not on short term developments but on long term trends.

Table 4, which is spread across the following 7 pages, shows the PCE fuel price data sorted by region and, within regions, alphabetically by community:

TABLE 4

Utility (FY04 Report)	Community (FY04 Report)	Region	Pop 6/30/04	Total Fuel Used (gallons) FY04 (ELEC UTIL ONLY)	Most Recent Diesel Price FY05	Avg Price of Diesel Fuel FY04	Avg Price of Diesel Fuel FY03	Avg Price of Diesel Fuel FY02	Avg Price of Diesel Fuel FY01
	Adak	1	65						
Akutan Electric Utility	Akutan	1	748	48,724		1.63	1.34	1.37	1.61
Andreano Electric Corp.	Aika	1	102	33,053		2.23	1.93	2.15	2.00
Chignik Electric (10)	Chignik	1	77	53,192	2.28	1.24	1.11	1.05	1.14
Chignik Lagoon Power Utility	Chignik Lagoon	1	85	46,722	2.67	1.73	1.45	1.64	1.82
Chignik Lake	Chignik Lake	1	136						2.32
G & K	Cold Bay	1	116	221,498	2.86	2.23	2.25	2.23	2.26
False Pass Electric Assoc.	False Pass	1	79	44,394	2.20	1.48	0.78	1.34	1.33
King Cove, City of	King Cove	1	794	107,290	1.53	1.25	1.03	0.93	1.15
Neison Lagoon Elec. Coop.	Neison Lagoon	1	70	33,734		1.42	1.36	1.42	1.63
Umnak Power Company	Nikolski	1	41	20,375	2.60	2.13	1.94	1.58	2.23
Perryville, City of (8)	Perryville	1	111	23,912		1.82	1.75	1.78	2.12
Pilot Point Electrical	Pilot Point	1	76	39,298		1.83	1.57	1.54	1.28
Port Heiden, City of (10)	Port Heiden	1	108	61,217	2.23	1.43	1.53	1.34	1.36
Sand Point Electric Company	Sand Point	1	915	299,466	2.57	1.80	1.63	1.55	1.55
	ALEUTIANS		3,535	1,032,875					
(weighted by population)	wt. ave fuel price				2.15	1.65	1.41	1.35	1.53
Akhrok	Akhrok	2	80					1.13	
Alutiq Power Company	Kaniuk	2	25	14,845	2.05	1.75	1.75	1.75	1.75
Larsen Bay Utility Company	Larsen Bay	2	107	8,041	2.30	1.28	1.48	1.08	1.10
AVEC	Old Harbor	2	229	64,271	2.32	1.44	1.22	1.12	1.74
Utuzinkie, City of	Utuzinkie	2	185	38,555	2.25	1.50	1.48	1.42	1.75
	KODIAK		628	125,712					
(weighted by population)	wt. ave fuel price				2.25	1.45	1.38	1.24	1.62

Region Key
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Utility (FY04 Report)	Community (FY04 Report)	Region	Pop 6/30/04	Total Fuel Used (gallons) FY04 (ELEC UTIL ONLY)	Most Recent Diesel Price FY05	Avg Price of Diesel Fuel FY04	Avg Price of Diesel Fuel FY03	Avg Price of Diesel Fuel FY02	Avg Price of Diesel Fuel FY01
Akiachak Ntv. Community Elec	Akiachak	3	622	120,588	1.98	1.72	1.51	1.63	1.58
Akiak, City of	Akiak	3	348	71,572	2.03	1.45	1.47	1.87	1.58
AVEC	Alakanuk	3	659	139,699	1.82	1.38	1.11	1.23	1.20
	Aleknagik	3	219						
Almautluak Joint Utilities	Almautluak	3	291	59,098	1.90	1.80	1.34	1.58	1.44
Naterkaq Light Plant	Chefornak	3	419	69,770	3.07	1.81	1.48	1.38	1.38
AVEC	Chevak	3	854	200,129	1.79	1.38	1.15	1.23	1.19
AVEC	Eek	3	291	55,417		1.22	1.17	1.24	1.19
Egegik Light and Power	Egegik	3	88	65,183	2.05	1.45	1.55	1.48	1.38
Ekwok Electric	Ekwok	3	114	32,284	2.60	2.11	2.60	2.60	2.60
AVEC	Emmonak	3	745	201,846	1.82	1.44	1.13	1.23	1.25
AVEC	Goodnews Bay	3	234	56,045		1.39	1.08	1.25	1.19
AVEC	Hooper Bay	3	1,075	179,955		1.31	1.14	1.24	1.30
Igiugig Electric Company	Igiugig	3	52	21,314	2.95	1.99	1.53	1.47	1.41
AVEC	Kasigluk	3	527						
Kipnuk Light Plant	Kipnuk	3	644	129,647	2.06	1.66	1.42	1.06	1.13
Koliganek Village Council	Koliganek	3	186	38,004	2.60	1.85	1.71	1.77	1.69
Fuvurnaqa Power Company	Kongiganak	3	359	87,430	1.90	1.62	1.39	1.55	1.35
Kotlik Electric Services	Kotlik	3	633	154,730	2.07	1.62	1.83	1.91	1.34
Kwig Power Company	Kwigilligok	3	337	63,622		1.57	1.30	1.56	1.52
Manokotak Power Company	Manokotak	3	404	113,521	2.32	1.87	1.41	1.53	1.46
AVEC	Mekoryuk	3	204	65,633		1.36	1.14	1.25	1.23
AVEC	Mountain Village	3	757	199,594	1.79	1.35	1.17	1.24	1.21
Naknek Electric Association	Naknek	3	1,155	1,437,581	1.54	1.00	0.92	0.91	0.95
Unqsraq Power Company	Newtok	3	320	38,820		1.51	1.47	1.48	1.49
AVEC	Nightmute	3	224	49,749		1.36	1.08	1.26	1.22
Nunam Iqua Electric Company	Nunam Iqua	3	204	56,597	1.95	1.61	1.38	1.53	1.37
Platinum, City of	Platinum	3	37	28,615	2.21	1.20	1.52	1.32	2.57
AVEC	Quinhagak	3	572	127,567	1.79	1.32	1.10	1.17	1.27
AVEC	Scammon Bay	3	491	85,500	1.79	1.33	1.13	1.25	1.25
St. George	St. George	3	137					1.97	1.71
St. Paul Municipal Elec. Util.	St. Paul	3	533	371,910	2.50	1.88	1.68	1.52	1.84
AVEC	Stebbins	3	586	108,999	1.79	1.39	1.09	1.13	1.18
AVEC	Togiak	3	804	210,093	1.79	1.30	1.15	1.21	1.28
AVEC	Toksook Bay	3	549	105,570	1.79	1.34	1.12	1.26	1.24
AVEC	Tununak	3	323	62,890		1.33	1.14	1.25	1.17
Twin Hills Village Council	Twin Hills	3	70	21,199		1.90	1.90	2.31	2.16
	SW COAST		16,077	4,830,194					
(weighted by population)	wt. ave fuel price				1.94	1.45	1.27	1.34	1.31

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Utility (FY04 Report)	Community (FY04 Report)	Region	Pop 6/30/04	Total Fuel Used (gallons) FY04 (ELEC UTIL ONLY)	Most Recent Diesel Price FY05	Avg Price of Diesel Fuel FY04	Avg Price of Diesel Fuel FY03	Avg Price of Diesel Fuel FY02	Avg Price of Diesel Fuel FY01
Aniak Light & Power Co.	Aniak	6	539	192,576	1.80	1.32	1.15	1.46	1.48
AVEC	Anvik	6	109	38,474		1.32	1.44	1.54	1.47
MKEC	Chuathbaluk	6	98	20,200		1.70	1.65	1.90	1.94
MKEC	Crooked Creek	6	148	25,258		1.69	1.55	1.79	1.98
AVEC	Grayling	6	192	46,352		1.52	1.33	1.40	1.41
AVEC	Holy Cross	6	232	54,340		1.51	1.31	1.45	1.39
Kwethluk, Inc. (11)	Kwethluk	6	693	92,279	2.04	1.86	1.98	1.72	1.65
Levelock Electric Cooperative	Levelock	6	84	36,834		1.54	1.50	1.66	1.89
AVEC	Lower Kalskag	6	260	90,870		1.42	1.13	1.29	1.21
AVEC	Marshall	6	364	79,713	1.63	1.39	1.18	1.22	1.21
Napakiaq Ircinraq Power Co.	Napakiaq	6	353						
Napaskiak Electric Utility	Napaskiak	6	408	74,091	2.73	1.60	1.64	1.55	1.75
AVEC	New Stuyahok	6	479	92,667	2.41	1.30	1.17	1.33	1.36
AVEC	Nunapiitluk	6	512	193,198	1.82	1.39	1.16	1.25	1.21
AVEC	Pilot Station	6	548	125,278	1.79	1.39	1.17	1.39	1.22
AVEC	Pitkas Point	6	105						
MKEC	Red Devil	6	35	14,490		1.83	1.67	1.80	1.87
AVEC	Russian Mission	6	328	59,875	1.79	1.32	1.06	1.19	1.20
AVEC	Shageluk	6	145	31,506		1.69	1.54	1.62	1.47
MKEC	Sleetmute	6	93	25,314		1.69	1.65	1.87	1.94
AVEC	St. Mary's, Andreafsky	6	688	225,358	1.81	1.33	1.15	1.27	1.31
MKEC	Stony River	6	57	13,994		1.69	1.63	1.77	1.61
Tuluksak Traditional Power Utility	Tuluksak	6	461	50,280	3.27	1.67	1.42	1.79	2.28
Tuntutuliak Community Service A	Tuntutuliak	6	377				1.32	1.53	1.66
AVEC	Upper Kalsag	6	240						
	SW RIVER		7,552	1,582,953					
(weighted by population)	wt. ave fuel price				2.11	1.49	1.35	1.46	1.49

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AVEC	Brevig Mission	8	307	69,644	1.65	1.40	1.27	1.22	1.28
Buckland, City of (10)	Buckland	8	426	95,753	2.01	1.87	2.02	1.76	1.71
Ipiatchiaq Electric Company	Deering	8	129	55,249	2.21	1.76	1.79	1.77	1.79
Diomedea Joint Utilities	Diomedea	8	126	42,600	2.21	1.68	1.63	1.87	1.61
AVEC	Elim	8	339	90,492		1.31	1.16	1.23	1.21
AVEC	Gambell	8	639	141,138	1.82	1.23	1.13	1.23	1.19
Golovin Power Utilities	Golovin	8	146	64,557	2.26	1.50	1.82	2.03	1.84
AVEC	Kiana	8	399	120,553	2.29	1.91	1.71	1.77	1.71
AVEC	Kivalina	8	383	87,755	2.29	1.87	1.63	1.75	1.67
AVEC	Koyuk	8	328	96,010	1.82	1.51	1.11	1.23	1.25
AVEC	Noatak	8	455	109,521	3.10	2.72	2.68	2.73	1.99
AVEC	Noorvik	8	677	150,578		1.89	1.69	1.76	1.73
AVEC	Savoonga	8	686	150,894	1.79	1.33	1.15	1.32	1.25
AVEC	Selawik	8	778	206,273	1.79	1.88	1.65	1.77	1.79
AVEC	Shaktolik	8	216	61,083	1.65	1.29	1.10	1.12	1.21
AVEC	Shishmaref	8	589	128,589	1.71	1.33	1.11	1.18	1.25
AVEC	St. Michael	8	390	100,221	1.85	1.49	1.15	1.36	1.28
Teller Power Company (10)	Teller	8	247	49,287	1.79	1.67	1.73	1.59	1.57
Unalakleet Valley Elec. Coop.	Unalakleet	8	757	305,134	1.55	1.22	1.14	1.18	1.24
AVEC	Wales	8	155	47,933	1.71	1.32	1.38	1.17	1.26
White Mountain Utilities	White Mountain	8	214	71,221	2.52	1.81	1.40	1.59	1.38
	NW COAST		8,397	2,244,485					
(weighted by population)	wt. ave fuel price				1.95	1.62	1.47	1.53	1.48

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APC	Allakaket, Alatna	7	162	53,773	1.45	2.19	2.08	2.11	2.00
AVEC	Ambler	7	295	105,390	2.43	1.92	2.15	2.33	1.87
	Arctic Village	7	140						
Beaver Joint Utilities (9)	Beaver	7	76	31,436	2.87	1.92			2.06
APC	Bettles, Evansville	7	58	58,368	1.45	1.41	1.27	1.36	1.29
	Birch Creek	7	43						
Central Electric, Inc.	Central	7	120	50,104	1.47	1.22	1.09	1.07	1.40
Chalkyitsik Village Energy System	Chalkyitsik	7	84					2.30	2.30
Gwitchyaa Zhee Utilities	Fort Yukon	7	581	207,698	2.27	1.66	1.54	1.47	1.45
Gaena, City of	Gaena	7	713	724,070		1.46		1.47	1.59
APC	Healy Lake	7	31	14,335	1.60	1.26	1.09	1.26	1.40
Hughes Power & Light	Hughes	7	65	37,325	2.76	3.27	2.29	2.28	2.29
AVEC	Huslia	7	285	77,648	2.24	1.79	1.57	1.76	1.66
AVEC	Kallag	7	223	57,496		1.58	1.37	1.40	1.28
Kobuk Valley Electric Company	Kobuk	7	128						
Koyukuk, City of (11)	Koyukuk	7	101	20,820	1.98	1.89	1.51	1.55	1.40
Lime Village Electric Utility	Lime Village	7	41	9,101		4.44	3.10	3.10	3.10
McGrath Light & Power	McGrath	7	407	221,650	1.95	1.40	1.35	1.49	1.47
Nikolai Light & Power	Nikolai	7	120	39,182		1.81	1.52	1.86	1.67
AVEC	Nulato	7	345	85,982		1.59	1.41	1.56	1.36
Ruby, City of (5)	Ruby	7	195	24,861	2.84	1.76	1.74	2.29	2.51
AVEC	Shungnak	7	249	107,998	2.43	2.03	2.18	2.08	2.00
Takotna Community Assoc. Utilities	Takotna	7	49	28,219	2.20	1.72	1.44	1.67	1.54
Tanana Power Company	Tanana	7	278	104,270	1.76	1.34	1.24	1.74	1.58
Venette Village Electric	Venette	7	158					1.39	1.92
	INTERIOR		4,987	2,059,744					
(weighted by population)	wt. ave fuel price				2.16	1.69	1.61	1.72	1.67
Chenega IRA Village Council	Chenega Bay	9	90	22,548	2.69	1.89	1.73	1.89	1.77
I-N-N Electric Cooperative	Iliamna, Newhalen, Nondalton	9	467	53,810	2.15	1.61	1.59	1.48	1.48
Kokhanok Village Council	Kokhanok	9	174	26,403	2.51	2.36	1.94	2.14	2.54
Pedro Bay Village Council	Pedro Bay	9	46	20,413	2.75	2.32	2.02	2.16	1.98
Tanalian Electric Cooperative	Port Alsworth	9	110	54,606	2.71	2.18	2.24	2.25	2.25
Tattletok Electric Utility	Tattletok	9	108		2.63	1.93			
	SOUTH CENTRAL		995	177,780					
(weighted by population)	wt. ave fuel price				2.41	1.90	1.78	1.78	1.84

Region Key
1 = Aleutians
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Utility (FY04 Report)	Community (FY04 Report)	Region	Pop 6/30/04	Total Fuel Used (gallons) FY04 (ELEC UTIL ONLY)	Most Recent Diesel Price FY05	Avg Price of Diesel Fuel FY04	Avg Price of Diesel Fuel FY03	Avg Price of Diesel Fuel FY02	Avg Price of Diesel Fuel FY01	
APC	Chistochina	10	84	25,576	1.45	1.27	1.11	0.99	1.24	
Chitina Electric Inc.	Chitina	10	131	39,416	2.21	1.60	1.47	1.27	1.39	
Circle Electric Utility	Circle	10	84	34,750	2.00	1.74	1.14	1.12	1.25	
APC	Dot Lake	10	52							
APC	Eagle, Eagle Village	10	152	58,474	1.60	1.20	1.13	1.20	1.20	
Manley Utility Company	Manley Hot Springs	10	73	26,772	1.25	1.14	1.14	1.25	1.05	
APC	Mentasta	10	139	34,255	1.60	1.26	1.12	0.98	1.24	
AVEC	Minto	10	229	56,366	2.00	1.13	1.03	1.08	1.21	
APC	Northway	10	282	121,569	1.60	1.25	1.07	1.02	1.21	
APC	Tetlin	10	142	41,782	1.60	1.40	1.41	1.19	1.39	
APC	Tok	10	1,444	861,311	1.63	1.25	1.06	0.90	1.13	
	ROAD ACCESS		2,812	1,299,271						
	(weighted by population)					1.60	1.27	1.11	1.00	1.18
IPEC	Angoon	5	542	151,724	1.95	1.20	1.03	1.05	1.23	
IPEC	Chilkat Valley	5	226		1.95		0.98		1.42	
APC	Coffman Cove	5	161	57,572		1.16	1.03	0.92	1.19	
APC	Craig	5	1,562	141,958		1.09	1.11	0.61	1.22	
Elfin Cove Electric Utility	Elfin Cove	5	32	33,712	2.65	1.92	1.66	1.61	1.72	
Gustavus Electric Company	Gustavus	5	421	138,322	1.97	1.54	1.47	1.37	1.46	
APC	Haines	5	1,872	47,306	1.55	1.14	1.03	2.92	1.06	
APC	Hollis	5	150	32,848		1.09	1.03	0.91	1.16	
IPEC	Hoonah	5	868	347,792	1.95	1.34	1.15	1.06	1.35	
APC	Hydaburg	5	364	102,543		1.22	1.11	1.00	1.21	
IPEC	Kare	5	700	285,247	1.95	1.23	1.10	1.06	1.28	
APC	Klawock	5	848							
IPEC	Klukwan	5	111		1.95					
	Metlakatla	5	1,370							
APC	Naukati	5	110	44,577	1.50	1.09	1.00	0.92	1.17	
	Pelican	5	118							
APC	Skagway	5	841	13,008	1.30	1.16	1.06	1.12	1.24	
Tenakee Springs, City of	Tenakee Springs	5	95	36,235	3.15	1.71	1.54	1.41	1.62	
APC	Thorne Bay/Kasaan	5	558					1.05	1.39	
APC	Whale Pass	5	62	27,824	1.30	1.12	1.03	1.14	1.34	
Yakutat Power	Yakutat	5	805	461,951		1.30	1.15	1.07	1.30	
	SOUTHEAST		11,822	1,922,111						
	(weighted by population)					1.70	1.23	1.11	1.30	1.23

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Utility (FY04 Report)	Community (FY04 Report)	Region	Pop 6/30/04	Total Fuel Used (gallons) FY04 (ELEC UTIL ONLY)	Most Recent Diesel Price FY05	Avg Price of Diesel Fuel FY04	Avg Price of Diesel Fuel FY03	Avg Price of Diesel Fuel FY02	Avg Price of Diesel Fuel FY01
NSB	Anaktuvuk Pass	4	302	576,657		0.91	1.66	1.66	1.74
NSB	Atkasuk	4	231	264,780		1.61	1.55	1.53	1.48
NSB	Kaktovik	4	306	308,989		1.39	1.38	1.38	1.33
NSB	Nuiqsut	4	443	387,846		1.21	1.22	1.22	1.13
NSB	Point Hope	4	709	395,989		1.39	1.38	1.41	1.33
NSB	Point Lay	4	256	248,548		1.39	1.38	1.38	1.25
NSB	Wainwright	4	543	377,950		1.39	1.38	1.38	1.33
	NORTH SLOPE BOR		2,790	2,560,759					
(weighted by population)	wt. avg fuel price					1.33	1.40	1.41	1.35

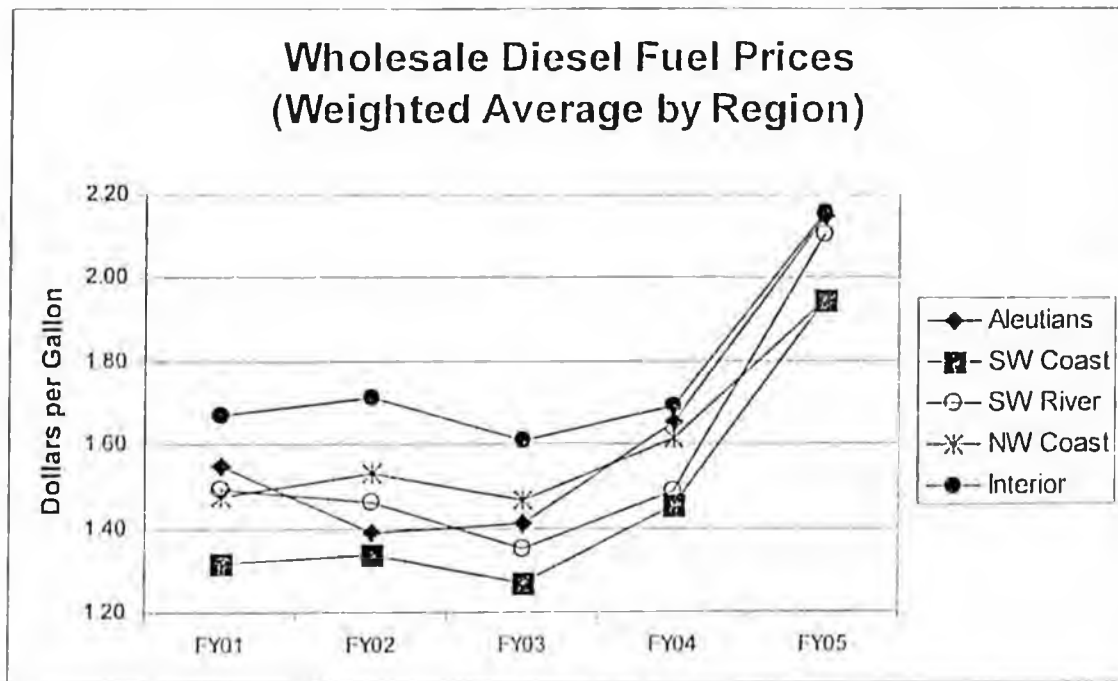
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There are approximately 15 additional communities with less than 2,000 population that were not included in this spreadsheet because they were not identified in the PCE data. The total population of these additional communities is approximately 1,500.

