Alaska Permanent Fund Corporation
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February 24, 2016

Senator Anna MacKinnon
Alaska State Capitol Room 516

Dear Senator MacKinnon,

On February 19th at a special meeting of the Corporation's Board of Trustees, Greg Allen from Callan Associates presented the results of his modeling of the three plans under consideration by the Legislature for use of the Permanent Fund for government operations. Following that presentation, I received a formal request from you to have Callan model the results of SB128 without the deposit of $3 billion into the earnings reserve of the Permanent Fund from the Constitutional Budget Reserve.

My request to Callan was to remove the $3 billion deposit and determine the maximum draw that would be possible while maintaining the current market value of the fund in real dollars.

The results of Callan's analysis is attached, as well as the underlying assumptions; however, the short answer is that under these parameters, the maximum draw would be $2.95 billion through FY19, with optional inflation adjustments thereafter.

Please let me know if we can be of further assistance.

Sincerely,

Angela M Rodell

Angela Rodell
Executive Director

Principal	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
Deposits	30% royalties	25% royalties	25% royalties	25% royalties	30% royalties
Additional appropriations to Principal	Change in inflation rate applied to principal balance at end of year	ER balance in excess target (target = 4 X distribution)	ER balance in excess target (target = 4 X distribution)		

Earnings Reserve					
Income	Statutory Net Income	Statutory Net Income	Statutory Net Income	Statutory Net Income	Statutory Net Income
Deposits		$3b from CBR in FY17, 74.5% royalties, 100% production taxes	74.5% royalties, 100% production taxes		
FY 2016 Dividend Distribution	Status Quo	Amount necessary to pay $1,000 dividend	Amount necessary to pay $1,000 dividend	Paid from distribution to government fund	Status Quo
Distributions	Half of 21% of five-year total statutory net income	$3.3b through FY19, optional inflation adjustment thereafter, plus 50% of royalties	$2.95b through FY19, optional inflation adjustment thereafter, plus 50% of royalties	5% of lagged five-year average market value	4.5% of lagged five-year average market value
Limitation on Total Distribution	Earnings Reserve Balance	Earnings Reserve Balance	Earnings Reserve Balance	Earnings Reserve Balance	Earnings Reserve Balance
Timing of Draw	End of July	Throughout year	Throughout year	Throughout year	Throughout year (simplifying assumption)

Annual Net Flow	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	($1,085,421)	($1,085,421)	($1,085,421)	($1,085,421)	($1,085,421)
2017	($993,470)	$320,311	($2,330,831)	($2,021,250)	($3,057,753)
2018	($987,701)	($2,365,878)	($2,017,020)	($2,101,211)	($1,788,596)
2019	($881,338)	($2,312,113)	($1,963,255)	($2,174,939)	($1,840,157)
2020	($785,906)	($2,479,395)	($2,122,688)	($2,250,502)	($1,906,316)
2021	($769,829)	($2,497,228)	($2,132,494)	($2,260,987)	($1,912,331)
2022	($942,269)	($2,657,545)	($2,284,605)	($2,288,950)	($1,942,918)
2023	($1,129,630)	($2,799,275)	($2,417,944)	($2,352,541)	($2,021,346)
2024	($1,311,849)	($2,897,989)	($2,508,078)	($2,440,300)	($2,119,682)
2025	($1,494,989)	($3,003,193)	($2,604,509)	($2,533,627)	($2,223,884)
5-Year Total	($4,733,836)	($7,922,497)	($9,519,215)	($9,633,323)	($9,678,244)
10-Year Total	($10,382,402)	($21,777,727)	($21,466,845)	($21,509,728)	($19,898,405)

