

COMMITTEE REPORT
HOUSE

FURTHER:

(11)

2/1/84

Date: 2-8-84

The Committee on FINANCE has had HB 524

"An Act relating to the constitutional spending limit; and providing for an effectivedate."

under consideration and recommends:

- do pass do not pass
- do pass with attached amendments(s)
- replace with CS for HR 524 (re worded) same title
- new title
- and recommends do pass
- AND attaches a "Letter of Intent" New Fiscal Note
- Zero Fiscal Note Attached
- reports it back without recommendation
- referred to the _____ Committee

MEMBERS SIGNING
DO PASS

[Signature]
[Signature]
[Signature]
[Signature]
[Signature]
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[Signature]
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[Signature]

MEMBERS HAVING
OTHER RECOMMENDATIONS:

[Signature]

[Signature]
CHAIRMAN

Original sponsors: Adame, Ward
and Uehling

1 IN THE HOUSE

BY THE FINANCE COMMITTEE

2 CS FOR HOUSE BILL NO. 524 (Finance)

3 IN THE LEGISLATURE OF THE STATE OF ALASKA

4 THIRTEENTH LEGISLATURE - SECOND SESSION

5 A BILL

6 For an Act entitled: "An Act relating to the constitutional spending
7 limit; and providing for an effective date."

8 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

9 * Section 1. AS 37.07 is amended by adding a new section to read:

10 Sec. 37.07.075. ADJUSTMENT OF APPROPRIATION LIMIT BASE. (a)

11 The appropriation limit of \$2,500,000,000 established by art. IX, sec.
12 16 of the state constitution shall be cumulatively adjusted annually
13 through the end of the preceding fiscal year by the office by the
14 product of the following rates:

15 (1) the percentage annual rate of change, during the fiscal
16 year two years preceding each fiscal year, in the consumer price index
17 for all urban consumers for the Anchorage Metropolitan Area as
18 published by the Bureau of Labor Statistics of the United States
19 Department of Labor; and

20 (2) the percentage continuously compounded annual rate of
21 change in estimated population as established by the United States
22 Census Bureau for the period between the previous two decennial cen-
23 suses.

24 (b) The base date for determining changes in population and
25 inflation under (a) of this section is July 1, 1981.

26 (c) In this section "population" means total resident population
27 of the state computed under the method of computation used in the most
28 recent federal decennial census.

29 * Sec. 2. This Act takes effect immediately in accordance with

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AS 01.10.070(c).

STATE OF ALASKA 1984 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date: _____

REQUEST

Bill/Resolution No. HR524
 Title: An Act Relating to the Constitutional Spending Limit
 Sponsor: Adams, Ward & Nehling
 Requestor: _____
 Date of Request: _____

FISCAL DETAIL

Agency Affected: Office of the Governor
 Program Category Affected: Management & Budget
 BRU, Program or Subprogram(s) Affected: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89
OPERATING						
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 SUPPLIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS						
800 MISCELLANEOUS						
TOTAL OPERATING		-0-				
CAPITAL		-0-				
REVENUE		-0-				

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL		-0-				

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

This Bill will not result in increased revenues or expenditures.

ANALYSIS: Attach a separate page for analysis

Prepared By: Rep. Al Adams *ARA* Phone: 465-3706
 Division: _____ Date: 1/27/84

Approved by Commissioner: _____ Date: _____
 Agency: _____

Distribution (by Agency preparing fiscal note):

Legislative Finance
 Legislative Sponsor
 Requestor
 Office of Management and Budget
 Impacted Agency(ies)

12/1/83

HOUSE JOURNAL

LETTER OF INTENT FOR CSHB 524 (FINANCE)

It is the intent of the Legislature that for the purposes of calculating the spending limit in HB 524 the following equation be used:

Base x (1 + rate of growth in population) x (1 + inflation adjustment) = Limit

The base is \$2,500,000 for fiscal year 1982. For each succeeding fiscal year the base shall be adjusted by the rate of change in population and the Anchorage Consumer Price Index-Urban (CPI-U).