Note on Region Key: 9 = Southcentral Inland (e.g. Iliamna) as well as Southcentral Coast (e.g. Port Graham)

As shown in Table 4, a weighted average price of diesel fuel was calculated for each region and each fiscal year. The population of each community was used to provide the weights, meaning that the price incurred by larger communities within a region was given proportionately greater weight than the price incurred by smaller communities. These weighted average prices for those regions with the most BFRLF borrowers are shown in Graph 6 below:

GRAPH 6



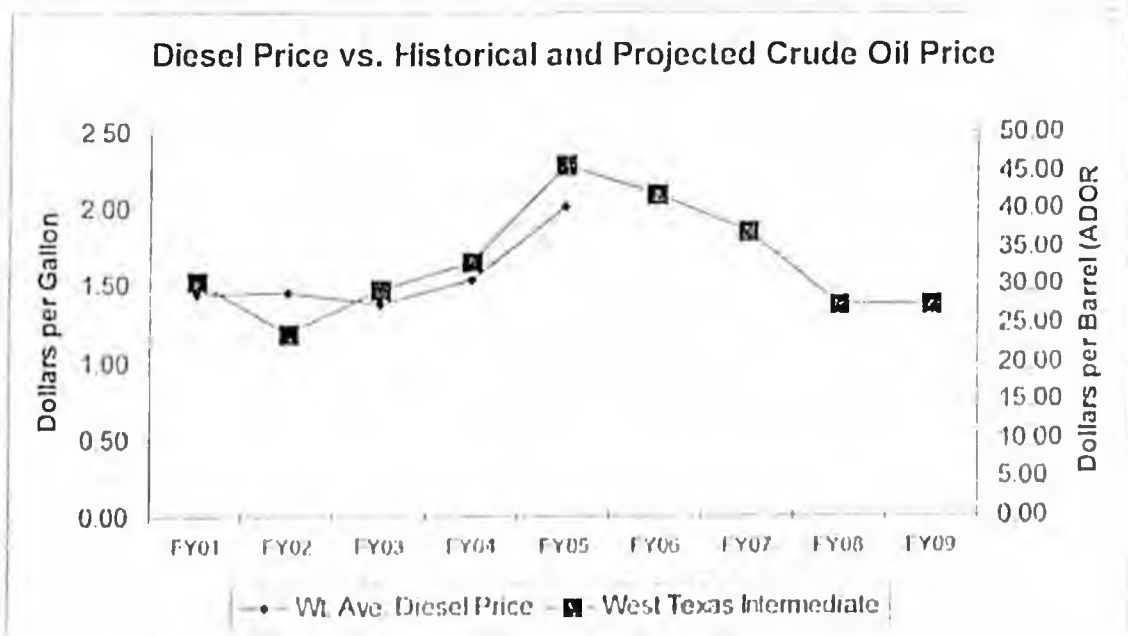
Two observations are apparent from Graph 6:

- Average diesel prices were essentially flat from FY01 through FY03. Even in FY04, average prices were not appreciably higher than the prior 3 years although they were on an upward trend. The most recent prices reported for FY05 reflect the sharp increases that occurred everywhere during that time period.
- Prices for communities on the Southwest coast are consistently lower than prices in the Interior, with prices for delivery on the Northwest coast and in the Southwest River regions falling roughly in between. This rank order of average prices makes sense in the context of barge transportation costs. Delivery cost to the Southwest coast would typically be less than the Northwest Coast, while delivery to upriver communities would be more costly than either coastal region.

As expected, this diesel price trajectory corresponds quite well with the historical pattern of world crude oil prices. The Alaska Department of Revenue publishes its "Revenue Sources Book" twice each year, and includes historical crude prices along with its own price projection for revenue planning purposes. Graph 7 below compares two sets of prices on two different axes in order to compare upward and downward trends:

- The first series is the historical price of diesel fuel delivered to bulk fuel purchasers in the 5 regions shown in Graph 6, weighted by the population in each region. As before, this series runs from FY01 through FY05.
- The second series is the historical and projected crude oil price<sup>5</sup> published by the Department of Revenue in its Spring 2005 Revenue Sources Book. The historical series runs through FY04 while the projections begin in FY05, since actual prices throughout FY05 are not yet known when the Spring 2005 Revenue Sources Book is published.

GRAPH 7



Observations from Graph 7 include the following:

<sup>5</sup> The benchmark crude used by the Department of Revenue is West Texas Intermediate. Both the diesel price and crude prices series are expressed in nominal dollars.

- The wholesale price of diesel fuel delivered to bulk fuel purchasers in rural Alaska follows the world price trajectory quite well.

The one anomaly in the graph occurs in FY02, during which the world oil price dropped yet the weighted average wholesale diesel price remained constant. On the other hand, in FY03 the diesel price dropped while world oil prices went back up.

- The Department of Revenue spring 2005 forecast anticipates that world oil prices over the next 3 years will fall back to \$27.50 per barrel, roughly where they were before the price increases began in FY04.

This general expectation is evidently shared by the Energy Information Administration (EIA) within the U.S. Department of Energy. In its "Annual Energy Outlook 2005," EIA published its "reference case" forecast of the average price of all petroleum products to all end-users expressed in real (i.e. inflation-adjusted) dollars.<sup>6</sup> In real terms, EIA's forecast of \$9.91 per million Btu in 2010 is below the historical price they report for 2003 – \$10.51 per million Btu.

It hardly needs repeating that oil price forecasting is a hazardous business.<sup>7</sup> However, at least these two institutions think it most likely that today's high prices will not last – presumably, their view rests in large part on the idea that market factors will force the price back down through demand and supply responses.

Table 5 compares the percentage increase in the average BFRLF loan size since FY03 with the percentage increase in the weighted average diesel price shown in Graph 7 above:

TABLE 5

Percentage Increase

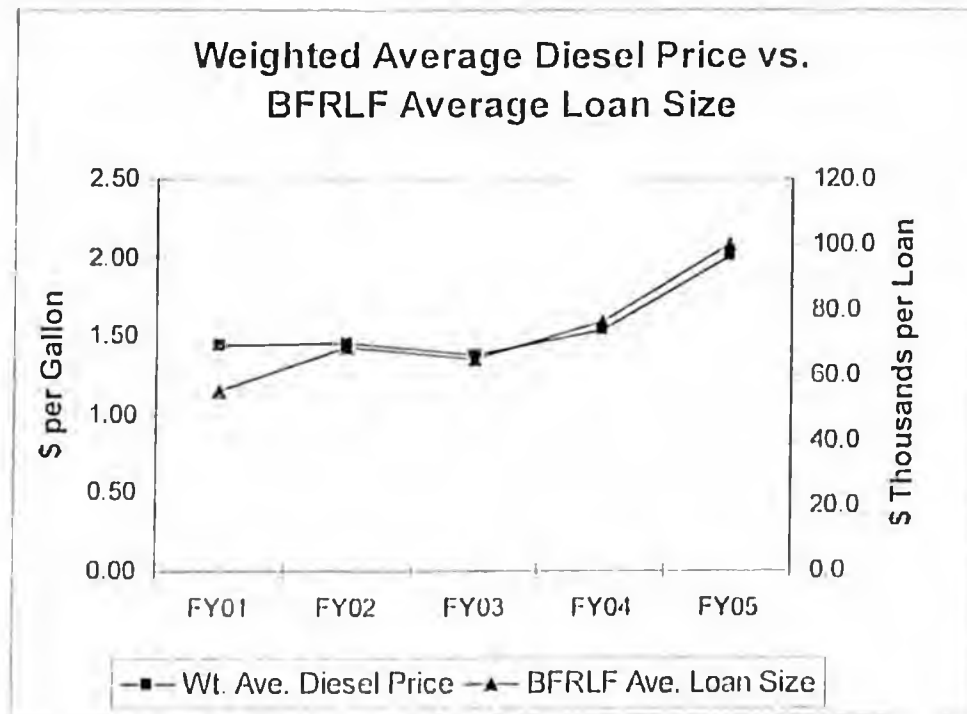
	<u>Ave. BFRLF Loan Size</u>	<u>Weighted Ave. Diesel Price</u>
FY03 to FY04	17%	12%
FY04 to FY05	31%	31%

<sup>6</sup> See page 144, Table A3, of EIA's 2005 Annual Energy Outlook

<sup>7</sup> From the mid-70's to the mid-80's, nearly all published opinion agreed that oil prices would continue to rise over the long term at whatever the most recent trend seemed to indicate, yet the price crash in 1986 and the mostly low prices that followed for almost 20 years proved them all wrong. Given this past experience, published opinion on future oil prices tends to be more varied today.

These two trends – BFRLF average loan size and weighted average diesel price – for FY01 through FY05 are compared in Graph 8 below:

GRAPH 8



Both Table 5 and Graph 8 show a close correlation between average diesel price and average loan size, and we can safely conclude on the basis of this record that diesel price is a dominant factor in explaining the historical changes in average loan size. It could explain virtually all of that change if the identity of the borrowers and their volume requirements remained the same from year to year. But these factors do not stay the same and so there may be additional causes of change in average loan size that are worth considering.

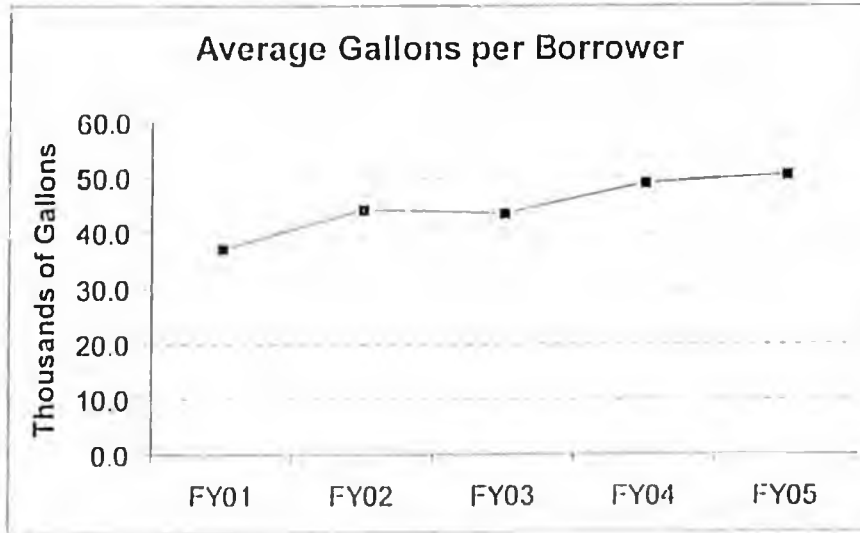
Gallons Financed per Borrower

To estimate average gallons financed per borrower per fiscal year, the price per gallon paid by the borrower is needed to divide into the loan amount. These prices are not entered into the BFRLF data base and it is impractical to go into 5 years of loan files to ferret them out. So, to arrive at an estimate, the loan amounts for each borrower have been divided by the diesel prices obtained from PCE records for each borrower community and fiscal year. Imperfect though this is, the methodology should be adequate to uncover major trends.

The estimated gallons financed per borrower per fiscal year derived in this fashion are shown below and are plotted on Graph 9:

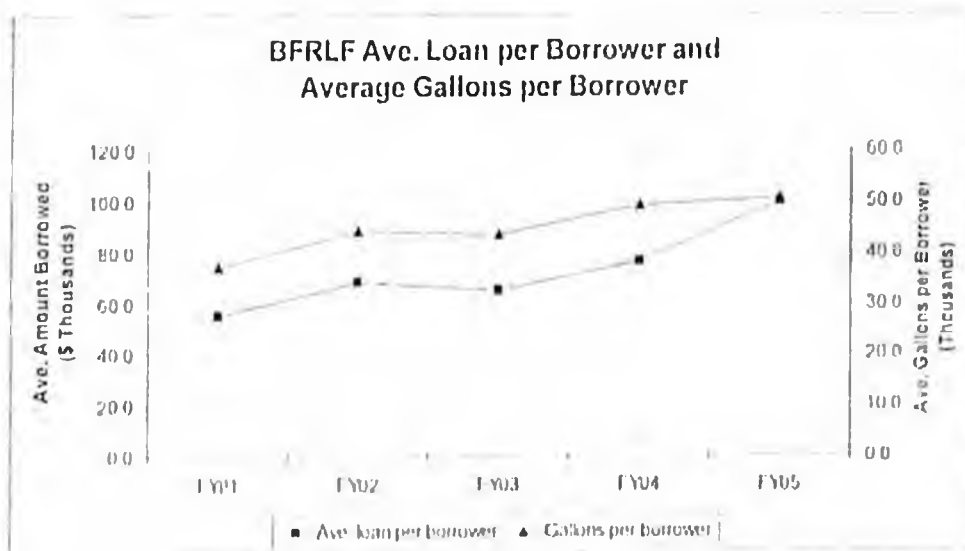
	<u>FY01</u>	<u>FY02</u>	<u>FY03</u>	<u>FY04</u>	<u>FY05</u>
Gallons Financed per Borrower (Thousands)	37.3	44.3	43.6	49.2	50.7

GRAPH 9



Returning to the question of average loan size and the possible causes of its long term increase, Graph 10 compares average gallons financed per borrower with average BFRLF loan size:

GRAPH 10



As expected, not only changes in diesel price but also changes in average gallons per borrower – both showing a substantial increase between FY01 and FY05 – are correlated with and contribute to the increase in average BFRLF loan per borrower. It is assumed that, averaged across all borrowers, the percentage of borrower requirements that has been financed vs. the percentage that has been paid for in cash has not changed appreciably over the 5-year period, and that therefore the increase in gallons per borrower represents primarily an increase in the borrowers' volume of fuel requirements. This assumption is based on the fact that gallons per borrower increased from FY01 through FY04, during which fuel prices were relatively stable, but did not increase from FY04 to FY05, when prices increased sharply. If the increase in gallons financed per borrower were primarily due to a need to finance a greater share of fuel requirements due to their increasing cost, then the opposite pattern should be observed.

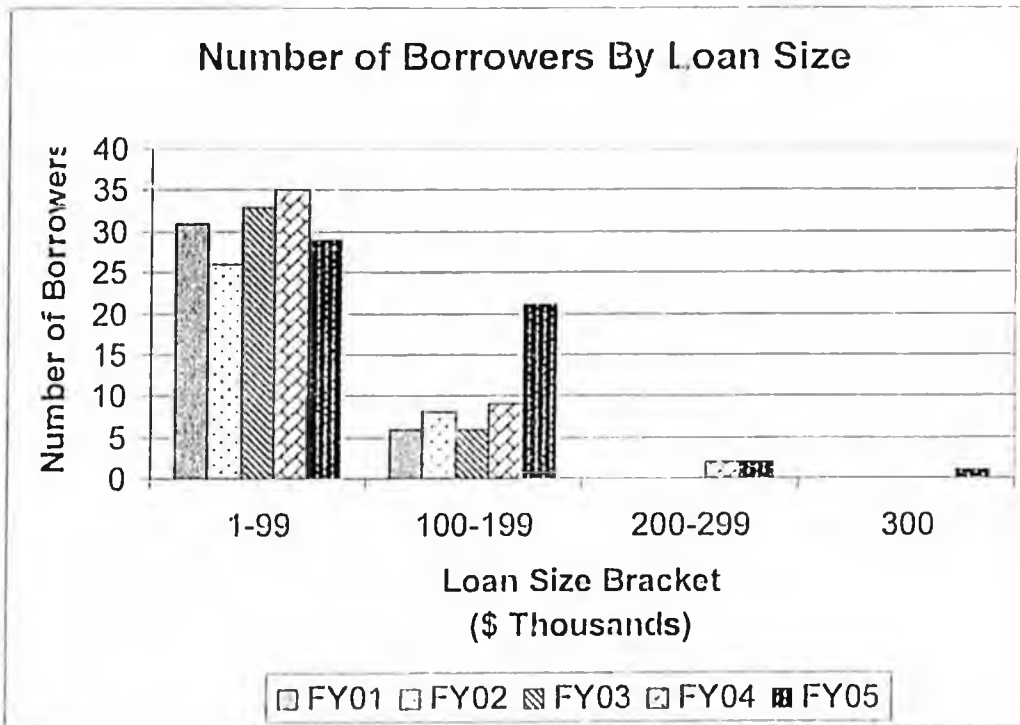
#### Impact of Increased Loan Limit

As noted before, an individual borrower has been limited by statute to the following maximum loan amounts:

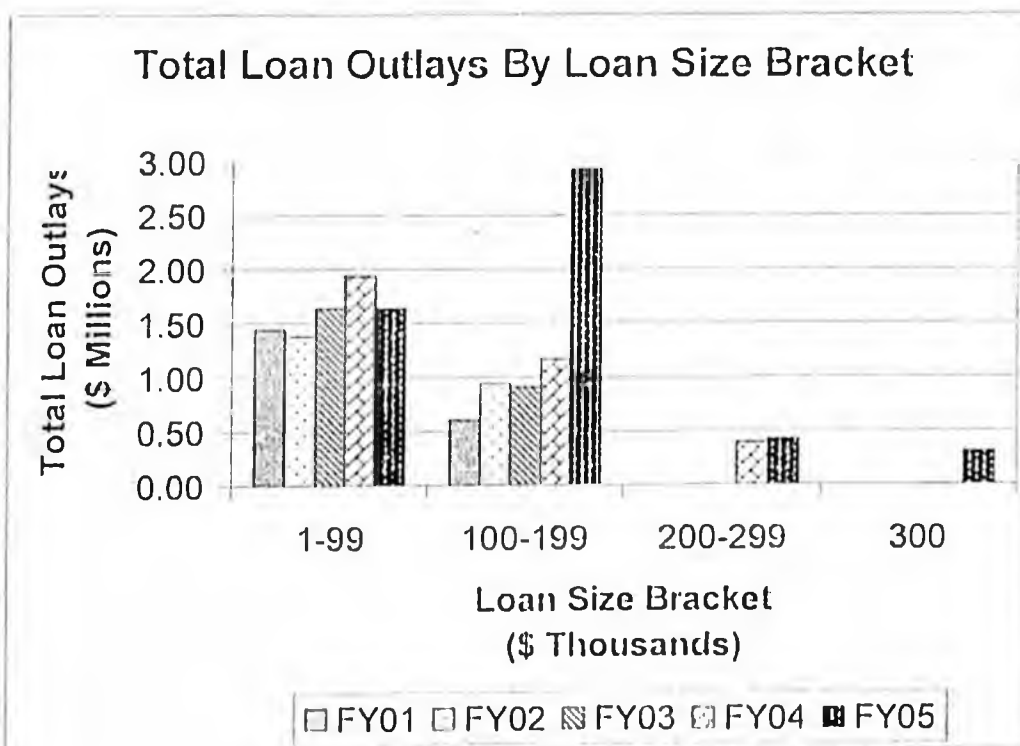
- \$100,000 per fiscal year in FY01 and FY02.
- \$200,000 per fiscal year in FY03.
- \$300,000 per fiscal year in FY04 and FY05.

Graphs 11 and 12 show the number of borrowers and total amounts loaned by loan size bracket over the last 5 fiscal years:

GRAPH 11



GRAPH 12



Thus far, only 1 borrower (a local government new to the program) has been loaned the full \$300,000 that has been allowed over the past 2 years. This occurred during FY05.