Annual In-Flow	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$287,681	$287,681	$287,681	$287,681	$287,681
2017	$326,878	$4,271,962	$1,271,962	$272,399	$326,878
2018	$362,445	$1,478,919	$1,478,919	$302,037	$362,445
2019	$390,649	$1,591,961	$1,591,961	$325,541	$390,649
2020	$376,986	$1,545,936	$1,545,936	$314,155	$376,986
2021	$380,751	$1,581,253	$1,581,253	$317,292	$380,751
2022	$361,130	$1,504,839	$1,504,839	$300,942	$361,130
2023	$338,612	$1,409,783	$1,409,783	$282,176	$338,612
2024	$320,244	$1,354,701	$1,354,701	$266,870	$320,244
2025	$301,859	$1,301,872	$1,301,872	$251,549	$301,859
5-Year Total	$1,744,639	$9,176,458	$6,176,458	$1,501,812	$1,744,639
10-Year Total	$3,447,235	$16,328,906	$13,328,906	$2,920,643	$3,447,235

Annual Out-Flow	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	($1,373,102)	($1,373,102)	($1,373,102)	($1,373,102)	($1,373,102)
2017	($1,320,348)	($3,951,651)	($3,602,793)	($2,293,649)	($3,384,632)
2018	($1,350,146)	($3,844,797)	($3,495,939)	($2,403,248)	($2,151,040)
2019	($1,271,987)	($3,904,074)	($3,555,216)	($2,500,479)	($2,230,806)
2020	($1,162,892)	($4,025,331)	($3,668,624)	($2,564,657)	($2,283,303)
2021	($1,150,580)	($4,078,481)	($3,713,748)	($2,578,279)	($2,293,082)
2022	($1,303,399)	($4,162,384)	($3,789,444)	($2,589,892)	($2,304,049)
2023	($1,468,242)	($4,209,059)	($3,827,728)	($2,634,717)	($2,359,957)
2024	($1,632,093)	($4,252,689)	($3,862,778)	($2,707,171)	($2,439,926)
2025	($1,796,848)	($4,305,064)	($3,906,380)	($2,785,176)	($2,525,743)
5-Year Total	($6,478,475)	($17,098,956)	($15,695,673)	($11,135,135)	($11,422,883)
10-Year Total	($13,829,637)	($38,106,633)	($34,795,751)	($24,430,371)	($23,345,640)

Ending Market Value	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$49,779,818	$50,448,515	$50,448,515	$51,100,166	$49,779,818
2017	$52,058,624	$50,936,833	$48,526,348	$50,056,176	$49,195,952
2018	$54,681,107	$52,085,079	$49,852,812	$51,271,142	$50,686,290
2019	$57,685,700	$53,450,183	$51,405,136	$52,575,910	$52,300,295
2020	$60,951,504	$54,789,750	$52,958,520	$53,985,825	$54,043,067
2021	$64,344,989	$56,223,415	$54,627,234	$55,582,687	$55,991,880
2022	$67,835,357	$57,670,650	$56,333,097	$57,301,502	$58,081,360
2023	$71,421,810	$59,108,139	$58,055,176	$59,071,674	$60,221,525
2024	$75,109,444	$60,562,150	$59,822,184	$60,874,040	$62,413,976
2025	$78,899,520	$62,029,731	$61,633,699	$62,724,663	$64,671,927

Real Ending Market Value[1]	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$48,684,419	$49,338,401	$49,338,401	$49,975,712	$48,684,419
2017	$49,792,743	$48,719,778	$46,414,211	$47,877,452	$47,054,671
2018	$51,150,202	$48,721,806	$46,633,683	$47,960,427	$47,413,340
2019	$52,773,379	$48,898,545	$47,027,647	$48,098,722	$47,846,577
2020	$54,534,061	$49,021,064	$47,382,640	$48,301,783	$48,352,997
2021	$56,303,427	$49,196,853	$47,800,156	$48,636,200	$48,994,254
2022	$58,051,427	$49,352,781	$48,208,144	$49,036,875	$49,704,254
2023	$59,775,651	$49,469,868	$48,588,603	$49,439,349	$50,401,704
2024	$61,478,703	$49,571,428	$48,965,751	$49,826,717	$51,087,188
2025	$63,159,865	$49,655,428	$49,338,401	$50,211,728	$51,770,533