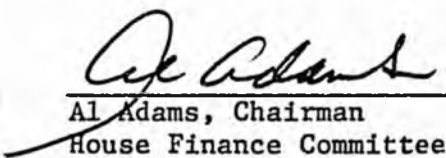
The rate of change in population shall be calculated as the continuously compounded annual rate of change between 1970 and 1980 (April 1) estimates of population established by the U.S. Census Bureau in their decennial censuses. For example, the rate of change for the 1980's is computed as follows:

$$\text{Population}_{1980} = \text{Population}_{1970} \cdot e^{rt}$$

$$\text{Rate of change} = r = \frac{\text{Ln}(\text{population}_{1980} / \text{population}_{1970})}{t}$$

$$\text{Rate of change} = .0284 = \frac{\text{Ln}(401851/302583)}{10}$$

The rate of change in the Anchorage CPI-U computed as the July to July change in the index as published in the U.S. Department of Labor, Bureau of Labor Statistics.


Al Adams, Chairman
House Finance Committee

Alaska State Legislature
House of Representatives

Al Adams
Chairman
Committee on Finance

WHILE IN SESSION
Pouch V
State Capitol
Juneau, Alaska 99811
(907) 465-3706

OUT OF SESSION
P.O. Box 333
Kotzebue, Alaska 99752
(907) 442-3320
1024 W. 6th
Anchorage, Alaska 99501
(907) 274-0615



Official Business

February 6, 1984

TO: Members of the House Finance Committee
FROM: Representative Al Adams *AA*
RE: Proposed Letter of Intent for CSHB 524 (Fin)

LETTER OF INTENT CSHB 524 (Fin)

It is the intent of the Legislature that for the purposes of calculating the spending limit in HB 524 the following equation be used:

Base x (1 + rate of growth in population) x (1 + inflation adjustment) = Limit

The base is \$2,500,000 for fiscal year 1982. For each succeeding fiscal year the base shall be adjusted by the rate of change in population and the Anchorage Consumer Price Index-Urban (CPI-U).

The rate of change in population shall be calculated as the continuously compounded annual rate of change between 1970 and 1980 (April 1) estimates of population established by the U.S. Census Bureau in their decennial censuses. For example, the rate of change for the 1980's is computed as follows:

$$\text{Population}_{1980} = \text{Population}_{1970} \cdot e^{rt}$$

$$\text{Rate of change} = r = \frac{\ln(\text{population}_{1980}/\text{population}_{1970})}{t}, \text{ or}$$

$$\text{Rate of change} = .0284 = \frac{\ln(401851/302583)}{10}$$

The rate of change in the Anchorage CPI-U computed as the July to July change in the index as published in the U.S. Department of Labor, Bureau of Labor Statistics.

STATE OF ALASKA

THE LEGISLATURE

BUDGET AND AUDIT COMMITTEE

FINANCE DIVISION
POUCH WF-STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3795

MEMORANDUM

DATE: January 26, 1984

TO: Honorable Al Adams, Chairman
House Finance Committee

FROM: P.S. Dhillon, Economist PSD
Legislative Finance Division

SUBJ: HB 524 -- Constitutional Appropriation Limit

Article IX, Section 16 of the State's Constitution reads, in part, as follows: ". . . appropriations from the treasury made for a fiscal year shall not exceed \$2,500,000 by more than the cumulative change, derived from federal indices as prescribed by law, in population and inflation since July 1, 1981." As required by this constitutional amendment, the purpose of HB 524 is to prescribe the federal indices to be used for population and inflation adjustments. In addition, HB 524 also clarifies three other ambiguities relating to the calculation of the appropriations limit:

1. Number of years of adjustment. It is not clear from the language of the amendment whether the population and inflation adjustments are to be made to the beginning or the end of the fiscal year to which the limit applies. For example, in order to calculate the limit for FY 85, is there to be a three year or a four year adjustment? This ambiguity arises because it is not clear whether \$2.5 billion was intended to be the limit for FY 82, or, whether it was the base to which population and inflation adjustments were to be made to arrive at the limit for FY 82. HB 524 assumes the former interpretation and stipulates (line 13) that the adjustments should be made to the beginning of the fiscal year (or end of preceding fiscal year).
2. Additive or Multiplicative adjustments. The application of the adjustments to the base could be either additive or multiplicative:

Additive: $\text{Limit} = \text{Base} \times (\text{population adj.} + \text{inflation adj.})$

Multiplicative: $\text{Limit} = \text{Base} \times (\text{population adj.} \times \text{inflation adj.})$

The language in the constitutional amendment does not address this question. HB 524 specifies (line 13-14) that the additive formula be used. On the other hand, O.M.B. has used the multiplicative equation in their calculations (FY 85 Executive Budget, page 11).

The additive formula will always result in a lower limit when both population growth and inflation are positive. In the long run there may be a substantial difference between the limits calculated under the two formulae.