Only two additional borrowers were loaned \$200,000 or more during FY05: one borrowed approximately \$212,000 and the other borrowed \$207,000.

Clearly, FY05 saw a significant increase in the number of loans and total amount loaned in the \$100,000 - \$199,000 bracket. About 2/3 of these borrowers had received loans from the program for several prior years while the other 1/3 were new borrowers in FY04 or FY05.

Following the increase in borrower limit to \$200,000 that took effect in FY03,<sup>8</sup> the response both in borrowers and amounts loaned was relatively modest for a couple of years but then, in FY05, became very significant. Clearly, the sharp increase in fuel prices contributed to this but there may also be a lag effect in the response of bulk fuel purchasers to the increased limit.

AEA does not aggressively market the program in an effort to attract more borrowers. Some might argue that such efforts should be made so that program benefits – access to financing, low interest rates, and prompt payment to fuel suppliers<sup>9</sup> – would be shared by more people. Others might argue that the State should not entice people into long-term reliance on its programs, or that building greater demand for the program will at some point require the State to increase the Fund's capitalization. In any event, it presumably takes time for potential borrowers to learn that annual limits have been increased, and it may also require a jolt such as the sharp increase in fuel prices to change existing practices with respect to bulk fuel financing.

There has clearly been a response, though somewhat delayed, to increasing the limit to \$200,000, and this has contributed to the increase in average BFRLF loan size. There has been very little response during the last two years to the increase to \$300,000. A lagged response similar to what happened with the increase to \$200,000 could certainly occur sometime in the next several years. Or there could be other explanations. For example, perhaps the larger bulk fuel purchasers are better established in their financing arrangements – whether those arrangements

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<sup>8</sup> As shown in Graphs 11 and 12, AEA loaned over \$100,000 to several borrowers in FY02 although the increase in the annual limit from \$100,000 to \$200,000 took effect at the beginning of FY03. This reason for this discrepancy is that the borrower limit per fiscal year is applied by AEA to loan commitments, not to loan disbursements.

<sup>9</sup> Fuel suppliers can be expected to offer lower prices to customers who have arranged for prompt payment compared with customers to whom the supplier must extend credit or whose full and timely payment may be uncertain.

involve cash up front or credit from another source – and therefore have less need for the BFRLF option compared with smaller purchasers. Such questions will contribute to the uncertainty in projecting program demand.

## SECTION 2

### ANNUAL VOLUME AND WHOLESAL COST OF DIESEL FUEL AND GASOLINE DELIVERED TO COMMUNITIES THAT ARE ELIGIBLE FOR A BFRLF LOAN

To estimate the potential market for BFRLF loans, to understand the extent of its current role in financing bulk fuel acquisition in eligible communities, and to understand how much is purchased or financed by other means, the total annual consumption of diesel fuel and gasoline in these eligible communities must be estimated. For this study, the methodology initially selected to do this was to first estimate the average consumption of diesel fuel and gasoline per person and to then multiply that average by the population in eligible communities.

AEA has been engaged for a number of years in the construction of new, consolidated bulk fuel storage facilities in rural communities. One of the first steps in designing such facilities is to determine the amount of fuel storage capacity that the community will need. These determinations are found in the conceptual design reports ("CDRs") that AEA commissions. For many of the CDRs, the engineers begin by estimating the annual consumption of diesel fuel and gasoline in the community based on available records and estimates from local people involved with bulk fuel acquisition, storage, and use.

Table 6 shows the estimates developed in 12 CDRs for communities that are eligible for BFRLF loans. The last two columns of the table show the population estimates for each community and the estimated gallons per person derived by dividing total consumption by population:

TABLE 6

Community	Date of CDR	Annual Consumption					Pop In year of CDR	Estimated Gallons per Person
		Diesel Electric Utility	Diesel Schools	Diesel Other or Not Specified	Gasoline	TOTAL		
Iquigig	Nov-01	(incl in "other")	10,000	35,000	15,000	60,000	62	968
Kongiganak	Jan-00	62,200	41,800	50,700	57,300	212,000	348	609
Kokhanok	Oct-01	30,000	36,000	22,000	18,500	106,500	174	612
Koyukuk	Oct-01	(incl in "other")	13,000	38,000	33,600	84,600	101	838
Kotlik	Jan-00	(incl in "other")	34,000	198,000	145,000	377,000	579	651
Newtok	Nov-03	36,000	29,000	34,500	50,000	149,500	326	459
Nunapitchuk	Jun-00	89,490	22,600	83,000	71,300	266,390	471	566
Toksook Bay	Oct-00	98,600	17,200	89,300	55,200	260,300	513	507
Tununak	Dec-00	64,700	19,600	56,400	30,000	170,700	331	516
Kiana	Jun-99	110,000	43,000	93,000	55,000	301,000	398	756
Buckland	Dec-99	(incl in "other")	39,500	135,000	50,000	224,500	428	525
Elim	Sep-97	60,000	21,000	65,000	50,000	196,000	301	651

Based on these numbers alone, the population weighted average consumption per person is 597 gallons. But this number appears to be much too low for the following reasons:

- Other recent estimates of diesel fuel use for electric utilities alone in rural Alaska are about 360 gallons per person per year. For example, the FY04 PCE Statistical Report includes the following summary figures for all PCE communities:

Total fuel oil consumed = 28,476,898 gallons

Total population served = 78,166

Dividing fuel oil consumed by population yields 364 gallons per person per year.

This was corroborated in a presentation by the Institute of Social and Economic Research to the Rural Alaska Energy Conference in September 2002 on the cost of power in rural Alaska. ISER used essentially the same 360 gallon per person estimate for electric utilities on PCE. This was probably taken from an earlier PCE statistical report, but ISEP's use of it suggests that the figure is consistent with other energy studies they have conducted.

If total use of diesel fuel and gasoline in rural Alaska were 597 gallons per person, this electric utility estimate would mean that about 60% of a rural community's total fuel consumption is for electric power alone – an implausibly high percentage.

Table 6 itself suggests that this percentage is implausibly high. There are 8 CDRs in Table 6 that present a separate figure for electric utility use. Gallonage sums for these 8 CDRs are as follows:

Total for electric utility use = 550,990 gallons

Total diesel fuel and gasoline for all uses = 1,662,390

For the 8 CDRs, electric utility use is therefore estimated as 33% of total gallonage – not 60%.

- There are significant qualifications stated in some of the CDRs with respect to their estimates of annual consumption. One states that fuel used in the washeteria is excluded from the estimate. Others indicate that certain estimate components are "winter only." Still others are confusing in whether all school use is included in the estimate.
- A number of the CDRs note upcoming developments such as new schools or other public facilities that would create more fuel use per capita.

Consistent with this, AEA staff reports the continuing growth in village infrastructure, particularly the increasing number of new water and sewer projects requiring significant and ongoing energy inputs.

Finally, an estimate of the total market for diesel fuel only (not including gasoline) for western Alaska and the Arctic Slope appears in an April 2001 report prepared by Northern Economics for the Alaska Industrial Development and Export Authority (AIDEA). The relevant excerpt is quoted below:

"The total market for heating and diesel fuel in Western Alaska (west of 154° W longitude and all of the Arctic Slope, excluding military and oil and gas operations on the North Slope) is about 160 to 185 million gallons a year. Of this amount, the fishing industry (processing plants and fishing fleets at Unalaska/Dutch Harbor, and other processing plants and vessels elsewhere on the Alaska Peninsula and Aleutian Chain) accounts for about 90 million gallons. Of the remaining 75 to 90 million gallons, very little is not bought under a cooperative or organized group purchase (Dwight, 2000)."<sup>10</sup>

To rephrase, the 2000 estimate reported by Northern Economics is 75 to 90 million gallons of diesel fuel only in western Alaska and the Arctic Slope, excluding military, oil and gas operations, and the commercial fishing industry. From the same document (and the same page), it appears that an additional 12 million gallons should be deducted from this estimate to account for usage at the Red Dog Mine, leaving a range of 63 - 78 million gallons of diesel fuel for non-industrial heating and power generation.

The population in this region (including communities over 2,000 population that are excluded from Table 4) can be estimated as follows:

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<sup>10</sup> The excerpt appears in "Screening Report for Alaska Rural Energy Plan," Northern Economics Inc., April 2001, page 3-4. The reference to "Dwight, 2000" is an August 30, 2000 personal communication between Northern Economics Inc. and Jim Dwight of Crowley Maritime Inc.

<u>Region or Community</u>	<u>Source</u>	<u>Population</u>
Aleutians	Table 5	3,535
SW Coast	Table 5	16,077
SW River	Table 5	7,552
NW Coast	Table 5	8,397
Interior (70%) <sup>11</sup>	Table 5	3,491
Southcentral <sup>12</sup>	Table 5	797
North Slope Borough	Table 5	2,790
Barrow	State Demographer	4,351
Bethel	FY04 PCE Stats	5,786
Dillingham	FY04 PCE Stats	2,749
Kotzebue	FY04 PCE Stats	3,107
Nome	FY04 PCE Stats	3,493
Unalaska	FY04 PCE Stats	<u>4,051</u>
TOTAL		66,176

The per capita use of diesel fuel for heating and power generation derived from these estimates is as follows:

70.5 million gallons (mid-point of 63-78 million gallon range)

Divided by

66,176 population =

1,065 gallons of diesel fuel per person (excluding gasoline).

Based on these different approaches and given the various conflicts in the data, the judgment applied here is that the per capita estimate of diesel use and gasoline from Table 6, which was based solely on the CDRs, should be approximately doubled: from 597 to 1,200 gallons per person per year.

In estimating the market for BFRLF loans, there is at least one adjustment that should be made to the per capita consumption figure: the amount of fuel purchased in bulk by rural school systems. The school districts operate on budgets that permit them to pay cash for their bulk fuel orders. Fuel consumption by school districts should therefore be excluded from the potential market for BFRLF financing.

<sup>11</sup> Some Interior communities (e.g. Fort Yukon, Tanana, Venetie) are east of 154° W longitude, though most are not (e.g. Galena, McGrath, Nulato, Huslia, Ambler). 70% of Interior population in Table 5 assumed in "western Alaska."

<sup>12</sup> Minus Tatitlek and Chenega Bay.

Some of the flaws in Table 6 have been discussed above, one of which is that fuel consumption for one or more of the schools in a community might not be included in the "school" figure shown. The total school consumption for all 12 CDRs shown in Table 6 comes out to 14% of the total consumption shown for diesel fuel and gasoline. Reducing the estimate of 1,200 gallons per person by 14% yields a revised estimate of 1,032 gallons per person. Rounding this down a little in view of the apparent exclusion of some school consumption in the CDRs, 1,000 gallons per person per year is adopted herein for use in estimating the total, potential market for BFRLF financing in eligible communities.

This is obviously imprecise but the purpose for which the number is used in this study does not require precision. That purpose is to develop a rough estimate of how much diesel fuel and gasoline constitutes the total, potential market each year for bulk fuel financing. And the purpose of that is to estimate how much of the total market is currently served by the BFRLF and, at least in theory, how much room for growth there might be in BFRLF demand.

Table 7 shows the application of this 1,000 gallon per person estimate to the population of communities that meet the BFRLF eligibility criteria:

**TABLE 7**

**BFRLF POTENTIAL MARKET**

Region Code	Region	Population	Adjusted Pop*	Annual Fuel Per Person	Annual Fuel (Millions of gal)	Wholesale Cost ** FY05 (\$ Millions)	Wholesale Cost ** FY04 (\$ Millions)	Wholesale Cost ** FY03 (\$ Millions)	Wholesale Cost ** FY02 (\$ Millions)	Wholesale Cost ** FY01 (\$ Millions)
1	Aleutians	3,535	3,535	1,000	3.5	7.6	5.8	5.0	4.9	5.5
2	Kodiak	628	628	1,000	0.6	1.4	0.9	0.9	0.8	1.0
3	SW Coast	16,077	16,077	1,000	16.1	31.3	23.4	20.4	21.5	21.1
6	SW River	7,552	7,552	1,000	7.6	15.9	11.2	10.2	11.1	11.3
8	NW Coast	8,397	8,397	1,000	8.4	16.3	13.6	12.3	12.9	12.4
7	Interior	4,987	4,987	1,000	5.0	10.8	8.4	8.0	8.6	8.3
9	Southcentral	995	995	1,000	1.0	2.4	1.9	1.8	1.8	1.8
10	Road Access	2,812	1,405	1,000	1.4	2.4	1.8	1.1	1.4	1.7
5	Southeast	11,822	5,911	1,000	5.9	10.4	7.2	6.5	8.2	7.4
4	North Slope Borough	2,790	-	1,000	0.0	0.0	0.0	0.0	0.0	0.0
	Other not in PCE data	1,604	1,604	1,000	1.6	3.2	2.5	2.2	2.3	2.3
<b>TOTALS</b>			<b>51,092</b>		<b>51.1</b>	<b>101.7</b>	<b>76.7</b>	<b>68.4</b>	<b>73.4</b>	<b>72.6</b>
BFRLF loans (\$ Millions)						5.3	3.5	2.5	2.3	2.0
BFRLF loans as % of total wholesale cost						5.2%	4.6%	3.7%	3.2%	2.8%
Gallons financed by BFRLF loans (millions)						2.7				
BFRLF gallons as % of total eligible gallons						5.3%				
<p>* Adjustment: Road Access and Southeast population cut in half to account for communities that receive bulk fuel shipments more frequently than every six months. North Slope Borough reduced to zero based on the assumption that BFRLF financing will not be needed for the foreseeable future.</p> <p>** This equals gallons of diesel fuel and gasoline multiplied by the average diesel price estimated for the specified year. This approximation is used since diesel fuel accounts for over half the total and detailed data on wholesale gasoline prices by region and year are not readily available. Price for "other" equals population weighted average for all communities.</p>										

The estimate produced by this methodology is that the current potential market for bulk fuel financing in communities that meet BFRLF eligibility criteria is roughly 50 million gallons of diesel fuel and gasoline, the delivered, wholesale cost of which in FY05 was roughly \$100 million. Despite the issuance of BFRLF loans to 53 borrowers in FY05 and the significant recent growth in loan outlays, an estimated 95% of the diesel fuel and gasoline purchased in this potential market is financed in some other way. As shown in Table 7, based on all of the assumptions and calculations described above, BFRLF financing in FY05 accounted for only 5.2% of the market for bulk fuel financing in eligible communities.

One of the constraints that limits the use of BFRLF financing is the program's \$300,000 annual limit per borrower. As shown above, very few borrowers have thus far approached that limit. However, a significant portion of the 50 million gallons included in the potential market is accounted for by entities that need to order considerably more than \$300,000 worth of fuel per year. The Alaska Village Electric Cooperative (AVEC) is a case in point. According to the FY04 PCE statistical report, AVEC used about 5.0 million gallons of fuel during that year at a cost of \$7.4 million. And during FY05, AVEC's cost of fuel is estimated at closer to \$10 million.<sup>13</sup> Since this far exceeds the amount that AVEC could borrow from the BFRLF, AVEC's requirements cannot be considered part of the market that the BFRLF could serve under current law.

The portion of the 50 million gallons estimated above that could be financed within the current \$300,000 limit per borrower is unknown since there is no data base that shows all of the bulk fuel purchasers in eligible communities along with their annual fuel purchases. Among the relevant considerations, however, are the following:

- Using figures from the FY04 PCE statistical report, PCE electric utilities serving communities with less than 2,000 population (and excluding the North Slope Borough) consumed about 15.3 million gallons during that year. However, PCE utilities with less than \$300,000 of fuel expense during that year consumed only 3.8 million gallons. In other words, of the 15.3 million gallons consumed by electric utilities in eligible communities, only 25% was accounted for by utilities with less than \$300,000 per year of fuel expense.

Of the remaining 75%, most is accounted for by multiple-village utilities including AVEC, Alaska Power Company, and Inside Passage Electric Cooperative, which together consumed about 7.5 million gallons. The balance of the 75% is accounted for by the larger stand-alone utilities that serve relatively high electrical demand compared with most PCE communities.

<sup>13</sup> Meera Kohler, Alaska Village Electric Cooperative. Personal communication with Emerman Consulting. July 2005.

In short, at least in the electric utility sector, the \$300,000 limit per borrower excludes the major share of fuel consumption from possible financing through the BFRLF.

On the other hand, there are at least three factors that suggest there still exists a considerable untapped market for BFRLF financing that would fit within its current structure:

- i. A bulk fuel purchaser may need to borrow some but not all of the cost of its annual fuel requirement. For example, a purchaser with a \$500,000 annual requirement might pay half in cash up front and borrow the remainder from the BFRLF. It is not uncommon for bulk fuel purchasers to pay what they can from cash in hand and finance the rest. This means that the potential market for BFRLF loans currently extends well into the ranks of bulk fuel purchasers with annual fuel requirements that exceed \$300,000.
- ii. As shown in Table 8 and Graph 13 in the next section, in most communities where BFRLF loans have recently been issued, these loans finance only a relatively small share of the community's fuel requirement – less than 30% in most cases. This, plus the fact that a number of borrowers move in and out of the program periodically as dictated by their financing needs, plus the fact that almost no communities have yet exceeded \$200,000 per year in BFRLF borrowing, suggests that there is significant room for growth among current and prior BFRLF borrowers.
- iii. As shown in Table 9 in the next section, there are as many communities for which a BFRLF loan has never been issued as there are communities for which a BFRLF loan has been issued over the last 5 years. These "non-borrower" communities span the full range of eligible sizes (i.e. from very small up to 2,000 population) and are found in all regions.

Overall, an assumption is needed on how much of the 50 million gallon (\$100 million) market could be served by the BFRLF as presently constituted. Applying the points raised above:

- If the entire market for bulk fuel in eligible communities mirrored the electric utility sector, only 25% of the market would consist of purchasers who require \$300,000 or less to purchase fuel each year.
- On the other hand, in most communities for which BFRLF loans have been issued, at least 70% of their fuel is financed by other means and the size distribution of these other purchasers could be much different than the size

distribution of electric utilities. Many bulk fuel purchasers who require more than \$300,000 per year should still be considered potential BFRLF borrowers assuming they can pay cash for whatever they need in excess of a \$300,000 loan. And there are as many eligible communities of all sizes for which no BFRLF loan has been issued as there are "borrower communities."

Given these considerations, this study adopts the assumption that 25 million gallons (valued during FY05 at approximately \$50 million) constitutes the potential market for BFRLF financing under current law.<sup>14</sup> This is half of the total market for diesel fuel and gasoline defined above for eligible communities.

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<sup>14</sup> As noted earlier in this report, it is recognized that bulk fuel prices for delivery to many purchasers in fall 2005 may be higher than the prices reported to rural electric utilities in FY05.

distribution of electric utilities. Many bulk fuel purchasers who require more than \$300,000 per year should still be considered potential BFRLF borrowers assuming they can pay cash for whatever they need in excess of a \$300,000 loan. And there are as many eligible communities of all sizes for which no BFRLF loan has been issued as there are "borrower communities."

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### SECTION 3

#### DEMAND PROJECTIONS FOR BFRLF LOANS ASSUMING NO CHANGES IN THE PROGRAM

For this study, the first stage of program demand projections is to estimate for the next 10 years how much the program would issue in loans assuming:

- No change in program law or regulation (including no change in the \$300,000 limit), and
- No restriction on how much money the BFRLF has to lend. Demand projections that exceed the program's current lending capacity serve to demonstrate how much additional capitalization may be needed in order to avoid rationing of loan funds or rejection of loan applications due to inadequate lending resources.

To be consistent with this study's estimate of the potential market for BFRLF loans under current law, the demand projection cannot – at least in the near term – exceed 25 million gallons.

The first stage projection begins by:

- identifying the communities that are currently served by the BFRLF;
- estimating how much of the demand for diesel fuel and gasoline in these communities is currently financed by BFRLF loans; and
- identifying the communities that have not been served by the BFRLF during the last 5 years.

Each community for which a BFRLF loan was issued in FY04 or FY05 is listed in Table 8 below. To better understand the table, please note:

- In some communities there were 2 separate borrowers (for example, both a local government and a village corporation), while in other communities there was only one borrower. In Table 8, all BFRLF borrowing within a community is combined regardless of the number of borrowers.
- For most of the communities, BFRLF loans were issued in both FY04 and FY05 although for some communities loans were issued for only one of the two years. When BFRLF loans were issued for both years, the average of the two years appears in Table 8. When a loan was issued for only one of the two years, the amount issued for that year appears in

Table 8 (despite the heading in column 4 suggesting that all the figures in that column are two-year averages).