1. Market value adjusted to 6/30/2015 dollars using cumulative inflation.

Earnings Reserve Balance	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$6,959,529	$7,675,889	$7,675,889	$8,372,689	$6,959,529
2017	$6,718,111	$9,448,636	$6,827,056	$7,809,255	$6,732,509
2018	$6,864,085	$9,249,035	$6,798,347	$7,778,167	$6,881,606
2019	$7,436,381	$9,354,922	$7,084,618	$7,923,350	$7,236,833
2020	$8,333,884	$9,631,001	$7,563,990	$8,271,251	$7,823,533
2021	$9,382,703	$10,097,375	$8,254,153	$8,860,503	$8,675,478
2022	$10,590,569	$10,697,490	$9,101,251	$9,679,641	$9,782,573
2023	$11,955,181	$11,396,084	$10,072,049	$10,680,627	$11,085,358
2024	$13,469,537	$12,201,325	$11,177,085	$11,824,863	$12,552,057
2025	$15,127,032	$13,100,946	$12,406,617	$13,099,813	$14,170,559

Additions to Reserved Principal	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$334,679	$334,679	$334,679	$334,679	$334,679
2017	$1,215,619	$272,399	$272,399	$272,399	$326,878
2018	$1,278,538	$302,037	$302,037	$302,037	$362,445
2019	$1,335,509	$325,541	$325,541	$325,541	$390,649
2020	$1,351,895	$314,155	$314,155	$314,155	$376,986
2021	$1,386,078	$317,292	$317,292	$317,292	$380,751
2022	$1,397,643	$300,942	$300,942	$300,942	$361,130
2023	$1,406,572	$282,176	$282,176	$282,176	$338,612
2024	$1,419,852	$266,870	$266,870	$266,870	$320,244
2025	$1,433,414	$251,549	$251,549	$251,549	$301,859
5-Year Total	$5,516,240	$1,548,810		$1,548,810	$1,791,637
10-Year Total	$12,559,799	$2,967,641		$2,967,641	$3,494,233

Statutory Net Income	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$1,640,654	$1,640,654	$1,640,654	$1,640,654	$1,640,654
2017	$1,851,846	$1,814,501	$1,919,375	$1,905,251	$1,958,885
2018	$2,183,460	$2,322,078	$2,194,550	$2,218,210	$2,150,197
2019	$2,491,876	$2,602,864	$2,465,926	$2,502,428	$2,433,983
2020	$2,790,066	$2,882,919	$2,740,254	$2,762,412	$2,699,221
2021	$3,096,080	$3,119,814	$2,975,318	$2,993,061	$2,939,617
2022	$3,421,778	$3,356,539	$3,213,937	$3,209,829	$3,170,560
2023	$3,743,941	$3,570,726	$3,433,352	$3,418,426	$3,398,000
2024	$4,060,974	$3,761,140	$3,632,103	$3,619,057	$3,619,035
2025	$4,374,378	$3,938,838	$3,821,099	$3,810,449	$3,832,926
5-Year Total	$10,957,903	$11,263,018	$10,960,760	$11,028,955	$10,882,941
10-Year Total	$29,655,054	$29,010,075	$28,036,569	$28,079,779	$27,843,079

Net Additions to Earnings Reserve	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$273,308	$942,006	$942,006	$1,593,656	$273,308
2017	($387,041)	$1,969,267	($577,001)	($388,397)	($105,399)
2018	($4,620)	($405,114)	($183,784)	($185,039)	($843)
2019	$384,124	($81,797)	$130,123	$1,949	$203,177
2020	$664,577	$112,140	$326,182	$197,755	$415,918
2021	$787,364	$299,020	$519,257	$414,782	$646,535
2022	$917,023	$430,753	$661,090	$619,937	$866,512
2023	$1,043,888	$526,805	$770,762	$783,709	$1,038,043
2024	$1,164,518	$626,894	$887,768	$911,887	$1,179,109
2025	$1,279,622	$714,738	$995,683	$1,025,273	$1,307,183
5-Year Total	$930,349	$2,536,501	$637,526	$1,219,924	$786,162
10-Year Total	$6,122,754	$5,134,710	$4,472,086	$4,975,511	$5,823,543