3. Absence of data. The two indices prescribed by HB 524 are known six months prior to the time the Executive Budget comes up for consideration each January. This avoids the use of projections which are frequently subject to debate, disagreement, and possible revisions.

The two indices prescribed by HB 524 are the Anchorage CPI-U, and the trend between the two previous decennial censuses. Aside from being "federal indices" as required by the constitutional amendment, there appears to be a relatively high degree of public familiarity with them. The following is a discussion of the relative merits and demerits of these and alternative indices which have received consideration.

Inflation Indices

For inflation indices the field can be narrowed down to two: the Anchorage CPI-U which is released bi-monthly by the U. S. Department of Labor, Bureau of Labor Statistics; and, Implicit Price Deflators for the State and Local Government Purchases of Goods and Services (Gov't. Purchases), published in the Survey of Current Business, U. S. Department of Commerce, Bureau of Economic Analysis. In comparing these two indices the following should be noted:

1. Public familiarity with, and understanding of, the Anchorage CPI-U is far greater than with the Gov't. Purchases index. It is safe to say that public perception of inflation is more closely linked with the CPI than with any other index. On the other hand, the use of an unfamiliar and relatively unknown index may raise questions about public credibility and perceived manipulation.
2. The Gov't. Purchases index is a nationwide index based on purchases of goods and services by state and local governments in the entire country. The weight afforded to Alaska in the construction such an index is likely to be very small compared to, say, California. Consequently, trends and events in Alaska are not likely to be fully captured by this index. The Anchorage CPI-U would tend to be more responsive to local business and economic conditions. The bush and other cities in the State are not taken into account in the Anchorage CPI-U, but there is at least a partial recognition of the fact that the social, economic and business environment in Alaska is significantly different from that in the Lower 48.
3. There is a precedence for the use of the Anchorage CPI-U in Alaska's Statutes (e.g., Alaska Exemptions Act, AS 9.38.115; Alaska Business Corporations Act, AS 10.05.773) and in labor contracts within the State. The national CPI-U is also extensively used at the federal level (e.g., the Economic Recovery Tax Act of 1981 requires use of the CPI-U for escalation of income tax brackets and personal exemption amounts). It is not known whether the Gov't.

Purchases index has been previously used in state or federal laws or in contracting.

4. The CPI measures the price of a bundle of goods which a typical consumer buys in the market. This is not the same mix of goods and services that government spending is aimed at. The Gov't. Purchases index would more accurately reflect price changes for items typically purchased by state and local governments. However, to the extent that government compensation of employees is linked to the CPI, the Gov't. Purchases index does indirectly incorporate elements of the CPI¹. For items other than employee compensation, it may be argued that the expenditures incurred by the state and local governments in Alaska are somewhat different from those in the Lower 48, e.g., we do not have the massive rapid transit systems of New York or Chicago, or the water projects of Southern California. The use of a nationwide Gov't. Purchases index may thus be inappropriate.
5. In January 1983 there was a change in the methodology used by the Bureau of Labor Statistics in measuring the homeownership component of the CPI-U at both the national and regional level. The result of this change was to make the Anchorage CPI-U a more accurate measure of inflation. However, due to this change in methodology, the Anchorage CPI-U index in 1982 is not, strictly speaking, comparable with the index in 1983. It is not possible to isolate or quantify the effect of the change in definition; however, it may be noted that the Anchorage CPI-W (Urban Wage Earners and Clerical Workers), which did not undergo a change in definition, moved in the same manner (direction and magnitude) as the Anchorage CPI-U during 1982 and 1983. This suggests that the effect of the definitional change in the Anchorage CPI-U was not very significant.
6. Point-to-point changes in the index can be more readily calculated with the Anchorage CPI-U than with the Gov't. Purchases index. This is because the Anchorage CPI-U is a point estimate for a particular month. The Gov't. Purchases index, on the other hand, is a quarterly index and it is difficult to determine its level during a specific month.
7. The Anchorage CPI-U is generally not subject to revision. The Gov't. Purchases index is first published as a preliminary index and subsequently revised.

Population Indices

There are three population indices that could be used in calculating the appropriations limit: the trend in population for the period between the two previous decennial censuses; the annual estimate of population produced by the U.S. Bureau of the Census; and, annual estimates of population produced by the Alaska Department of Labor (ADOL).