- Although there must be significant variation between communities and between regions in the per capita consumption of diesel fuel and gasoline, a very rough "Reference Index" is constructed in Table 8 to get some idea of how reliant the community is on BFRLF financing. The "Reference Index" consists simply of the community population multiplied by 1,000 gallons per person, which represents (albeit with widely varying accuracy) the general magnitude of diesel fuel and gasoline that might plausibly be financed. The second to last column of Table 8 shows the percent of total gallons (i.e. the percent of the "Reference Index") that was financed with one or more BFRLF loans either for the year in which the loan was issued or for the average of the last two years.
- Within each region, the communities are sorted according to the "BFRLF % Of Reference Index" – that is, according to the extent of estimated reliance on BFRLF financing.
- Finally, the last column shows whether the electric utility in that community was one of the large, multi-village regional utilities: AVEC (Alaska Village Electric Cooperative), APC (Alaska Power Company), or IPEC (Inside Passage Electric Cooperative).<sup>15</sup>

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<sup>15</sup> There was some thought earlier in this study that the presence of one of these electric utilities might have some bearing on whether a BFRLF loan was requested from and issued to a borrower in that community. The information is presented in Table 9 and also in Table 10, but no clear link between the presence of these utilities and the issuance of a BFRLF loan was found.

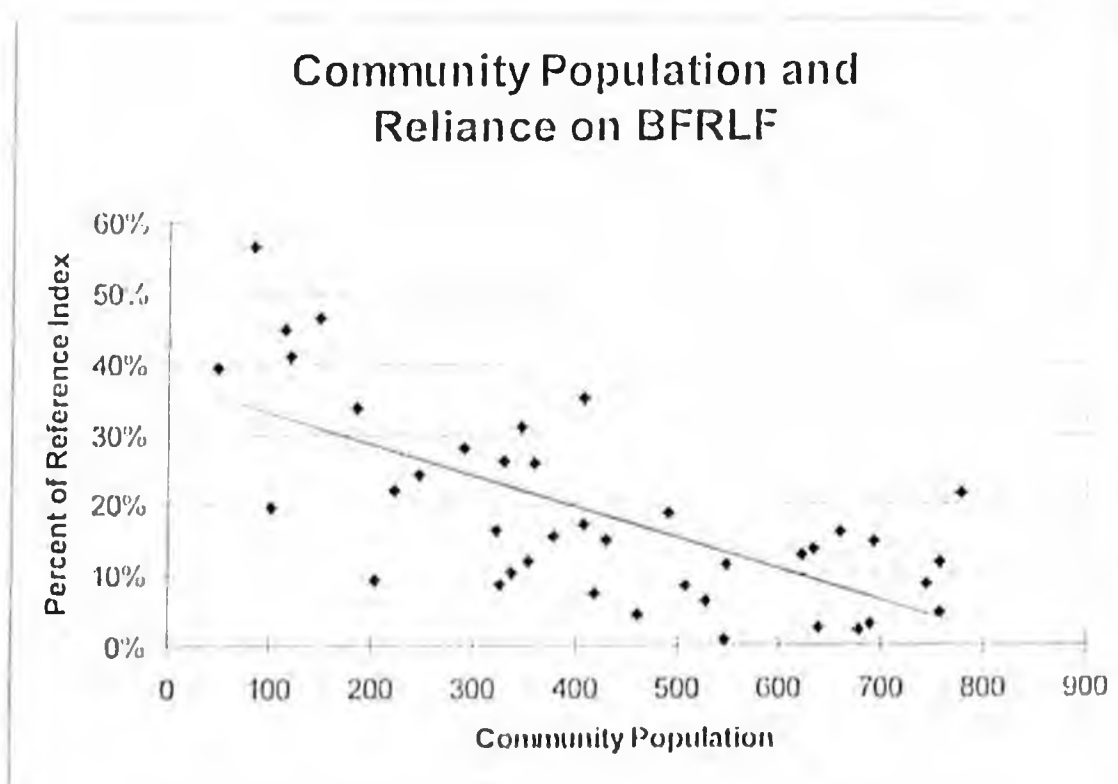
TABLE 8

Community	Region	Pop	Average Borrowed From BFRLF Per Community Per Year	Approx Gallons Financed Per Year By BFRLF	Reference Index Total Gallons Per Year That May Be Financed	BFRLF % Of Reference Index	Elec Utility AVEC, IPEC, or AVE?
Ekwo	SW Coast	114	\$122,383	51,114	114,000	45%	
Koliganek	SW Coast	186	\$141,667	62,645	186,000	34%	
Akiak	SW Coast	340	\$183,762	106,900	340,000	31%	
Alnautluak	SW Coast	291	\$179,156	95,791	291,000	33%	
Kongiganak	SW Coast	359	\$175,851	92,553	359,000	26%	
Scammon Bay	SW Coast	491	\$146,476	92,227	491,000	19%	AVEC
Tununak	SW Coast	323	\$75,747	52,469	323,000	16%	AVEC
Alakanuk	SW Coast	659	\$144,605	104,787	659,000	16%	AVEC
Kolik	SW Coast	633	\$149,665	85,676	633,000	14%	
Akiachak	SW Coast	622	\$151,103	79,985	622,000	13%	
Mountain Village	SW Coast	757	\$135,797	88,685	757,000	12%	AVEC
Toksook Bay	SW Coast	549	\$110,135	62,773	549,000	11%	AVEC
Kwigilingok	SW Coast	337	\$60,000	34,572	337,000	10%	
Nunam Iqua	SW Coast	204	\$37,098	19,024	204,000	9%	
Emmonak	SW Coast	745	\$106,417	64,717	745,000	9%	AVEC
Newtok	SW Coast	326	\$48,514	27,943	326,000	9%	
Cheforak	SW Coast	419	\$69,999	30,737	419,000	7%	
Kasgluk	SW Coast	527	\$58,303	33,102	527,000	6%	AVEC
Levelock	SW River	84	\$100,000	47,393	84,000	56%	
Napaskiak	SW River	408	\$144,087	69,303	408,000	17%	
Tuntutuliak	SW River	377	\$105,224	58,282	377,000	15%	
MKEC Communities	SW River	429	\$135,889	64,402	429,000	15%	
Kwethluk	SW River	693	\$188,479	101,333	693,000	15%	
Napakriak	SW River	353	\$76,521	42,502	353,000	12%	
Kalskag	SW River	508	\$79,580	43,417	508,000	9%	AVEC
Tuluksak	SW River	461	\$32,999	19,760	461,000	4%	
St Mary's	SW River	688	\$35,631	19,685	688,000	3%	AVEC
Pilot Station	SW River	546	\$8,405	4,696	546,000	1%	AVEC
Goovin	NW Coast	148	\$156,500	68,640	148,000	46%	
Koyuk	NW Coast	329	\$144,128	85,563	329,000	26%	AVEC
Teller	NW Coast	247	\$99,414	59,529	247,000	24%	
Selawik	NW Coast	778	\$300,000	167,598	778,000	22%	AVEC
Unalakleet	NW Coast	757	\$47,867	34,234	757,000	5%	
Gambell	NW Coast	639	\$24,329	15,239	639,000	2%	AVEC
Noorvik	NW Coast	677	\$27,917	14,500	677,000	2%	AVEC
Nikolai	Interior	120	\$94,374	49,040	120,000	41%	
Takotna	Interior	49	\$37,501	19,266	49,000	39%	
McGrath	Interior	407	\$200,000	142,857	407,000	35%	
Kallag	Interior	223	\$90,000	49,314	223,000	22%	AVEC
Koyukuk	Interior	101	\$39,228	19,812	101,000	20%	
Pedro Bay	Southcentral	46	\$31,500	11,455	46,000	25%	
Port Graham	Southcentral	153	\$68,799	34,480	153,000	22%	
Kokhanok	Southcentral	174	\$94,158	38,221	174,000	22%	
Nanwalek	Southcentral	203	\$36,376	18,105	203,000	9%	
Port Herden	Aleutians	100	\$205,927	117,431	100,000	109%	
Chignik	Aleutians	77	\$148,630	65,168	77,000	85%	
Pilot Point	Aleutians	76	\$133,094	62,276	76,000	82%	
Nelson Lagoon	Aleutians	70	\$66,036	50,377	70,000	72%	
Niulskii	Aleutians	41	\$66,444	27,645	41,000	67%	
Perryville	Aleutians	111	\$122,141	60,222	111,000	54%	
Katuk	Kodiak	23	\$74,003	30,513	23,000	159%	
Larsen Bay	Kodiak	107	\$112,811	49,048	107,000	46%	
Old Harbor	Kodiak	229	\$11,881	8,195	229,000	4%	AVEC
Linn Cove	Southeast	32	\$74,000	31,637	32,000	105%	

Among the observations from Table 8 are the following:

- As shown in the second to last column, of the 54 communities listed only 9 show an extent of reliance on BFRLF financing exceeding 50% of the potential financing market. (All 9 are shaded in the second to last column.) Almost all of these – 8 of the 9 – are small communities in the Aleutian, Kodiak, and Southeast regions, suggesting that their relatively large fuel acquisitions have something to do with providing fuel for commercial fishing vessels and may not be accounted for simply by power generation, heat, and transportation within the community.
- It is apparent that the extent of reliance on BFRLF financing in most of the other communities is relatively low. Graph 13 shows the extent of reliance (i.e. the percent of Reference Index consumption financed by the BFRLF) plotted against community population for the 4 primary regions served by the program: SW Coast, SW River, NW Coast, and Interior. This includes the first 40 communities listed in Table 8. For 31 of these 40 communities, the BFRLF percent of Reference Index is below 30%:

GRAPH 13



In most of the communities for which BFRLF loans are issued, it appears that most of the diesel fuel and gasoline that is purchased in bulk is still financed by other means.

It is surprising that, despite all the factors that create variation both in total fuel consumption in these communities and in the amount financed with BFRLF loans, a correlation still appears in Graph 13 that roughly links community population with the extent of reliance on the BFRLF. Among those communities for which BFRLF loans are issued, the smaller communities tend to finance a higher proportion of their requirements through the BFRLF while the larger communities tend to finance a smaller proportion. But the  $R^2$  value for this regression is only .48 – suggesting little significance – and it isn't clear what this weak correlation tells us or what use we can make of it.

Table 9 lists the communities in each region for which no BFRLF loan has been issued during the period FY01 through FY05.<sup>10</sup>

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<sup>10</sup> For several of the communities listed in Table 10, a loan application was received during the last 5 years but was rejected.

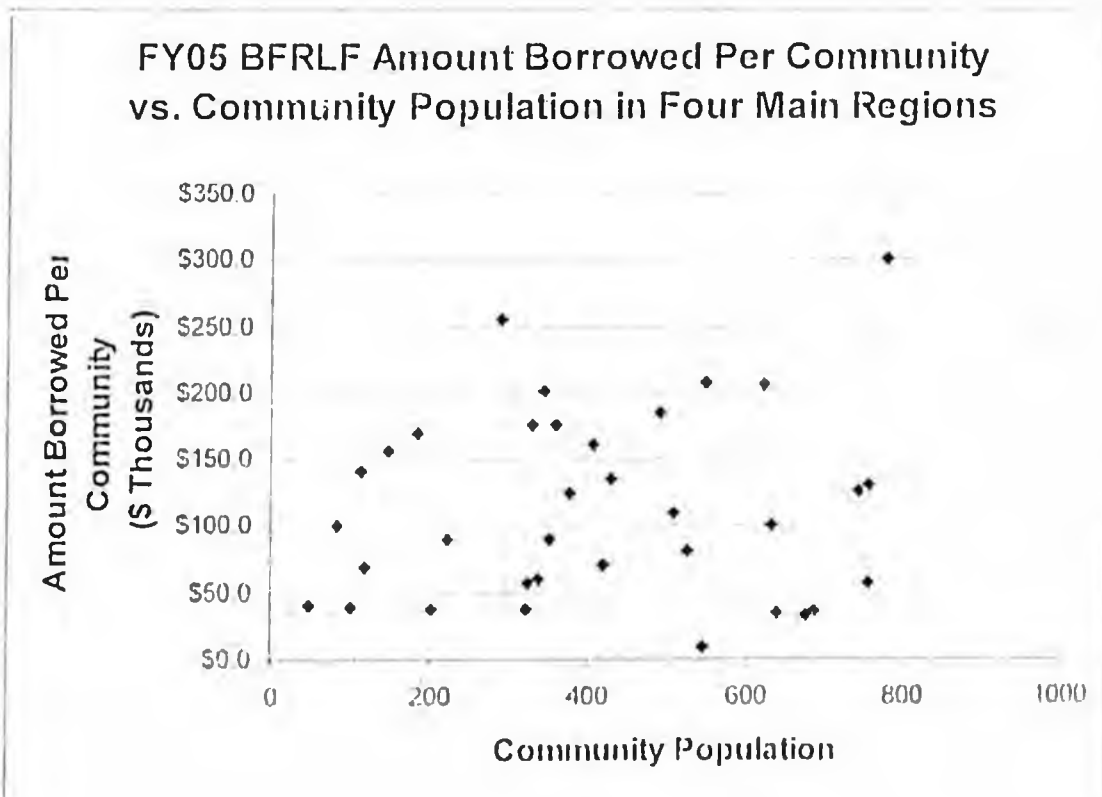
TABLE 9

Community	Region	Pop	Elec Util. AVEC, IPEC, or APC
Naknek	SW Coast	1,155	
Hooper Bay	SW Coast	1,075	AVEC
Togiak	SW Coast	804	AVEC
Kipnuk	SW Coast	644	
Stebbins	SW Coast	580	AVEC
Quinhagak	SW Coast	572	AVEC
St. Paul	SW Coast	533	
Manokotak	SW Coast	404	
Eek	SW Coast	291	AVEC
Goodnews Bay	SW Coast	234	AVEC
Aleknagik	SW Coast	219	
Mokoryuk	SW Coast	204	AVEC
St. George	SW Coast	137	
Egegik	SW Coast	88	
Twin Hills	SW Coast	70	
Igiugig	SW Coast	52	
Platinum	SW Coast	37	
Aniak	SW River	534	
New Stuyahok	SW River	479	AVEC
Marshall	SW River	364	AVEC
Russian Mission	SW River	328	AVEC
Holy Cross	SW River	232	AVEC
Graying	SW River	192	AVEC
Shageluk	SW River	145	AVEC
Anvik	SW River	109	AVEC
Pitkas Point	SW River	105	AVEC
Savoonga	NW Coast	680	AVEC
Shishmaref	NW Coast	589	AVEC
Natak	NW Coast	455	AVEC
Kiana	NW Coast	399	AVEC
St. Michael	NW Coast	390	AVEC
Kivalina	NW Coast	383	AVEC
Elim	NW Coast	339	AVEC
Brevig Mission	NW Coast	307	AVEC
Shaktolik	NW Coast	218	AVEC
White Mountain	NW Coast	214	
Wares	NW Coast	159	AVEC
Deering	NW Coast	129	
Diomedes	NW Coast	128	
Fort Yukon	Interior	581	
Nulato	Interior	345	AVEC
Ambler	Interior	295	AVEC
Huslia	Interior	285	AVEC
Tanana	Interior	278	
Shungnak	Interior	249	AVEC
Ruby	Interior	195	
Venette	Interior	188	
Atlatkaket, Alatna	Interior	162	APC
Arctic Village	Interior	146	
Kobuk	Interior	128	
Central	Interior	120	
Chalkyitsik	Interior	84	
Beaver	Interior	76	
Hughes	Interior	69	
Bottles, Evansville	Interior	58	APC
Birch Creek	Interior	43	
Limo Village	Interior	41	
Fossil Lake	Interior	31	APC
Iliamna, Newhalen, Hondalton	Southcentral	467	
Port Alsworth	Southcentral	110	
Tatitlek	Southcentral	108	
Chenega Bay	Southcentral	90	
Sand Point	Aleutians	919	
King Cove	Aleutians	794	
Akutan	Aleutians	748	
Cold Bay	Aleutians	116	
Atka	Aleutians	102	
Chignik Lagoon	Aleutians	89	
False Pass	Aleutians	79	
Ouzinkie	Kodiak	189	
Akhiok	Kodiak	80	
Haines	Southeast	1,872	APC
Craig	Southeast	1,562	APC
Mellakalla	Southeast	1,370	
Hoonah	Southeast	868	IPEC
Klawock	Southeast	848	APC
Skagway	Southeast	841	APC
Yakutat	Southeast	808	
Kake	Southeast	700	IPEC
Thorne Bay/Kasaan	Southeast	558	APC
Angoon	Southeast	542	IPEC
Gustavus	Southeast	421	
Hydaburg	Southeast	364	APC
Chikot Valley	Southeast	226	IPEC
Coffman Cove	Southeast	151	APC
Hollis	Southeast	150	APC
Pelican	Southeast	118	
Klukwan	Southeast	111	IPEC
Nauyas	Southeast	110	APC
Tenakee Springs	Southeast	98	
Whale Pass	Southeast	62	APC
Point Hope	North Slope	709	
Wainwright	North Slope	543	
Narsarsuaq	North Slope	443	
Kaktovik	North Slope	300	
Anaktuvuk Pass	North Slope	302	
Point Lay	North Slope	256	
Atkasuk	North Slope	231	
Tok	Road System	1,444	APC
Northway	Road System	282	APC
Minto	Road System	229	AVEC
Eagle, Eagle Village	Road System	152	APC
Tedlin	Road System	142	APC
Menasta	Road System	139	APC
Chitna	Road System	131	
Chislochma	Road System	84	APC
Circle	Road System	84	
Manley Hot Springs	Road System	73	
Dot Lake	Road System	52	APC

As expected given the low percentage of potential bulk fuel financing arranged through the BFRLF, there are more communities with no loans from the program over the last 5 years than the number of recent "BFRLF communities." The "non-BFRLF communities" listed in Table 9 are spread throughout the state and throughout the eligible size distribution.

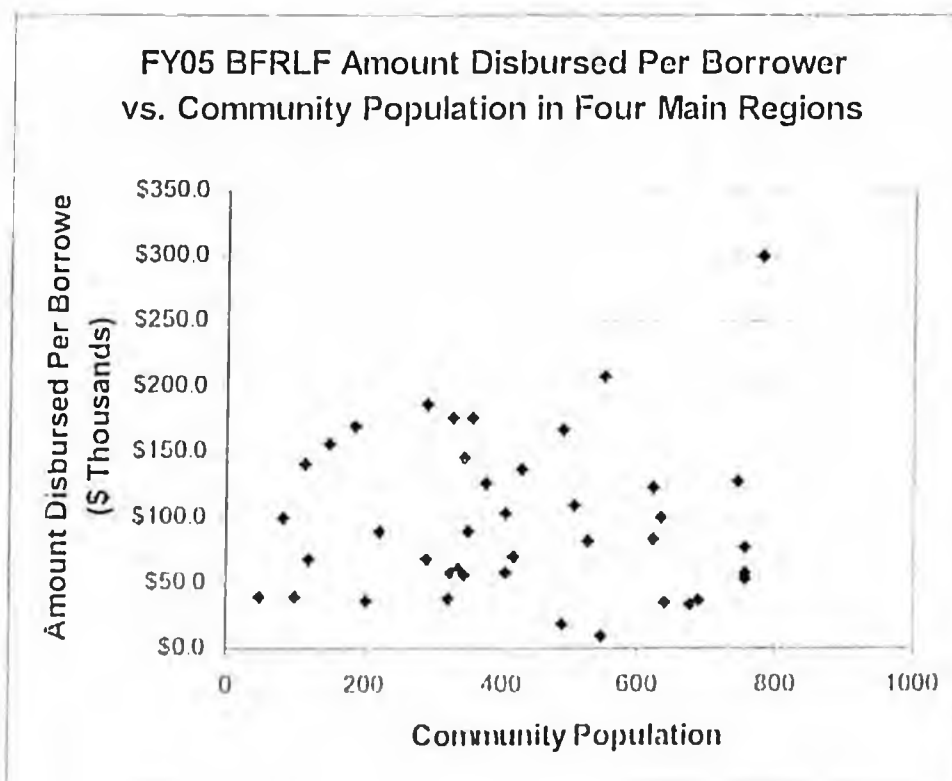
It might be useful to find a relationship between the size of a BFRLF community and the actual amount it tends to borrow from the BFRLF for fuel acquisition. Regardless of the "extent of reliance" discussed briefly above in conjunction with Graph 13, it might help in considering demand projections if it turned out that larger BFRLF loans tend to be associated with larger communities. But the available data do not help much in this regard. Graph 14 below is a scatter diagram showing the amount of BFRLF financing disbursed for each community in FY05 along with the population of that community. Only those communities located in the four main regions (SW Coast, SW River, NW Coast, and Interior) are included to avoid distortions that could be introduced by the anomalous borrowing patterns of small communities in the Aleutians, Kodiak, and Southeast, as discussed earlier:

GRAPH 14



No relationship is apparent in the data on Graph 14. Graph 15 below is the same as Graph 14 except that it shows for FY05 the amount of BFRLF financing per borrower in the four main regions rather than the amount per community:

GRAPH 15



The most striking feature of the Graph 15 scatter diagram is that almost all of the borrowers in the four main regions continue to borrow less than the previous \$200,000 annual limit, although that limit was raised to \$300,000 at the beginning of FY04. There is no obvious explanation for this – as noted before, maybe there is a lag in borrower response to increased BFRLF loan limits and, within the next few years, a significant number of borrowers will break the \$200,000 barrier. Whatever the explanation, it does show once again that there is considerable room for growth in the annual amount loaned per borrower within the current \$300,000 limit.