Additions to Earnings Reserve	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	$1,640,654	$1,640,654	$1,640,654	$1,640,654	$1,640,654
2017	$1,851,846	$5,814,065	$2,918,938	$1,905,251	$1,958,885
2018	$2,183,460	$3,498,960	$3,371,432	$2,218,210	$2,150,197
2019	$2,491,876	$3,869,284	$3,732,346	$2,502,428	$2,433,983
2020	$2,790,066	$4,114,700	$3,972,035	$2,762,412	$2,699,221
2021	$3,096,080	$4,383,775	$4,239,279	$2,993,061	$2,939,617
2022	$3,421,778	$4,560,436	$4,417,833	$3,209,829	$3,170,560
2023	$3,743,941	$4,698,333	$4,560,959	$3,418,426	$3,398,000
2024	$4,060,974	$4,848,970	$4,719,934	$3,619,057	$3,619,035
2025	$4,374,378	$4,989,160	$4,871,422	$3,810,449	$3,832,926
5-Year Total	$10,957,903	$18,937,664	$15,635,406	$11,028,955	$10,882,941
10-Year Total	$29,655,054	$42,418,339	$38,444,832	$28,079,779	$27,843,079

Subtractions from Earnings Reserve	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
2016	($1,367,346)	($698,649)	($698,649)	($46,998)	($1,367,346)
2017	($2,238,887)	($3,844,797)	($3,495,939)	($2,293,649)	($2,064,284)
2018	($2,188,080)	($3,904,074)	($3,555,216)	($2,403,248)	($2,151,040)
2019	($2,107,752)	($3,951,081)	($3,602,223)	($2,500,479)	($2,230,806)
2020	($2,125,489)	($4,002,561)	($3,645,853)	($2,564,657)	($2,283,303)
2021	($2,308,726)	($4,084,755)	($3,720,021)	($2,578,279)	($2,293,082)
2022	($2,504,755)	($4,129,683)	($3,756,743)	($2,589,892)	($2,304,049)
2023	($2,700,053)	($4,171,528)	($3,790,197)	($2,634,717)	($2,359,957)
2024	($2,896,456)	($4,222,077)	($3,832,166)	($2,707,171)	($2,439,926)
2025	($3,094,756)	($4,274,423)	($3,875,739)	($2,785,176)	($2,525,743)
5-Year Total	($10,027,554)	($16,401,162)	($14,997,880)	($9,809,031)	($10,096,779)
10-Year Total	($23,532,300)	($37,283,628)	($33,972,746)	($23,104,267)	($22,019,536)

Real Ending Market Value	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
5th Percentile	$106,683,281	$110,017,638	$107,761,821	$100,950,717	$103,068,088
25th Percentile	$77,514,675	$69,962,189	$69,125,227	$67,325,268	$68,935,153
Median	$61,660,630	$50,850,570	$51,049,070	$51,381,837	$52,934,652
75th Percentile	$47,916,210	$37,771,110	$37,820,604	$38,617,291	$39,758,086
95th Percentile	$35,168,091	$28,165,335	$28,108,328	$28,500,577	$29,374,679

Cumulative 10-Year Distributions	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
5th Percentile	$29,105,713	$39,113,299	$35,526,872	$30,452,479	$28,938,068
25th Percentile	$19,753,057	$37,355,976	$33,927,393	$25,811,075	$24,542,904
Median	$14,487,974	$35,943,879	$32,636,437	$23,103,842	$22,087,194
75th Percentile	$9,762,045	$33,756,625	$30,167,729	$19,815,913	$19,068,897
95th Percentile	$4,431,591	$22,541,113	$19,496,618	$9,798,988	$9,665,374

Probability of Hitting an ER Limit	Status Quo	SB128/HB245	SB128 no CBR	SB114/HB303	HB224
Percent Probability	**25%**	**30%**	**35%**	**25%**	**25%**