Before proceeding to the "first stage" demand projection for BFRLF financing, one more factor to consider is whether, and to what extent, the aggregate demand for energy among eligible communities is increasing. While a historical series of data on overall energy consumption in eligible communities is not available, a reasonable proxy measure that is available in the PCE statistical reports is the total kWh of electricity sold in the four main regions. These figures are presented below in Table 10 and in Graph 16:

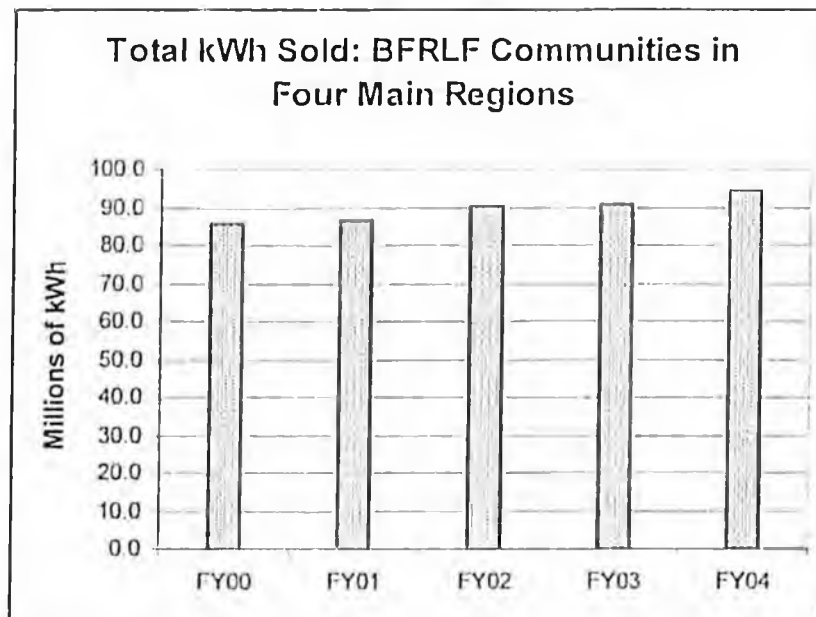
TABLE 10

Electric Utility	Community	Region	Pop	FY04 kWh Sold	FY03 kWh Sold	FY02 kWh Sold	FY01 kWh Sold	FY00 kWh Sold
Akiachak Riv. Community Elec	Akiachak	3	622	1,116,736	1,015,893	1,129,885	1,078,525	1,037,902
Akiak, City of	Akiak	3	340	708,439	772,716	824,700	782,072	774,741
Alaska Power Company	Allakaket, Alatna	7	162	584,450	567,542	539,628	520,458	303,174
Alaska Power Company	Bettles, Evansville	7	58	624,810	657,528	698,460	701,973	704,916
Alaska Power Company	Healy Lake	7	31	131,736	126,425	134,720	106,916	175,109
Alaska Village Electric Coop	All communities		21,295	61,978,966	59,766,798	58,681,907	55,302,709	54,027,637
Aniak Light & Power Co	Aniak	6	539	2,086,549	2,111,744	2,159,233	2,218,156	2,275,322
Atmautluak Joint Utilities	Atmautluak	3	291	579,634	571,485	593,011	541,659	560,751
Diomedea Joint Utilities	Diomedea	8	128	460,434	487,979	478,915	523,971	483,428
Egegik Light and Power	Egegik	3	88	655,673	661,952	685,994	715,985	762,971
Ekwook Electric	Ekwook	3	114	400,039	384,435	434,812	439,533	429,829
Gwitchyaa Zhee Utilities	Fort Yukon	7	581	2,527,978	2,143,535	2,276,006	2,374,099	2,566,927
Hughes Power & Light	Hughes	7	69	214,699	201,088	193,777	180,242	190,267
Kipnuk Light Plant	Kipnuk	3	644	1,605,724	1,591,192	1,568,279	1,471,057	1,469,518
Koliganek Village Council	Koliganek	3	186	427,645	393,207	466,141	380,057	549,553
Kotlik Electric Services	Kotlik	3	633	1,516,908	1,609,045	1,512,612	1,302,449	1,341,712
Levelock Electric Cooperative	Levelock	6	84	333,015	356,127	414,209	478,357	432,732
Limo Village Electric Utility	Limo Village	7	11	76,487	67,591	75,396	69,503	50,897
Manokotak Power Company	Manokotak	3	404	1,048,807	1,126,900	871,806	357,291	902,993
McGrath Light & Power	McGrath	7	407	2,578,957	2,627,495	2,775,721	2,780,409	2,778,443
MKEC	All communities	6	98	803,140	816,629	838,228	354,182	854,293
Naterkaq Light Plant	Chefornak	3	419	649,723	646,571	653,505	637,249	512,076
Nikolai Light & Power	Nikolai	7	120	377,416	374,477	401,203	328,645	339,699
Nunam Iqua Electric Company	Nunam Iqua	3	204	644,125	658,174	602,336	505,257	432,030
Platinum, City of	Platinum	3	37	139,530	121,941	138,703	127,785	118,490
Puvuruaq Power Company	Kongiganak	3	359	895,416	837,474	804,788	742,337	657,193
St Paul Municipal Elec. Util	St Paul	3	533	4,511,557	3,248,237	3,512,523	3,450,095	3,651,224
Takotna Community Assoc. Utilities	Takotna	7	49	225,073	211,169	233,343	264,736	229,327
Tanana Power Company	Tanana	7	278	1,203,547	1,169,123	1,187,756	1,266,137	1,410,969
Tuluksak Traditional Power Utility	Tuluksak	6	451	521,693	411,272	423,923	387,797	384,020
Unalakleet Valley Elec. Coop	Unalakleet	8	757	3,767,770	3,741,700	3,852,485	3,844,894	4,074,649
Unqsraq Power Company	Newtok	3	326	367,080	367,427	349,775	345,846	338,975
White Mountain Utilities	White Mountain	8	214	759,726	693,376	625,223	716,867	680,847
TOTALS				94,604,438	90,538,202	90,139,069	86,217,248	85,502,609

Table 10 Notes: Only utilities with all 12 months reported for all 5 years are included. Nalnek excluded due to disproportionately high loads and variations from large commercial / institutional customers. Only BFRLE eligible communities included from four main regions: SW Coast, SW River, NW Coast, and Interior. As noted earlier, the FY05 PCE statistical report is not available as of this writing.

The total kWh's sold for these utilities for FY00 through FY04 are plotted below in Graph 16:

GRAPH 16



Within these total figures are many individual ups and downs, and many explanatory factors including but not limited to changes in population, infrastructure, and weather. Overall, however, the picture is one of gradual growth in aggregate kWh sold, which likely reflects gradual growth in aggregate energy demand and fuel demand. The average annual growth rate in kWh sold over this period for the utilities included in Table 10 is approximately 2.5%.

Projected BFRLF Demand Assuming No Change in Program

Following is a list of factors to take into account in forecasting demand for BFRLF loans over the next 10 years:

- BFRLF loan disbursements have increased from \$2.5 million in FY03, to \$3.5 million in FY04, to \$5.3 million in FY05. Contributing factors include, but are not necessarily limited to, the increase in fuel price, increase in the number of borrowers, increase in gallons financed per borrower, and increase in the average amount loaned per borrower.
- Fuel prices increased sharply from FY04 to FY05. The Alaska Department of Revenue and the U.S. Department of Energy have both recently published their expectation that oil prices will come back down over the next 3 to 5 years to roughly FY03 levels. However, since oil price forecasts have been notoriously unreliable over the past few decades, it makes sense to consider future BFRLF demand under an alternative oil price scenario as well.

For this study, the second scenario will be based on the assumption that oil prices charged to BFRLF borrowers in FY06 will be 20% higher than the weighted average electric utility prices reported to the PCE program for FY05<sup>17</sup>, and will remain at that FY06 level in nominal terms for the rest of the projection period (which does imply a gradual price reduction in "real" inflation-adjusted terms).

- The number of BFRLF borrowers has increased from 37 in FY01 to 53 in FY05. This is an average annual increase of 9.5% per year (with nearly all of it occurring in the last 2 years).
- The average annual amount loaned to each BFRLF borrower has increased from \$55.2 thousand in FY01 to \$99.7 thousand in FY05. This is an average annual increase of roughly 16%.
- Average gallons financed per borrower has increased from 37.3 thousand in FY01 to 50.7 thousand in FY05. This is an average annual increase of about 8%.
- 9 of the 12 "first time" borrowers from the BFRLF in FY04 came back for additional loans in FY05. This suggests a tendency to stay with the program once an initial loan is issued and the borrower understands how the program works and what needs to be done to obtain the loan. It also suggests that the program is workable and successful in the judgment of its borrowers, and this is likely to create a certain amount of long-term program growth as that experience is communicated to others.
- There was a lag of about 2 years from the time that the BFRLF limit was raised from \$100,000 to \$200,000 before there was a significant increase in the number of loans exceeding \$100,000. The \$300,000 annual limit has now been in place for 2 years but there are still few borrowers seeking over \$200,000 per year. It is unclear why this is so but it does indicate that there is still significant room for growth in loan size under the existing \$300,000 cap.
- The BFRLF finances only a small percentage of its potential market among bulk fuel purchasers in small communities. Most borrowers finance less than half of their community's fuel requirements from the BFRLF, and there are more "non-borrower communities" (i.e. communities that are eligible to use the BFRLF but have not done so in at least the last 5 years) than there are "borrower communities."

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<sup>17</sup> The population weighted average price reported to date for the PCE program in FY05 is \$2.01 per gallon, which is well below the prices now faced by many BFRLF borrowers. This reflects the fact that larger communities (which are weighted more heavily) typically face lower fuel costs, and the fact that many of the most recent prices reported to PCE at the time of this writing were associated with fall 2004 deliveries, after which prices continued to increase sharply.

- Among eligible communities overall, there has been gradual aggregate growth in energy demand (as evidenced by the gradual increase in electricity sold) between FY00 and FY04. The annual rate of increase in kWh sold over this period was about 2.5%.

Other relevant factors could include the bulk fuel financing alternatives that are available to bulk fuel purchasers in eligible communities. For example, high oil prices tend to create additional demand for BFRLF financing due to the increased cost of fuel supplies. On the other hand, high oil prices create less budget-cutting pressure on the State and may be correlated with appropriations for local governments (such as the "small municipality energy assistance" program enacted to help pay for fuel during FY05). The availability of State grant funds makes it easier for communities to pay cash up front for their fuel supplies, or at least to reduce the amount of debt financing they need to acquire those supplies.

While these financing alternatives may evolve, there is no current indication that they will change quickly or significantly in the foreseeable future. As a result they are unlikely to have a major effect on the BFRLF demand projections. A discussion of these financing alternatives will be taken up in the next section.

Below are two BFRLF demand projections that assume no program changes. The key difference between the two is the assumption on future oil prices, which in turn influences certain other assumptions. Each demand projection is provided at 3 year intervals (i.e. FY08, FY11, and FY14).

#### Demand Projection #1:

##### Assumptions:

- i. By FY08, diesel fuel prices will return to FY02 levels in nominal terms and will then increase at an assumed inflation rate of 4% per year for the duration of the forecast period. The weighted average delivered diesel price in FY02 among BFRLF eligible communities was \$1.45 per gallon (as shown in Graph 7 derived from PCE utility data).
- ii. The number of BFRLF borrowers will remain constant through FY08 at 53 but will then resume growth at a rate of 3 borrowers per year. This is based on the assumption that the rapid growth in borrowers over the last 2 years was strongly related to the sharp increase in fuel price, with the increasing cost of fuel supplies having greater influence on BFRLF borrowing than the availability of State grant funds. Declining fuel prices would eliminate this upward pressure on the number of borrowers, but countervailing factors would tend to keep the number from falling – factors that would include the

declining availability of State grant funds as well as the long-term growth of energy demand and the large pool of potential borrowers into which the program can expand.

Once the assumed fuel price levels out (i.e. in FY08), the resumption of gradual growth in the number of borrowers is based on the continuation of long-term upward pressures including long-term growth in energy demand, reduced availability of State grant funds, and growing familiarity with the BFRLF program among potential borrowers.

- iii. The average number of gallons financed per borrower will increase throughout the forecast period. As noted above, the growth in gallons financed per borrower has averaged 8% per year over the last 5 years while the annual growth in electricity demand has been closer to 2.5%. This projection assumes a continuing 5% increase in gallons financed per borrower from the FY05 level.

These assumptions produce the following outlook:

FY08: Delivered fuel price = \$1.45 per gallon  
Number of borrowers = 53  
Ave. gallons per borrower = 58,692

Amount borrowed from BFRLF = \$4.5 million

FY11: Delivered fuel price = \$1.63  
Number of borrowers = 62  
Ave. gallons per borrower = 67,943

Amount borrowed from BFRLF = \$6.9 million

FY14: Delivered fuel price = \$1.83  
Number of borrowers = 71  
Ave. gallons per borrower = 78,653

Amount borrowed from BFRLF = \$10.2 million

#### Demand Projection #2

Assumptions:

- i. Delivered diesel fuel prices in FY06 will be 20% higher than the weighted average price from PCE records for FY05, and will then remain constant at the assumed FY06 level in nominal dollars. Specifically, the weighted average diesel price will increase from

\$2.01 to \$2.41 per gallon, and prices stay at \$2.41 throughout the forecast period.

- ii. Continuing high fuel prices will bring continuing increases in the number of BFRLF borrowers. There has been a net increase of 14 borrowers over the last 2 years, or an average of 7 per year. The assumption for this scenario is that the number of borrowers will increase at 4 per year from the FY05 level of 53, beginning in FY06.
- iii. Overall energy demand will increase more slowly with high fuel prices, which would tend to depress the total volume requirements of individual bulk fuel purchasers. However, continuing high prices might also tend to alter the mix of BFRLF borrowers by bringing more purchasers to the program who have higher volume requirements than the average among the previous mix. In other words, high prices might act as a spur to bring more borrowers to the program seeking loans in the \$200,000 - \$300,000 range.

Given these conflicting pressures and possibilities, it is assumed in this scenario that the average number of gallons per borrower will increase at the same rate assumed in the prior scenario - 5% per year.

These assumptions produce the following outlook:

FY08: Delivered fuel price = \$2.41 per gallon  
Number of borrowers = 65  
Ave. gallons per borrower = 58,692

Amount borrowed from BFRLF = \$9.2 million

FY11 Delivered fuel price = \$2.41  
Number of borrowers = 77  
Ave. gallons per borrower = 67,943

Amount borrowed from BFRLF = \$12.6 million

FY14 Delivered fuel price = \$2.41  
Number of borrowers = 89  
Ave. gallons per borrower = 78,653

Amount borrowed from BFRLF = \$16.9 million

The existing annual limit of \$300,000 per borrower is not considered to be an obstacle to the realization of either of these scenarios. Both assume a gradual increase in average gallons per borrower that, at least for the most

part, should be accommodated within the current \$300,000 limit. Neither scenario assumes or requires a radical increase in the size of individual loans.

The 25 million gallons estimated earlier as the potential size of the BFRLF market under current law is not approached in either scenario. In the highest volume year – FY14 in projection #2 – the total volume financed with BFRLF loans is 7.0 million gallons.

To summarize, the projected BFRLF demand under the 2 scenarios described above are:

	(Millions of Dollars)		
	<u>FY08</u>	<u>FY11</u>	<u>FY14</u>
Scenario #1 (declining fuel prices)	\$4.5	\$6.9	\$10.2
Scenario #2 (current fuel prices)	9.2	12.6	16.9

Additional capitalization of the BFRLF would be needed to meet loan demand under either scenario given that the current net assets of the Fund are approximately \$8.2 million.

Despite all of the data and speculations covered to this point, it should be remembered that AEA actually logged in \$9.0 million of BFRLF loan applications during FY05. Although only \$5.3 million in actual loans were disbursed, it is worth revisiting the history of requests presented in Table 2 and Graph 3, and asking whether something big is being missed by all of this. Again, the history of BFRLF loan applications shows the following for the last 4 fiscal years:

<u>Fiscal Year</u>	<u>BFRLF Requests</u>
2002	\$2.6 million
2003	4.4
2004	6.1
2005	9.0

A program manager or other interested party clinging to the forecasts shown above for scenarios #1 and #2 might understandably be nervous when looking at that history of requests. Perhaps the whole exercise errs significantly on the low side. On the other hand, given no changes in the program it seems reasonable to think that:

- If fuel prices come down by roughly 28% over the next 3 years (from \$2.01 to \$1.45 per gallon), BFRLF demand will decline by roughly 15% (from \$5.3 to \$4.5 million).

- If fuel prices stay roughly at today's level in nominal terms, BFRLF demand (i.e. actual loan disbursements) over the next 3 years will increase by nearly 75% to \$9.2 million.

In the interest of caution and concern over unknowns, the higher scenario might be the safer outlook to use for planning purposes. Several factors contribute to this judgment:

- In its long-term oil price forecast, the Alaska Department of Revenue might prefer to be wrong (if it must be wrong) on the low side under the philosophy that it is better to forecast lower prices and revenues and then be pleasantly surprised than to forecast higher revenues and come up short. Maybe this affects the ADOR forecast and maybe not.

In contrast, program management for the BFRLF might prefer to be wrong on the high side under the philosophy that it is better to prepare for a higher volume of loans and be able to satisfy loan demand with a margin to spare than to plan on significant oil price reductions and soon be required to turn down loan applicants due to insufficient funds in the BFRLF.

- There are some Alaska-specific factors that may contribute to upward pressure on delivered diesel prices in rural Alaska that are not captured in the world oil price outlook. One such factor is the upcoming federal requirement for "ultra-low sulfur" diesel fuel for use in communities on the road system. Alaska refineries are planning investments in the hundreds of millions in order to produce this fuel<sup>16</sup> and will need to recover their investment. It is not clear if the refineries will continue to also produce their current grade of diesel fuel, in part due to the cost of maintaining separate storage facilities and distribution infrastructure. If, within the next several years, rural Alaska is faced with no practical option but to purchase the new diesel fuel, it is likely to add 10-15 cents per gallon to the price.
- Another Alaska-specific factor is the gradual retirement of "single skin" barge transportation vessels and their replacement with new double wall vessels to meet federal requirements.<sup>17</sup> The amount this investment will add to delivered prices is uncertain but the upward pressure it will exert is not.

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<sup>16</sup> Shaen Tarter and Justin Charon, Yukon Fuel Company. Personal communication with Emerman Consulting, July 2005.

<sup>17</sup> Ibid.

## SECTION 4

### BULK FUEL FINANCING ALTERNATIVES

Although some specific information is available from organizations and institutions involved with bulk fuel financing in rural Alaska communities, sufficient information was not available overall to estimate what portion of the total market is financed by each alternative. Listed below are the various alternatives that were reviewed or noted during the conduct of this study, and a brief discussion of each:

- Cash in advance or on delivery. There are any number of ways that bulk fuel purchasers can put aside the cash reserves needed to pay for their fuel deliveries in full. Aside from generating sufficient revenue from sales to create the necessary reserves, government grants to local governments can sometimes be used including State grants appropriated for this purpose (such as the "small municipal energy assistance program" enacted to help pay for fuel in FY05), discretionary State grants like municipal revenue sharing (although such funds have not recently been appropriated), and discretionary federal grants such as PILT funds (payment in lieu of taxes).

Purchasers who are able to pay the fuel supplier in full in advance or upon delivery are likely to obtain the best price that still covers the supplier's cost of fuel acquisition and delivery. Higher prices are associated with later payments or payment uncertainty, as they are with any factor that creates higher costs for the supplier.

- Fuel distributors extend a limited amount of credit to reliable customers with whom they have had a sufficiently long and good relationship.
- Similarly, commercial banks extend credit to bulk fuel purchasers who meet the stringent credit requirements typically associated with a commercial lender.
- The Bureau of Indian Affairs, through its "Alaska Resupply" program, purchases fuel and arranges for its delivery to rural Alaska purchasers, including but not limited to village corporations and local governments. Key aspects of the current program are as follows:<sup>20</sup>
  - i. The BIA accepts orders from bulk fuel purchasers and books the fuel for delivery by one of the private bulk fuel distributors operating in rural Alaska.

<sup>20</sup> All information on the BIA program was obtained from BIA Alaska Resupply staff in Seattle. Personal communication with Emerman Consulting, July 2005.

- ii. Upon delivery, the BIA pays the fuel distributor for the fuel from its own account. At the same time, the BIA sends an invoice for payment to the recipient of the fuel in rural Alaska.
- iii. The invoice for payment includes the cost of the fuel already paid for by the BIA plus an administrative fee of 10 cents per gallon. The recipient has 90 days without interest to pay the full amount of the invoice. To any balance that remains unpaid after 90 days, the BIA adds a 6% charge. All amounts due must be paid within 180 days. If any amount remains unpaid after 180 days, the file is sent to "Treasury" for collection, and Treasury adds a large fee to the unpaid balance – on the order of 30-40%.
- iv. Purchasers whose accounts are sent to collections typically will not be permitted to order their fuel through the BIA program in the future.
- v. The BIA program in recent years has typically served between 15 and 30 communities. The aggregate amount of fuel supplied through the program has averaged about 800,000 gallons per year. (For perspective, assuming \$2.00 per gallon, this implies a program on the order of \$1.6 million per year.)
- vi. The BIA received a federal appropriation for this program in 1992 but since then has not received additional appropriations for this purpose. Their program therefore operates like a revolving fund and the administrative fee is necessary to maintain program staff.
- vii. Their fund is large enough to allow them to serve some number of additional customers – they have not had to turn down any applicant due to insufficient money in the BIA account. BIA staff believes that more customers are not attracted to the program because, at least for many of them, the fuel price through the BIA program is no lower than they could otherwise obtain, and the primary reason for that is the 10 cent per gallon administrative fee.

• The Alaska Native Industries Cooperative Association (ANICA), with its corporate headquarters in Seattle, was briefly discussed in the 2001 "Screening Report on Alaska Rural Energy Plan." As stated in Section 6 below, ANICA serves about 25 rural communities and purchases about 2 to 3 million gallons of fuel per year on behalf of retail establishments operated by village corporations or village tribal councils.

The Bulk Fuel Bridge Loan<sup>21</sup> program was created last year to provide bulk fuel financing for a number of communities that were ineligible for a loan from the BFRLF due to credit problems but nonetheless needed to acquire fuel. The State and the Denali Commission acted to establish a "last chance program" to assist these communities. An initial grant of \$0.5 million was provided by the Denali Commission and AVEC was selected as the program manager. AVEC, in turn, opted to subcontract program management to Rural Alaska Fuel Services, an organization that had recently been established to assist in the operation and maintenance of new tank farms constructed with Denali Commission funds.

The basic structure of the Bridge Loan program is as follows:

- i. To be eligible, any borrower must first apply to the BFRLF and be rejected. The program is intended specifically for these communities.
- ii. If a Bridge Loan is approved, it carries zero interest and must be repaid in 9 months. The community can receive a Bridge Loan for no more than 3 consecutive years, by which time it is expected to have resolved whatever credit problems led to its BFRLF rejection in the first place.
- iii. The Denali Commission has adopted the policy that it will provide no further assistance to a community that defaults on the terms of its Bridge Loan.

The State has contributed an additional \$350,000 to the program, bringing its total assets to about \$850,000. All of these funds were used in issuing Bridge Loans to 12 communities. At this writing, no additional funds are available either to provide loans to additional communities or to finance higher fuel costs for these same communities in their second year of borrowing.

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<sup>21</sup> All information in this subsection regarding the Bulk Fuel Bridge Loan program was obtained from Del Conrad - Rural Alaska Fuel Services. Personal communication with Emerman Consulting. July 2005.

## SECTION 5

### CREATING BULK FUEL PURCHASING COOPERATIVES AND PROJECTED IMPACT ON FUEL PRICE AND BFRLF DEMAND

There is an extensive history of efforts to consolidate bulk fuel purchasing in rural Alaska with the goal of achieving fuel price savings. The earliest example cited here is an impressive handbook on cooperative fuel purchasing published by the former Department of Community and Regional Affairs in 1989, and appended to this study as Attachment 3. The handbook details the various ways that rural bulk fuel purchasers can consolidate their efforts and includes step by step instructions, advice, and many sample forms, bids, contracts, and other relevant documents. If anything it was perhaps too thorough but it was clearly directed at a rural community audience and was widely distributed.

Subsequent efforts to establish formal bulk fuel purchasing cooperatives have been unsuccessful although some alternative consolidation strategies have fared better. A "formal bulk fuel purchasing cooperative" refers to an entity organized under AS 10.15 that serves as the single agent for all its members in issuing requests for bids, contracting with winning bidders, and issuing payment to fuel suppliers. The cooperative itself has one or more employees, incurs administrative costs as well as the costs of fuel procurement, and charges all its members the amounts necessary to cover these costs. While the fuel supplier still delivers fuel to the same multiple locations for each of the cooperative's members, it deals only with the cooperative management on matters pertaining to the fuel supply contract and payment, thereby simplifying the supplier's administrative task and reducing the supplier's cost in that respect.

The success of the cooperative depends not only on the skills of its management and members, but even more on the timely and full payment to the cooperative by all of its members of their respective cost shares. The goal, of course, is to reduce the price of fuel to the members by reducing the supplier's administrative cost as noted above, and by requesting bids for a larger overall volume of fuel, which could result in savings by achieving volume discounts and/or by attracting greater competitive interest among potential suppliers. To be of benefit to the members, these savings must exceed whatever fees are charged by the cooperative to cover its own administrative cost, and also compensate for whatever cost might be associated with the reduction or loss of direct communication with and access to the suppliers.

The details of what happened to each of the various attempts to establish formal bulk fuel purchasing cooperatives have not been researched for this study but a rough sketch of numerous efforts can be presented.

In the early 1990s the State appropriated funds to AEA to issue as grants to help establish bulk fuel cooperatives. Grants and, in some cases, AEA staff assistance were provided to six grantees:

- Council of Athabascan Tribal Governments
- Coastal Yukon Mayors Association
- Western Alaska Bulk Fuel Cooperative
- Rural Alaska Power Association
- Kodiak Island Village Utility Cooperative
- Kuskokwim Delta Regional Utility Association

With the exception of the Western Alaska Bulk Fuel Cooperative, none of these efforts resulted in the establishment of a lasting bulk fuel purchasing cooperative although some efforts apparently got off the ground for a while before activity fell off. The Western Alaska Bulk Fuel Cooperative evolved into the informal Western Alaska Fuel Group composed, as of 2001, of the electric utilities in Kotzebue, Nome, Unalakleet, Dillingham, Naknek, Iliamna, and Igiugig. A single bid request is issued for the combined requirements of these utilities but no utility is bound to purchase fuel from the winning bidder, each utility negotiates separately for its own fuel supply contract, and each pays the supplier directly for its own fuel delivery.

Another effort during the 1990s to establish a formal bulk fuel consolidation strategy was made by Calista Corporation, which established a for-profit subsidiary called Nunat Uquutiit, Inc. (NUI). The concept for NUI was to build and operate tank farms in a number of Calista region communities, to procure fuel for all of these facilities at reduced prices by issuing a consolidated bid request, and to sell the fuel at prices that would cover their costs of tank farm construction, operation, and fuel acquisition. It soon became apparent that NUI would not be able to charge prices high enough to recover these costs and so Calista Corporation, not wishing to subsidize NUI from other corporate funds, eliminated its ties to NUI which then evolved into "NUCI" (Nunat Uquutiit Cooperative, Inc.). Among the things that NUCI tried to do was to serve as a bulk fuel purchasing consolidator for its members. For whatever reasons, NUCI failed to survive.

Meanwhile, Calista Corporation established Western Alaska Village Enterprises (WAVE), of which WAVE Fuels was a component. The purpose of WAVE Fuels was to acquire fuel at a discount for many retailers in Calista region villages – its acquisitions were estimated at about 5 million gallons per year – which would then allow the retailers to pass along the savings to its customers. Again, for whatever reasons, WAVE Fuels did not survive.

This backdrop of failed efforts does not support much optimism about the prospects for new, formal structures to consolidate fuel purchasing. Perhaps the administrative costs and associated fees that such organizations must charge tend to offset whatever cost savings they might achieve. Or maybe they are

typically established with insufficient reserves, possibly due to reluctance on the part of its members to pay substantial start-up fees, and therefore cannot survive if one or more of their members fails to pay its full cost share on a timely basis. (Concern about this possibility could certainly factor in to the reluctance of a prospective member to pay a substantial start-up fee.) Maybe logistical hurdles and personnel turnover make it especially difficult for isolated villages to establish and maintain formal contractual relationships over an extended period of years.

For reasons like these and because of the history cited above, it seems much more likely for informal consolidation to be achieved and to survive since it places a lower administrative and financial burden on its members and also places little or no financial risk on the coordinating entity. This is the approach taken during the past year by the Northwest Arctic Borough (NWAB). A brief discussion of the NWAB fuel purchasing consolidation program is presented below:<sup>22</sup>

- The NWAB has established a loosely knit consortium of independent bulk fuel purchasers within the Borough. At the present time, about 10 purchasers located in 5 villages participate in the consortium, including certain local governments, fuel retailers, and one "stand-alone" electric utility. The consortium does not include AVEC or the school districts, which are currently committed to multi-year fuel purchasing arrangements. Although AVEC is likely to remain outside the consortium in future years, the NWAB believes it would be both possible and helpful to all concerned if the school districts were to participate in the consortium after its multi-year commitments have expired.
- A key requirement of the NWAB is that no Borough funds be expended or placed at risk as a result of these coordination efforts. Consequently, the Borough does not intend to set up a formal structure under which it could be obligated to pay for all or part of a participant's fuel, or pay for administrative costs out of its general revenues, or be perceived as a possible financial backstop by any participant.
- The basic operating plan is as follows:
  - i. For all participants who have documented secure financing for their bulk fuel orders, the Borough advertises a single bid request for their combined volume.
  - ii. Upon receipt of bids and selection of a supplier, the Borough executes separate purchase agreements with each participant. Once these agreements are executed, the Borough issues a purchase order to the supplier.

<sup>22</sup> All information and views on the NWAB program presented in this subsection were provided by Tom Bolin - Northwest Arctic Borough - Personal communication with Emerman Consulting - July 2005.

- iii. Upon delivery of fuel to the participants, the supplier issues a single invoice to the Borough. Upon receipt of the supplier's invoice, the Borough sends separate invoices to each participant. Once the Borough receives payment from the participants, the Borough then pays the supplier.
- iv. Even as an informal consortium, the Borough is incurring administrative costs to perform its coordinating role. As a result, the Borough now intends to add a 10 cent per gallon administrative fee to all fuel purchased through the consortium mechanism. For illustration, if the delivered fuel cost to a participant is currently \$2.50 per gallon, this administrative fee would add 4.0% to the price.

There are several reasons to think that the consortium arrangement will result in lower fuel prices to its participants:

- i. Although the supplier must still incur all the same costs to physically deliver the fuel to each participant, its administrative costs should be reduced because it now invoices and receives payment from a single entity – the Borough – as opposed to 10 different entities.
- ii. Because the Borough has ensured through its efforts that each participant has secure financing sufficient to make full and timely payment to the Borough, the supplier can be confident it will receive full and timely payment for the combined order from the Borough.
- iii. Whatever volume discounts are extended by the supplier for combined orders can now be realized, a subject discussed in greater detail later in this section.

Among these possible sources of fuel price savings, the Borough representative believes that the credit enhancement provided by the Borough's efforts to ensure secure financing is the biggest factor. The suppliers place significant value on the assurance that they will be paid on time and in full. As the combined delivery volumes climb into the hundreds of thousands of gallons, further volume discounts are not likely to be significant.

One important method the Borough is trying to use to guarantee payment is to steer participants into using AEA's BFRLF. If AEA approves a BFRLF loan for a participant (and if the participant pays the remaining 10% of its fuel cost directly to the Borough), timely payment for that participant's fuel delivery can be assured. With regard to this strategy:

- i. Any participant that previously financed its fuel purchases through credit arrangements with the supplier is likely to save additional money due to the relatively low interest rates charged by the BFRLF compared with supplier rates.
- ii. This approach to assuring timely payment to the Borough – essentially using AEA to screen the participant's credit and to accept whatever credit risk is associated with approved loans – has the potential to increase the demand for BFRLF loans. Since this is the first year of the NWAB consortium, it is too early to predict how significant this may turn out to be.
- iii. Participants in a financial position to pay for their fuel from cash reserves presumably can document that ability and are not being induced to borrow from the BFRLF instead. However, the NWAB program is serving to better familiarize bulk fuel purchasers in that region with the BFRLF and that alone may result in higher demand for BFRLF loans. The Borough plans for its consortium to include additional members in future years.

Regarding proposals to increase the borrower limit for BFRLF loans, the NWAB does not plan to create a formal cooperative structure under AS 10.15 and therefore would not be affected if borrower limits for cooperatives were raised. However, the Borough representative drew attention to the fact that some of its participants have fuel requirements exceeding \$300,000 and could take advantage of higher limits for individual borrowers.

Overall, a long term goal shared by the Borough is to foster greater financial solvency and financial self-reliance among its member villages. This will require charging prices for goods (such as fuel) sufficient not only to cover their full costs but also to build up cash reserves. As a matter of long term policy, allowing greater reliance on debt over the long term might not be the best way to improve a member's financial position.

Given these considerations, the Borough representative suggested that a useful alternative to a permanent increase in the borrower limit might be to index the borrower limit to fuel prices. This could help the larger borrowers cope with short term spikes in fuel prices but, since the limit would come down when the prices subside, it might avoid the pitfall of higher debt reliance over the long term.

#### Volume Discounts

The NWAB experience suggests that assurance of full and timely payment may be a bigger factor than volume discounts in the pursuit of favorable fuel prices.

But volume discounts are typically the main reason put forward for efforts to consolidate fuel purchasing and the subject warrants further consideration. Higher volumes may result in lower unit prices not only because suppliers often seek to expand market share but also because a supplier's fixed costs can be spread over more units of product. The generally held view is not just that volume discounts are available from suppliers but that these discounts can be achieved even by informal collectives such as the NWAB consortium described above.

A discussion of the potential savings from consolidation of fuel purchases appears in the "Screening Report for Alaska Rural Energy Plan" (April 2001), prepared by Northern Economics, Inc. for the Alaska Industrial Development and Export Authority. A substantial excerpt of this discussion is reproduced in Attachment 2 of this study. Among its conclusions are the following:

- "Refineries in Alaska do not offer volume discounts to buyers... Fuel distributors are the entities that offer volume discounts to purchasers in rural Alaska."
- Based on discussions with Crowley Maritime, Northern Economics presented the following table displaying a "typical discount program in Western Alaska:"

Typical Discount Program for Fuel Sales in Western Alaska

<u>Volume Purchased (No. of Gallons)</u>	<u>Approximate Discount (Percent Reduction from Price for Minimum Volume)</u>
(Minimum Volume) 5,000	Not Applicable
20,000	5
50,000	10
100,000	15
More than 100,000	Negotiable, but may be additional 2 to 4 percent

- "Administrative costs charged by fuel consolidators, or membership fees for cooperatives, can reduce potential savings... A WAVE member purchasing 5,000 gallons could save about 7 to 9 cents per gallon over the cost of purchasing directly from another supplier, if membership fees are ignored. However, a customer that purchases more than 100,000 gallons may pay more if it purchases fuel through WAVE because the administrative charge may be greater than the potential savings that WAVE could provide, compared to purchasing from another supplier."
- "Communities in much of Interior and Southeast Alaska do not belong to organizations that consolidate fuel purchases. It may be that many communities in these regions could benefit from consolidated fuel purchases."

It is less costly to a supplier to deliver 100,000 gallons to one location than to deliver 20,000 gallons to five separate (and comparable) locations. Therefore, the customer who arranges for 100,000 gallons delivered to one location can expect to pay a lower price than the five customers at the five separate and comparable locations (all else being equal, such as payment terms). Would the five customers obtain a price break comparable to the 100,000 gallon customer merely by pooling their orders, although the supplier's cost to provide fuel to the five villages is unaffected? Not everyone would agree<sup>23</sup>.

Management policies of the suppliers are subject to change. If management is oriented towards increasing market share and is willing to reduce or eliminate its margins (or even take a loss) in pursuing that goal, then volume discounts for multiple purchasers might be offered even if the supplier's cost is unaffected by the pooling arrangement. On the other hand, if margins are already slim and the supplier has more profitable avenues for investment, management may be unwilling to cut margins further in hope of expanding into the less profitable market. Looking at it this way, volume discounts disconnected from supplier costs might be available sometimes from some suppliers and not available at other times – not something to count on. Further, there are many factors that influence the delivered price of fuel, not all of them apparent to the purchaser. Sometimes a purchaser may attribute favorable prices to volume discounts obtained through consolidation of fuel purchases, when in fact a lower-than-expected price may be due to cost factors known only to the supplier.

But the task remains for this study to estimate the impact of increased bulk fuel purchasing consolidation on the cost of fuel and on demand for loans from the BFRLF. The following illustration might help:

- Assume that 3 new bulk fuel purchasing "cooperatives" are formed, all of the informal kind similar to the Western Alaska Fuel Group and the NWAB consortium.
- Assume that the participants are relatively small purchasers, each of which averages about 50,000 gallons per year. Examples of bulk fuel purchasers among electric utilities whose annual requirement is about 50,000 gallons include the following (from the FY04 PCE Statistical Report):

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<sup>23</sup> The suggestions that volume discounts are widely misinterpreted, that the key factor is the cost incurred by the supplier, and that management goals of the supplier are also important and are subject to change, were made by Shaen Tarter and Justin Charon, Yukon Fuels, personal communication with Emerman Consulting, July 2005

<u>Utility</u>	<u>Community</u>	<u>Population</u>	<u>Gallons</u>
Almautluak Joint Utilities	Almautluak	291	59,038
Ipnatchiaq Electric Co.	Deering	129	55,249
Nunam Iqua Electric Co.	Nunam Iqua	204	56,597
Tuluksak Trad. Power Util.	Tuluksak	461	50,236
Unqusrag Power Co.	Newtok	326	38,820

- Assume that each cooperative consists of 10 members, bringing the total pooled requirement to 500,000 gallons.
- Assume that a price reduction is achieved of 8% based on the table above for a "typical discount program." Further assume that this reduces the delivered price to these communities from \$2.50 to \$2.30 (8% of \$2.50 = \$0.20).
- Finally, assume that any further savings attributable to credit enhancement as discussed for the NWAB consortium is neutralized by the cooperative's administrative fee.

Based on all these assumptions, the total savings realized by these 30 purchasers would be:

$$\$0.20 \times 1.5 \text{ million gallons} = \$300,000$$

A savings of \$0.20 per gallon would be a significant amount for consumers, and \$10,000 would be a significant annual savings for bulk fuel purchasers of this size. In terms of the overall cost of fuel in rural Alaska, \$300,000 would have to be seen as a significant number but a small percentage of the market.

In terms of its likely impact on borrowing from the BFRLF, total fuel cost savings of this magnitude would be small compared with the aggregate size and range of uncertain projections for the program over the next 10 years.

## SECTION 6

### PROPOSALS TO RAISE THE BFRLF ANNUAL BORROWING LIMIT AND THE PROJECTED IMPACT ON BFRLF DEMAND

The Rural Energy Action Council (REAC) created by Governor Murkowski issued its findings and recommendations in a report dated April 15, 2005. Among the Council's recommendations are the following:

- The State should provide staff and financial assistance to help develop more bulk fuel purchasing cooperatives in rural Alaska. The rationale cited in support of this strategy is that such cooperatives, by consolidating the bulk fuel purchases of multiple parties, might acquire fuel at lower cost as a result of volume discounts.
- The statutes governing the BFRLF should be amended to increase the annual borrower limit above \$300,000 per year as follows:
  - i. For bulk fuel purchasing cooperatives, the annual limit should be based on the number of communities belonging to the cooperative. While the recommendation is not explicit, the implication is that cooperatives should be able to borrow each year up to the individual limit times the number of member communities.
  - ii. For individual borrowers, the report discusses (but stops short of formally recommending) an increase in the annual limit to \$650,000.

During the 2005 legislative session, a bill was introduced<sup>24</sup> that would enact a variation on REAC's recommendations with regard to the BFRLF. The bill is being held over the interim for further consideration in the 2006 session. In its present form, the bill would raise the annual borrowing limit for the following two types of organizations:

- A "cooperative corporation organized under AS 10.15"
- An "electric cooperative organized under AS 10.25."

For each of these two categories of borrowers, the annual borrowing limit would be raised to "\$300,000 multiplied by the number of communities on whose behalf the bulk fuel is to be purchased, or \$1,000,000, whichever is greater."<sup>25</sup>

<sup>24</sup> SB 188 sponsored by Senator Olson

<sup>25</sup> The analysis that follows was based on this existing language in the bill. For example, since AVEC serves 50 villages, the bill would raise AVEC's borrowing limit to \$15 million. After reviewing the draft of this report, AEA observed that the apparent intent of the bill was to raise the limit for cooperatives to \$300,000 times the number of communities, or \$1.0 million, whichever is

A review of the corporations data base maintained by the Department of Commerce, Community and Economic Development shows the following existing organizations that would be directly affected by this legislation:

- ANICA (Alaska Native Industries Cooperative Association) This is the only existing cooperative corporation organized under AS 10.15 that purchases bulk fuel on behalf of multiple communities under 2,000 population, that disburses more than \$300,000 per year doing so, and therefore could be affected by the proposed legislation.

As reported by Northern Economics, Inc. in 2001,<sup>26</sup> ANICA serves "about 25 communities, predominantly in Western Alaska. According to Crowley Maritime, the cooperative purchases about 2 to 3 million gallons of fuel per year on behalf of retail establishments operated by village corporations or village tribal councils, which then sell the fuel to consumers in their communities."

An ANICA representative contacted for purposes of this study stated that, although some of its members have borrowed from the BFRLF in the past and may do so again in the future, ANICA itself has no interest in borrowing from the BFRLF under any circumstances that are presently foreseen, regardless of the program's borrower limit. The representative was not willing to describe or discuss ANICA's current program, its method of procuring fuel for its members, or its current bulk fuel financing arrangements.<sup>27</sup>

- AVEC (Alaska Village Electric Cooperative) AVEC, as well as the other electric utilities listed below, is an electric cooperative organized under AS 10.25. AVEC supplies power to 50 communities, each with a population under 2,000, and could therefore under this legislation borrow up to \$15 million per year from the BFRLF. As noted earlier, AVEC's estimated cost of fuel in FY05 is approximately \$10 million.

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less. Substituting "less" for "greater" would set AVEC's hypothetical borrowing limit at \$1.0 million, not \$15 million. A subsection has been added on pages 73-74 discussing the impact of this possible change in the language of the bill.

<sup>26</sup> "Screening Report for Alaska Rural Energy Plan" April 2001. Prepared by Northern Economics for the Alaska Industrial Development and Export Authority. P 3-3.

<sup>27</sup> Information in this paragraph from Bill Kuhr. Alaska Native Industries Cooperative Association (ANICA). Personal communication with Emerman Consulting. July 2005.

AVEC in the past has not borrowed money to purchase fuel but instead has paid for fuel from its cash reserves.<sup>28</sup> Assuming there were sufficient funds in the BFRLF to accommodate it, AVEC could be interested in borrowing for some or all of its requirements if the interest it would pay on a BFRLF loan were lower than the rate it earns on its cash reserves, or if its cash reserves for some reason were insufficient. Given its present earnings level on cash reserves, AVEC would gain from a zero or very low interest rate loan, but not from a loan at 5% or at current municipal revenue bond rates. On the other hand, if interest rates (and therefore earnings on its cash reserves) were to go back up to much higher levels, a BFRLF loan at 5% would at some point make financial sense.

An additional issue to consider is the requirement in existing BFRLF statutes that a borrower such as AVEC obtain the written endorsement of the governing body of every community that would be served by the fuel. Obtaining 50 such written endorsements each year could prove to be a costly administrative hurdle. Yet, if it made financial sense and if it were easy to obtain, say, 25 endorsements, AVEC could be interested in a BFRLF loan to fuel their powerplants in those 25 communities.

Finally, AVEC management is aware of the need that many communities have for BFRLF financing. Unless there were a change in management philosophy, AVEC would be unlikely to seek a BFRLF loan if too much of the Fund were thereby soaked up and communities in need of such loans were shut out as a result.

#### IPEC

(Inside Passage Electric Cooperative). IPEC serves 5 communities with population under 2,000 in southeast Alaska, and paid approximately \$1.5 million for fuel in FY05.<sup>29</sup>

All IPEC communities have year-round access to fuel delivery and obtain fuel supplies more frequently than once every 6 months. As a result, IPEC is not eligible for BFRLF loans. In addition, IPEC pays for fuel deliveries from its cash

<sup>28</sup> Information and views in this subsection supplied by Meera Kohler, Alaska Village Electric Cooperative. Personal communication with Emerman Consulting, July 2005.

<sup>29</sup> Estimated cost based on 784,253 gallons reported for FY04 multiplied by the most recent IPEC price (\$1.95 per gallon) reported for FY05.

reserves and has no plan at this time to incur debt for this purpose.<sup>30</sup>

- Naknek Electric Association. While NEA serves 3 communities (Naknek, South Naknek, and King Salmon), the proposed legislation would raise its borrowing limit to \$1.0 million. In FY05, its fuel cost was approximately \$2.0 million.<sup>31</sup> Until this year, NEA purchased its fuel entirely from its own cash reserves. This year, however, because of the recent sharp increase in fuel prices, NEA needed to augment its cash reserves with borrowed funds in order to pay for its fuel supply. After determining that the \$300,000 borrower limit was below the amount they needed, NEA borrowed the funds from CFC (the Cooperative Finance Corporation). Had the borrower limit for the BFRLF been \$1.0 million instead, and assuming that the cost of debt from the BFRLF was more favorable than CFC, then NEA may well have applied to the BFRLF this year to augment its cash reserves.

NEA is seeking to build up its cash reserves and would prefer to avoid debt financing in connection with its bulk fuel acquisitions. The fuel surcharge currently built into its rate is 6 cents per kWh – a high amount compared with past fuel surcharges. Assuming the borrower limit were raised, NEA could seek one or more substantial loans from the BFRLF if fuel prices remain high and if cash reserves remain inadequate. However, if NEA has sufficient cash in the future to buy the fuel they need, then debt financing through the BFRLF would presumably depend, at least in part, on the cost of BFRLF debt compared with the earnings rate on NEA's cash reserves (as discussed above for AVEC).

- Unalakleet Valley Electric Cooperative (UVEC). Although this electric cooperative serves only the community of Unalakleet, the proposed legislation would raise its annual BFRLF borrowing limit to \$1.0 million. It has not borrowed from the BFRLF during the past 5 years although its annual cost of fuel during that period was mostly in the \$300-400,000 range. However, given the recent jump in fuel prices (now at \$2.28 per gallon

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<sup>30</sup> Information in this paragraph supplied by Jodi Mitchell, Inside Passage Electric Cooperative. Personal communication with Emerman Consulting, July 2005.

<sup>31</sup> Information and views in this subsection supplied by Donna Vukich, Naknek Electric Association. Personal communication with Emerman Consulting, July 2005.

for UVEC), their current annual fuel cost is closer to \$700,000.<sup>32</sup>

Historically UVEC has paid for its fuel from the cooperative's cash reserves and has done so again for its most recent delivery. But these reserves were significantly depleted this year to cover the full cost of the fuel. If prices remain high or go higher, UVEC could find it necessary in the future to supplement its cash reserves with debt financing, and it would consider using the BFRLF in that event.

Despite this possibility, UVEC does not presently plan to supplement its cash payments for fuel with debt financing. If that became necessary, however, it is anticipated that the supplemental amount needed would fit within the current \$300,000 per year borrower limit.

It appears that these are the only 5 existing organizations that would be directly affected by the proposed legislation. There are additional electric cooperatives organized under AS 10.25, but either their annual fuel requirements are below \$300,000 in any event, or they serve communities with over 2,000 population.

#### Impact of Changing the Language of the Bill on Maximum Borrower Limit

The borrower limit for these cooperatives under the proposed bill would be significantly lower if, as discussed in footnote 24, the bill's language were changed to establish \$1.0 million as the maximum amount that could be borrowed each year rather than \$300,000 times the number of communities served by the cooperative. Based on the information presented in the section immediately above, the impact of that change would likely be as follows for the cooperatives directly affected by the bill:

ANICA: No change given no interest in borrowing from the BFRLF.

AVEC: With roughly \$10 million in annual fuel cost, setting the borrower limit at \$1.0 million (rather than \$15 million in AVEC's case) would make it even less likely that AVEC would seek a BFRLF loan.

IPEC: No change as IPEC is not eligible for BFRLF loans as discussed above.

Naknek Electric Association: Since NEA serves 3 communities, its BFRLF borrowing limit each year would be \$900,000 if the bill's language were changed

<sup>32</sup> Current fuel price and subsequent information and views in this subsection supplied by Isaiah Towarak, Unalakleet Valley Electric Cooperative. Personal communication with Emerman Consulting, July 2005. Estimate of current annual fuel cost derived by multiplying current fuel price (\$2.28 per gallon) times FY04 gallons (305,134) reported in the FY04 PCE statistical report.

as described above rather than \$1.0 million under the present language. This minor difference is unlikely to affect the prospects of NEA becoming a BFRLF borrower in the future.

Unalakleet Valley Electric Cooperative: Since UVEC serves only 1 community, its BFRLF borrowing limit each year would be \$300,000 if the bill's language were changed as described above rather than \$1.0 million under the present language. However, the amount that UVEC might be interested in borrowing from the BFRLF if cash reserves become inadequate is expected to be less than \$300,000 in any event. So again, changing the bill's language in this manner would be unlikely to affect the prospects of this cooperative becoming a BFRLF borrower.

Although changing the bill's language on borrower limit is not likely to affect any of these cooperatives in the foreseeable future, it clearly would eliminate the possibility of AVEC or ANICA submitting multimillion loan requests that could drain all or a large portion of the Fund's lending capability should either or both of these cooperatives become interested in this financing option in the future.

BFRLF Demand Projections Assuming Changes in Annual Borrower Limits

The starting point for this section is the BFRLF demand projection produced earlier assuming no changes in the program (and assuming adequate funds are available in the BFRLF). That demand projection took the form of two scenarios based on two different oil price outlooks and is reproduced below:

BFRLF Demand Projections  
Assuming No Changes in Program

(Millions of Dollars)

	<u>FY08</u>	<u>FY11</u>	<u>FY14</u>
Scenario #1 (declining fuel prices)	\$4.5	\$6.9	\$10.2
Scenario #2 (current fuel prices)	9.2	12.6	16.9

The rest of this section will consider how these two scenarios might change if the BFRLF annual borrower limits are changed.

A. Passage of SB 188 in its Present Form

There are 2 basic issues to consider:

- Would any of the 5 existing organizations listed above be likely to obtain financing through the BFRLF if the borrower limits were raised as discussed above?
- Are new bulk fuel purchasing cooperatives, or broader cooperatives whose activities include the purchase of bulk fuel, likely to be organized under AS 10.15 and become BFRLF borrowers?

Among existing cooperatives, this study has found that none anticipate becoming borrowers under the BFRLF whether or not the borrower limit is raised. The most likely candidate to become a borrower would be Naknek Electric Association, which did consider supplemental financing from the BFRLF this past year and may well have submitted a loan request to AEA (rather than CFC) if the borrower limit had been \$900,000 or \$1.0 million rather than \$300,000. As stated above, NEA plans to replenish its cash reserves to the point that it can resume paying for its fuel without resort to debt. Given this intent, it should be expected that NEA will at least be able to reduce its supplemental financing requirement even if it does not eliminate that requirement right away. UVEC could also become a BFRLF borrower if prices go higher and its funds run short although it continues to pay for its fuel from cash reserves and plans to continue to do so.

Absent a need to borrow money due to inadequate cash reserves, these cooperatives are unlikely to benefit from becoming borrowers under the BFRLF unless short-term interest rates go up to levels not seen in many years. As discussed above in the case of AVEC, it would make financial sense for these cooperatives to borrow from the BFRLF only if the rate of earnings on their cash reserves – which would correspond most closely with short-term interest rates – was significantly higher than the interest rate charged by the BFRLF. In that case, their membership would be better off borrowing at comparatively low interest from the BFRLF while realizing relatively high interest on their cash reserves.

As noted earlier, the BFRLF statute sets the interest rate at the average long-term municipal revenue bond rate unless the administering agency determines that a rate reduction is needed based on the community's ability to pay. The program regulations establish a presumption that zero interest is charged on a borrower's initial loan, 5% on the second loan, and the municipal revenue bond rate on all subsequent loans (3 AAC 106.320). However, the regulations do not remove the agency's discretion to set the rates within the parameters established by statute.

As discussed in the previous section, it does not seem likely that new, formal bulk fuel purchasing cooperatives will be created in the foreseeable future under AS 10.15. What is more likely is that efforts to consolidate fuel purchase orders will be directed towards informal consortiums along

the lines of the Western Alaska Fuel Group or the recent efforts of the Northwest Arctic Borough.

It appears possible but unlikely that SB 188 in its present form would result in an increase in BFRLF demand.

B. Increases in the Annual Limit for All Borrowers Above \$300,000

How would the BFRLF projections change if the proposal considered by the Rural Energy Action Group to increase the annual borrower limit for all BFRLF borrowers were enacted? The amended limit discussed in the REAC report is \$650,000.

Points raised earlier in this study that are relevant to the question include the following:

- Although the annual borrower limit was raised from \$200,000 to \$300,000 for FY04 and FY05, only 1 loan for \$300,000 was issued during those 2 years. In FY05, in addition to the single \$300,000 loan, only 2 other borrowers exceeded the previous \$200,000 limit: one borrowed \$212,000 and the other \$207,000.
- There is no data base that shows all of the bulk fuel purchasers in BFRLF eligible communities along with their annual gallonage requirements. It is therefore difficult to estimate how much of the potential bulk fuel financing market consists of purchasers who acquire more than \$300,000 of fuel each year, let alone how many would become eligible and interested in BFRLF financing at alternative annual borrowing limits. This study adopted the assumption that 25 million gallons (valued during FY05 at approximately \$50 million) constitutes the potential market for BFRLF financing given the current annual borrower limit of \$300,000. If the annual borrower limit were eliminated, the potential market was estimated at 50 million gallons (or about \$100 million at FY05 prices).

What this study can present are illustrations of what might plausibly happen to BFRLF demand if annual borrower limits are raised. These illustrations consist of the 2 basic scenarios already presented, to which are added an increment of borrowing that might occur as a result of higher borrower limits.

Alternative Borrowing Limit #1: Assume that the borrower limit is increased to \$400,000 beginning in FY07. The following assumptions are adopted to illustrate its possible impact on the 2 basic demand scenarios:

In Scenario #1, fuel prices decline over the next 3 years to FY02 levels and then rise at the rate of inflation. This price outlook would relieve what appears to be the major source of pressure bringing new bulk fuel purchasers to the BFRLF program.

In view of the experience so far with the increase in limit from \$200,000 to \$300,000, the assumption adopted for scenario #1 is that an increase in the borrower limit to \$400,000 would result in the addition of 1 borrower every other year, beginning in FY08. Each of these additional borrowers draws the maximum of \$400,000 per year. The impact on Demand Projection #1 would be as follows:

FY08: 1 additional borrower drawing \$400,000.

Amount borrowed from BFRLF = \$4.9 million

FY11: A second borrower is added drawing \$400,000

Amount borrowed from BFRLF = \$7.7 million

FY14: Two more borrowers are added, each drawing \$400,000

Amount borrowed from BFRLF = \$11.8 million

In scenario #2, fuel prices increase by 20% from FY05 to FY06, and then remain constant in nominal terms for the rest of the projection period. It is assumed for this illustration that the higher fuel price will result in twice the impact shown for scenario #1. In other words, one new borrower drawing \$400,000 is added to the BFRLF program every year beginning in FY07 (not every other year). The impact on Demand Projection #2 would be as follows:

FY08: Two additional borrowers each drawing \$400,000

Amount borrowed from BFRLF = \$10.0 million

FY11: Five additional borrowers each drawing \$400,000

Amount borrowed from BFRLF = \$14.6 million

FY14: Eight additional borrowers each drawing \$400,000

Amount borrowed from BFRLF = \$20.1 million

The following table summarizes how this differs from the "No Change" scenarios:

BFRLF Demand Projections for Two Fuel Price Scenarios  
No Change in Borrower Limit vs. Increase to \$400,000

(Millions of Dollars)

	<u>FY08</u>	<u>FY11</u>	<u>FY14</u>
Scenario #1 (declining fuel prices)			
No Change in Borrower Limit	\$4.5	\$6.9	\$10.2
Increase to \$400,000	4.9	7.7	11.8
Scenario #2 (current fuel prices)			
No Change in Borrower Limit	\$9.2	\$12.6	\$16.9
Increase to \$400,000	10.0	14.6	20.1

Alternative Borrowing Limit #2: Assume that the borrower limit is increased to \$600,000 beginning in FY07. The same pattern of assumptions are adopted to illustrate its possible impact on the 2 basic demand scenarios:

- In scenario #1, an increase in the borrower limit to \$600,000 would result in the addition of 1 borrower every other year beginning in FY08. Each of these additional borrowers draws the maximum of \$600,000 per year. The impact on Demand Projection #1 would be as follows:

FY08: 1 additional borrower drawing \$600,000.

Amount borrowed from BFRLF = \$5.1 million

FY11: A second borrower is added drawing \$600,000

Amount borrowed from BFRLF = \$8.1 million

FY14: Two more borrowers are added, each drawing \$600,000

Amount borrowed from BFRLF = \$12.6 million

- In scenario #2, one new borrower drawing \$600,000 is added to the BFRLF program every year beginning in FY07 (not every other year). The impact on Demand Projection #2 would be as follows:

FY08: Two additional borrowers each drawing \$600,000

Amount borrowed from BFRLF = \$10.4 million

FY11: Five additional borrowers each drawing \$600,000

Amount borrowed from BFRLF = \$15.6 million

FY14: Eight additional borrowers each drawing \$600,000

Amount borrowed from BFRLF = \$21.7 million

The following table summarizes how these alternatives differ from the "No Change" scenarios:

BFRLF Demand Projections for Two Fuel Price Scenarios  
No Change in Borrower Limit vs. Increase to \$400,000 or to \$600,000

(Millions of Dollars)

	<u>FY08</u>	<u>FY11</u>	<u>FY14</u>
Scenario #1 (declining fuel prices)			
No Change in Borrower Limit	\$4.5	\$6.9	\$10.2
Increase to \$400,000	4.9	7.7	11.8
Increase to \$600,000	5.1	8.1	12.6
Scenario #2 (current fuel prices)			
No Change in Borrower Limit	\$9.2	\$12.6	\$16.9
Increase to \$400,000	10.0	14.6	20.1
Increase to \$600,000	10.4	15.6	21.7

## ATTACHMENT 1

- Original Statute Establishing the Bulk Fuel Revolving Loan Fund (SLA 1980, Chapter 83)
- Current BFRLF Statute (AS 42.45.250)
- Current BFRLF Regulations (3 AAC 106.300)

Original Statute Establishing the Bulk Fuel Revolving Loan Fund  
(SLA 1980, Ch. 83)

Sec. 41. AS 45 is amended by adding a new chapter to read:

CHAPTER 87. BULK FUEL.

Sec. 45.87.010. BULK FUEL REVOLVING LOAN FUND ESTABLISHED. There is established in the Department of Commerce and Economic Development the bulk fuel revolving loan fund to assist communities in purchasing bulk fuel. A community, or a private individual who has written endorsement from the governing body of the community, is eligible for a loan from the bulk fuel revolving loan fund for a bulk fuel purchase.

Sec. 45.87.020 LOAN TERMS FOR BULK FUEL PURCHASES. (a) Loans made from the bulk fuel revolving loan fund to one borrower in any fiscal year

(1) may not exceed \$50,000;  
(2) shall be repaid in one year or less; and  
(3) may not exceed 90 percent of the wholesale price of the fuel purchased.

(b) Interest may be charged on a loan made from the bulk fuel revolving loan fund. Interest shall be charged on a loan at a rate equal to the percentage of the average weekly yield of municipal bonds for the 12 months preceding the date of the loan, as determined by the commissioner of commerce and economic development from municipal bond yield rates reported in the 30-year revenue index of the Weekly Bond Buyer. However, if the commissioner finds that a community cannot afford to repay a portion of interest on a loan, and makes a determination in writing, he may reduce or eliminate the interest rate applicable to the loan.

(c) Repayments of the principal on a loan from the bulk fuel revolving loan fund shall be paid by the commissioner of commerce and economic development into the bulk fuel revolving loan fund.

Sec. 45.87.030. POWERS OF THE DEPARTMENT. The department may contract for the administration of the bulk fuel loan program established in this chapter.

Sec. 45.87.040. DEFINITIONS. In this chapter

(1) "bulk fuel storage facility" means a storage tank capable of holding at least 10,000 gallons of petroleum fuels;

(2) "community" means an organized municipality or an unincorporated village which is a social unit, with a population under 2,000;

(3) "department" means the Department of Commerce and Economic Development.

## Current BFRLF Statute

### Sec. 42.45.250. Bulk fuel revolving loan fund.

(a) The bulk fuel revolving loan fund is established in the authority to assist communities, utilities providing power in communities, and fuel retailers in communities in purchasing bulk fuel to generate power or supply the public with fuel for use in communities. A community, or a person generating power or selling fuel in a community who has written endorsement from the governing body of each community for which a loan from the fund is sought, is eligible for a loan from the bulk fuel revolving loan fund for a purchase of an emergency supply or a semiannual or annual supply of bulk fuel to be used in the community.

(b) Money in the fund may be used by the legislature to make appropriations for costs of administering this section.

(c) The foreclosure expense account is established as a special account within the bulk fuel revolving loan fund. This account is established as a reserve from fund equity.

(d) The authority may spend money credited to the foreclosure expense account when necessary to protect the state's security interest in collateral on loans made under this section or to defray expenses incurred during foreclosure proceedings after a default by an obligor.

(e) Loans made from the bulk fuel revolving loan fund to one borrower in any fiscal year

(1) may not exceed \$300,000;

(2) shall be repaid in one year or less; and

(3) may not exceed 90 percent of the wholesale price of the fuel purchased.

(f) Interest may be charged on a loan made from the bulk fuel revolving loan fund. Interest shall be charged on a loan at a rate equal to the percentage of the average weekly yield of municipal bonds for the 12 months preceding the date of the loan, as determined by the authority from municipal bond yield rates reported in the 30-year revenue index of the Weekly Bond Buyer. However, if the authority finds that a community cannot afford to repay a portion of interest on a loan, and makes a determination in writing, the authority may reduce or eliminate the interest rate applicable to the loan.

(g) Repayments of the principal, the interest, and the money chargeable to principal or interest that is collected through liquidation by foreclosure or other process on a loan made under this section shall be paid into the bulk fuel revolving loan fund. The fund is not a dedicated fund.

(h) The authority may contract for the administration of the bulk fuel loan program established in this section.

(i) The authority shall dispose of property acquired through default or foreclosure of a loan made under this section. Disposal shall be made in a manner that serves the best interests of the state, and may include the amortization of payments over a period of years.

(j) The authority may adopt regulations necessary to carry out the provisions of this section, including regulations to establish reasonable fees for services provided and charges for collecting the fees.

(k) The authority may collect the fees and collection charges established under (j) of this section and shall deposit the money in the general fund.

(l) In this section,

(1) "community" means an organized municipality or an unincorporated village that is a social unit, with a population of less than 2,000 people.

(2) "person" has the meaning given in AS 01.10.060 and includes a corporation, a cooperative, a joint venture, and a governmental entity.

Current BFRLF Regulations

Article 3

Loans From Bulk Fuel Revolving Loan Fund

Section

300. Application process.

305. Examination.

310. Eligibility.

315. Financial and credit record.

320. Ability to repay.

325. Lending practices.

330. Disbursement of loan money.

335. Supervision of loans.

340. Costs.

345. Assumptions.

350. Modifications.

355. Reconsideration of a loan request.

360. Confidentiality of loan information.

365. Definitions.

3 AAC 106.300. Application process

To apply for a loan for the purchase and transportation of bulk fuel, an applicant shall file with the authority

- (1) a completed application for a bulk fuel loan, on a form provided by the authority;
- (2) proof that the application is for a community with a population under 2,000;
- (3) written endorsement from the governing body of the community, if the applicant is a person generating power or selling fuel in the community;

(4) a letter of intent, on a form provided by the authority, stating the amount requested, the intended use of the proposed loan money, and how the community intends to finance 10 percent of the total fuel cost.

(5) a bulk fuel loan agreement, on a form provided by the authority;

(6) a bulk fuel promissory note, on a form provided by the authority;

(7) if the applicant is a Native village council, a resolution waiving sovereign immunity on a form provided by the authority;

(8) a resolution by community or corporate applicants approving the purchase of bulk fuel, on a form provided by the authority;

(9) a \$25 nonrefundable application fee;

(10) information about the condition of the fuel storage tanks where the fuel is to be kept;

(11) any other information requested by the authority to demonstrate the applicant's eligibility for a loan.

History: Eff. 2/16/96, Register 137; am 3/25/2005, Register 173

### 3 AAC 106.305. Examination

(a) The authority will process the material described in 3 AAC 106.300 and evaluate the eligibility of the community and the applicant's eligibility, financial and credit records, ability to repay the loan and any other relevant information. Additionally, the authority will evaluate the information provided under 3 AAC 106.300(10).

(b) On the basis of the evaluation described in (a) of this section, the authority will

(1) inactivate the application, if the applicant fails to provide the information required by 3 AAC 106.300;

(2) deny the application, if the applicant is ineligible; or

(3) approve the applicant's loan request; such approval may include modifications to the request.

(c) The authority will fix, within the limitations set by AS 42.45.250, the terms of a loan and repayment schedule.

(d) If a loan request is denied or significantly modified by the authority, the authority will provide the applicant with a statement of the reasons for the action and the information relied upon by the authority for the denial or modification.

(e) A material misstatement or omission of fact made by an applicant constitutes grounds for denial of a loan request.

History: Eff. 2/16/96, Register 137

**3 AAC 106.310. Eligibility**

To be eligible for a loan,

- (1) an applicant must intend to use the loan for purchase of fuel for an emergency or annual or semiannual supply, including the necessary costs of transporting the fuel;
- (2) the applicant must agree to repay the loan in one year or less, according to a repayment plan determined by the authority;
- (3) the amount borrowed may not exceed 90 percent of the wholesale price of the fuel purchased plus the cost of transporting the fuel;
- (4) the amount of the loan, added to the amounts of all other bulk fuel loans to the same borrower in the same fiscal year, may not exceed \$300,000.

History: Eff. 2/16/96, Register 137; am 3/25/2005, Register 173

**3 AAC 106.315. Financial and credit record**

The authority will, in its discretion, consider the following factors in evaluating an applicant's financial and credit record:

- (1) existing and prior debts;
- (2) credit reports obtained from creditors and private credit reporting services;
- (3) prior loan history with the authority;
- (4) timeliness in making payments on loans and other debts;
- (5) prior bankruptcies;
- (6) existence of tax liens;
- (7) unpaid judgments and prior foreclosures; and
- (8) financial and credit reputation.

History: Eff. 2/16/96, Register 137

**3 AAC 106.320. Ability to repay**

(a) The authority will determine the interest rate to be charged on each bulk fuel loan based on the ability of the borrower to repay the loan. If the authority makes a written determination that a borrower cannot afford to repay all or part of the interest on a loan at the rate required by AS 42.45.250, the authority will, in its discretion, either eliminate or reduce the interest rate.

(b) The following rebuttable presumptions will be considered by the authority in making determination of the ability of a borrower to repay interest on a bulk fuel loan:

(1) a borrower is presumed unable to repay interest on its first bulk fuel loan;

(2) a borrower is presumed unable to repay more than five percent interest on its second bulk fuel loan; and

(3) a borrower is presumed able to repay the entire interest computed at the rate required by AS 42.45.250 on its third, and successive, bulk fuel loans.

History: Eff. 2/16/96, Register 137

**3 AAC 106.325. Lending practices**

(a) The loan period will be fixed by the authority based on the needs of the borrower. However, loans must be repaid within one year.

(b) No proceeds of a bulk fuel loan may be used to

(1) purchase aviation gas, unless the borrower certifies in writing that the aviation gas will be used only for local ground or water transportation, such as snow machines and outboard motors;

(2) purchase fuel other than bulk petroleum fuels;

(3) subsidize a business; or

(4) make a profit, unless the profit is used to purchase additional community fuel supplies.

History: Eff. 2/16/96, Register 137

**3 AAC 106.330. Disbursement of loan money**

(a) Loan money will be disbursed after the borrower has complied with the provisions of the loan documents and the requirements of this chapter by the authority.

(b) Loan money will be disbursed upon receipt by the authority, division of energy of delivery bills and fuel invoices.

(c) No loan money will be disbursed until the loan agreement, the borrowing resolution, the promissory note, and the resolution waiving sovereign immunity, when applicable, have been signed by the authorizing signatories and received by the authority.

History: Eff. 2/16/96, Register 137

### 3 AAC 106.335. Supervision of loans

If a loan is in default, the authority will, in its discretion, require the borrower to furnish annual financial statements, reports of bulk storage tank facility capacity, and a schedule of change of village council members, or community officials or officers. The authority will, in its discretion, also require an audit or audits to determine whether the borrower has complied with the provisions of the loan.

History: Eff. 2/16/96, Register 137

### 3 AAC 106.340. Costs

(a) An origination fee of one-half percent of the total loan amount is due from the borrower when all provisions of 3 AAC 106.330 have been met.

(b) The authority will, in its discretion, charge to the applicant expenses incurred by the authority in processing an application. These expenses include the cost of title reports and insurance, recording fees, appraisals, surveys, travel, and other direct costs.

History: Eff. 2/16/96, Register 137

### 3 AAC 106.345. Assumptions

(a) Assumption of a loan made under AS 42.45.250 and 3 AAC 106.300 - 3 AAC 106.365 is not permitted.

(b) Wraparound financing that includes a loan made under AS 42.45.250 and 3 AAC 106.300 - 3 AAC 106.365, is prohibited and constitutes a default on the loan.

History: Eff. 2/16/96, Register 137

### 3 AAC 106.350. Modifications

A request for a modification to a loan made under AS 42.45.250 and 3 AAC 106.300 - 3 AAC 106.365 will be processed in the same manner as a loan application. The authority will, in its discretion, require the applicant to provide one or more of the items specified in 3 AAC 106.300.

History: Eff. 2/16/96, Register 137

**3 AAC 106.355. Reconsideration of a loan request**

(a) If a loan request is denied, inactivated, or significantly modified by the authority, an applicant may file a written request for reconsideration with 30 days after receipt of notice of the authority's decision.

(b) The authority will consider a request for reconsideration if the applicant submits information to show that

(1) there has been a substantial change in the circumstances leading to the authority's decision;

(2) additional relevant information can be provided to the authority that was not initially available; or

(3) administrative errors were made by the authority.

History: Eff. 2/16/96, Register 137

**3 AAC 106.360. Confidentiality of loan information**

(a) The following information is not confidential and is available for public inspection upon request:

(1) a document that is already a public record including deeds of trust, financing statements, warranty deeds, bills of sale, mortgages, liens, and vehicle titles;

(2) general information regarding loans, including the original loan amount, loan terms, personal guarantees, and disbursement and repayment schedules;

(3) insurance matters, including title insurance policies and correspondence with insurance companies or borrowers regarding losses, accident reports, and nonpayment of premiums; and

(4) foreclosure and default proceedings.

(b) The following information is confidential and is not subject to public disclosure:

(1) personal and financial information, including income tax returns, financial statements, business income statements, pro forma profit and loss statements, credit information obtained directly from banks and other creditors, and reports obtained from consumer reporting agencies;

(2) loan review staff notes containing information relating to credit worthiness of an applicant; and

(3) the payment history on a loan, unless the loan is in default.

(c) Information not described in (a) or (b) of this section may be subject to public disclosure. A request for disclosure must be made, and disclosure will be determined in accordance with 6 AAC 96. Upon receipt of a request for disclosure, the authority will notify the loan applicant and other persons with a privacy interest in the request, to permit them to present reasons why the requested information should not be disclosed.

History: Eff. 2/16/96, Register 137

### 3 AAC 106.365. Definitions

Unless the context requires otherwise, in 3 AAC 106.300 - 3 AAC 106.360,

(1) "bulk fuel" means bulk petroleum fuels;

(2) "default" includes a violation of any provision of AS 42.45.250, 3 AAC 106.300 - 3 AAC 106.365, or the loan documents, failure to make a necessary payment within 15 days after it is due, or failure to maintain the insurance required by the authority;

(3) "wraparound financing" means a contract that includes the balance due on an existing debt and an additional amount to cover the difference between the selling price and the existing debt.

History: Eff. 2/16/96, Register 137

## ATTACHMENT 2

Excerpts from "Screening Report for Alaska Rural Energy Plan," Northern Economics, Inc., April 2001, Section 3.3.2 (Consolidation of Fuel Purchases).

(Excerpts from "Screening Report for Alaska Rural Energy Plan," Northern Economics, Inc., April 2001, pages 3-3 to 3-6.)

### 3.3.2 Consolidation of Fuel Purchases

**Overview.** Consolidation occurs when several entities purchase fuel together. Transactions may involve an administrator who coordinates the purchase and delivery arrangements. Consolidated fuel purchases offer the greatest benefit to entities that purchase small volumes of fuel. For example, an organization that purchases about 20,000 gallons per year could save 10 to 15 percent on the fuel price through consolidation, minus any administrative costs charged by some of the organizations that consolidate fuel purchases. Larger purchasers (organizations that purchase more than 250,000 gallons) could save about 2 to 4 percent of the fuel price, minus any administrative costs if the organization is purchasing through a fuel consolidator.

In a typical rural community, a number of entities may purchase fuel from the same vendor independently of each other. Each entity purchases fuel to meet its own requirements. The fuel price to these entities is a function of the price of fuel at the refinery gate and the cost of delivery to each purchaser, as well as the price when the order was placed. Prices per gallon decline with larger fuel orders, in part because of the reduced delivery cost per gallon and the suppliers' desire to capture a larger portion of the market. If all entities in a community place one consolidated order, their combined market power can result in lower costs for each entity even if the deliveries are to separate storage tanks.

Several organizations consolidate fuel purchases to reduce fuel costs in Alaska. Some of the organizations are formal cooperatives, while others are brokers that consolidate fuel purchases. The organizations include the following:

- **Alaska Native Industries Cooperative Association (ANICA)** is a cooperative that serves about 25 communities, predominantly in Western Alaska. According to Crowley Maritime, the cooperative purchases about 2 to 3 million gallons of fuel per year on behalf of retail establishments operated by village corporations or village tribal councils, which then sell the fuel to consumers in their communities (Dwight, 2000).
- **AVEC** purchases fuel for the electric utilities that it operates in 51 villages in rural Alaska. The cooperative has established seven regions for fuel consolidation and issues separate bids for each region. The Northwest Arctic Borough School District, Lower Yukon School District, Lower Kuskokwim School District, St. Mary's School District, and Kashunamuit School District (Chevak), consolidated their fuel purchases with AVEC in 2000. AVEC purchases about 6 million gallons annually (Kohler, 2000; Petrie, 2000).

- **Western Alaska school districts** are consolidating fuel purchases to obtain lower prices. The districts make a consolidated purchase of about 4.5 million gallons per year (Dwight, 2000).
- **WAVE Fuels and Transportation** is a subsidiary of Western Alaska Village Enterprise (WAVE), a Native-shareholder-funded company that operates primarily in the Calista region of Western Alaska. WAVE Fuels and Transportation purchases fuel on behalf of its customers and solicits bids from suppliers to deliver the fuel. WAVE serves more than 60 customers in about 45 communities (Hess, 2000). Its primary market area is in Southwest Alaska. The organization purchases about 5 million gallons of fuel on an annual basis and sells the fuel to stores and other retail establishments for subsequent sale in the villages. (Dwight, 2000).
- **Western Alaska Fuel Group** is an informal purchasing group composed of the electric utilities in Kotzebue, Nome, Unaiakleet, Dillingham, Naknek, Iliamna, and Igiugig. The group purchases about 6 million gallons annually with a single combined bid request (Kohler, 2000; Dwight, 2000).
- Other major fuel purchases are made by the fuel terminal operators at Naknek, Bethel, Dillingham, Nome, and Kotzebue. The terminals function as the primary fuel suppliers in these larger communities, and as storage depots for purchases by nearby villages in the event of a shortage. The terminals are owned by major fuel distributors. For example, Bristol Fuels operates one of three terminals in Dillingham; Crowley Marine and Bonanza Fuel each operate a terminal in Nome; and Crowley Marine Services owns and operates the terminal in Kotzebue.
- **SKW / Eskimos, Inc.** operates as a fuel purchaser for its own account and functions as the bulk fuel purchase coordinator for the North Slope Borough in communities from Point Hope to Kaktovik.
- **The Red Dog Mine** is also a substantial fuel purchaser in Western Alaska, accounting for about 11 to 12 million gallons annually. Proposed expansion of the mine could increase fuel consumption to 17 to 18 million gallons per year. (Northern Economics, 1998).

The balance of fuel consumption consists of independent purchases by various cities and village corporations, small retail establishments, aviators, tour guide companies, and construction companies

**Analysis.** The total market for heating and diesel fuel in Western Alaska (west of 154° W latitude [sic] and all of the Arctic Slope, excluding military and oil and gas operations on the North Slope) is about 160 to 185 million gallons a year. Of this amount, the fishing industry (processing plants and fishing fleets at Unalaska / Dutch Harbor, and other processing plants and vessels elsewhere on the

Alaska Peninsula and Aleutian Chain) accounts for about 90 million gallons. Of the remaining 75 to 95 million gallons, very little is not bought under a cooperative or organized group purchase (Dwight, 2000).

The organizations listed above serve a number of communities in Western Alaska. Communities in much of Interior and Southeast Alaska do not belong to organizations that consolidate fuel purchases. It may be that many communities in these regions could benefit from consolidated fuel purchases.

Refineries in Alaska do not offer volume discounts to buyers (Boltz, 2000; Noel, 2000; Payne, 2000). Fuel distributors are the entities that offer volume discounts to purchasers in rural Alaska. The breakpoints for lower prices vary by distributor. Table 3-1 shows a typical discount program for fuel sales in Western Alaska.

Discounts of about 15 percent are available for purchases of more than 100,000 gallons, as compared to purchases of less than 5,000 gallons (Dwight, 2000). Further price reductions for purchases greater than 100,000 gallons result from competition among distributors for market share. According to Yukon Fuels, distributors evaluate the potential transportation cost to the location or locations that must be served and prepare bids based on risk and expected transportation costs (Tagliavento, 2000). There are no set breakpoints at these higher volumes. The price reductions for fuel purchases greater than 100,000 gallons are typically only a few cents per gallon (Dwight, 2000).

**Table 3-1. Typical Discount Program for Fuel Sales in Western Alaska**

<u>Volume Purchased (No. of Gallons)</u>	<u>Approximate Discount (Percent Reduction from Price for Minimum Volume)</u>
(Minimum Volume) 5,000	Not Applicable
20,000	5
50,000	10
100,000	15
More than 100,000	Negotiable, but may be additional 2 to 4 percent

An electric utility that consumes 20,000 gallons of diesel in a year could save about \$2,000 per year if it could obtain savings of 10 cents per gallon by consolidating its purchasing with other organizations to exceed to the 100,000 gallon threshold. Assuming an average diesel generating efficiency of 12 kWh per gallon for communities with this level of fuel consumption, the savings of 10 cents per gallon from consolidated fuel purchasing would result in savings of about 0.8 cent (\$0.008) per kWh; lower generating efficiency would reduce this savings. A utility that consumes 100,000 gallons could save \$2,000 to \$4,000 if its purchase was consolidated with purchases by other organizations to obtain further price reductions because of larger volumes. Assuming an average diesel

generating efficiency of 14 kWh per gallon for communities with this level of fuel consumption, potential savings of 3 cents per gallon (\$3,000 divided by 100,000 gallons) results in savings of about 0.2 cents (\$0.002) per kWh.

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Administrative costs charged by fuel consolidators, or membership fees for cooperatives, can reduce potential savings. For example, WAVE Fuels charges about 10 cents per gallon for purchases of 5,000 gallons and about 5 cents per gallon for purchases of 400,000 gallons or more (Hess, 2,000). Members reportedly have paid \$200,000 in fees to join the cooperative, but that fee can be amortized over a wide range of goods that WAVE provides, including fuel. A WAVE member purchasing 5,000 gallons could save about 7 to 9 cents per gallon over the cost of purchasing directly from another supplier, if membership fees are ignored.\* However, a customer that purchases more than 100,000 gallons may pay more if it purchases fuel through WAVE because the administrative charge may be greater than the potential savings that WAVE could provide, compared to purchasing from another supplier.\*\*

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\* Assumes a base fuel price of \$1 per gallon, minus 17 to 19 cents per gallon savings for the consolidated fuel purchase by WAVE, plus 10 cents per gallon for WAVE's administrative charge.

\*\* Assuming a base fuel price of \$1.00 per gallon, WAVE can provide a discount of 17 to 19 cents per gallon plus the administrative charge of 5 cents per gallon, for a net discount of 12 to 14 cents per gallon for a very small customer. A large purchaser could obtain a discount of 15 cents per gallon by buying directly from another supplier.

## ATTACHMENT 3

Handbook Entitled "Cooperative Purchasing: A Way to Save When Buying Fuel for Rural Communities," Alaska Department of Community and Regional Affairs, September 1989.