The major advantage of using the trend between two decennial censuses is that the population adjustment would be known ahead of time for an

entire decade and, hence, facilitate better² budgeting and planning. The trend is also easy to derive and understand². The census numbers themselves are likely to be accurate³ (the censuses are enumerations rather than estimates) and objective (the censuses are constitutionally mandated). However, the trend is a poor predictor of short term fluctuations in population. For example, the yearly population growth rate between the 1970 and 1980 censuses is about half of the growth rate in the period 1981 and 1982 as estimated by ADOL. The trend between the censuses is a much better⁴ predictor for long run population changes. For example, the trend⁴ between the 1960 and 1970 censuses is 2.91%, while between the 1970 and 1980 censuses it is 2.84%.

The annual population estimates provided by the U.S. Bureau of the Census and by ADOL are both better estimates of the population at any given time than the trend between the censuses. In other words, both these estimates are more responsive to short-term demographic fluctuations. However, the annual estimates are subject to revisions which raises the issue of whether or not the appropriations limit must then be revised. The annual estimates of the U.S. Bureau of Census are produced for the specific purpose of allocating funds under federal revenue sharing programs. Changes in, or elimination of, these programs may lead to changes in, or elimination of, the population estimates. Annual population estimates of ADOL, although certified by the federal government, may not meet the "federal indices" criteria required by the constitutional amendment. In addition, ADOL population estimates in the past have been erratic in both accuracy and schedule.

FOOTNOTES:

1. The weight of employee compensation in the Gov't. Purchases index is 58%; the remaining 42% is the weight for durables, non-durables, services and structures.
2. The trend may be calculated in three different ways. The continuously compounded rate of change is the most appropriate method because it recognizes that population is a continuously changing phenomenon. The other methods implicitly assume that population is constant for a year and then suddenly increases or decreases every January 1st.
3. It should be noted that there was widespread feeling amongst communities in Alaska and elsewhere that the 1980 federal census underestimated their population. However, appeals and/or court litigation has not so far resulted in a revision of any of the census numbers.
4. The continuously compounded rate of change.

AMENDMENT # 1

OFFERED IN THE HOUSE:

By: JUDICIARY

To: _____ HOUSE BILL No. 524

SENATE BILL No. _____

PAGE: 1

LINE: 13

DELETE: ~~sum~~

INSERT: product

MEMORANDUM

State of Alaska

TO: Gordon S. Harrison
Associate Director

DATE: February 4, 1984

FILE NO: 84B-3

TELEPHONE NO: 465-3568

FROM: Thomas P. Chester ^{TC}
Principal Analyst

SUBJECT: Spending Limit/HB 524:
Amended

Adoption of HB 524 will result in the following spending limits:

<u>Fiscal Year</u>	<u>Limit</u> ^{a/}	=	<u>Prior Limit</u>	X	(<u>R1</u> ^{b/}	X	<u>R2</u> ^{c/})
82	\$2,500						
83	2,770	=	\$2,500	X	(1 + .02837)	X	(1 + .07750)
84	3,051	=	2,700	X	(1 + .02837)	X	(1 + .07111)
85	3,164	=	3,051	X	(1 + .02837)	X	(1 + .00835)

^{a/} Rounded to nearest million.
^{b/} Rate of population change.
^{c/} Rate of inflation.

Estimation of rate of population change (lines 20 - 23).

$$.02837 = 1/10 \times \ln (401,851/302,583)$$

Estimation of rate of inflation (lines 15 - 19)

<u>Month</u>	<u>Year</u>	<u>CPI-U</u>	<u>Rate of Change</u>
July	80	228.4	-
July	81	246.1	(246.1/228.4) - 1 = .07750
July	82	263.6	(263.6/246.1) - 1 = .07111
July	83	265.8	(265.8/263.6) - 1 = .00835

mm

Attachment

cc: The Honorable Al Adams

STATE OF ALASKA

THE LEGISLATURE BUDGET AND AUDIT COMMITTEE

FINANCE DIVISION
POUCH WF--STATE CAPITOL
JUNEAU, ALASKA 99811
PHONE: (907) 465-3795

MEMORANDUM

TO: Honorable Al Adams, Chairman
House Finance Committee

FROM: P.S. Dhillon, Economist *PSD*
Legislative Finance Division

DATE: January 31, 1984

SUBJECT: CSHB 524 (Jud) - Constitutional Appropriation Limit

The amendment to HB 524 adopted by the House Judiciary Committee substitutes the word "product" for "sum" on line 13. As a result, the multiplicative formula must be used in calculating the limit instead of the additive formula. A comparison of the dollar impact of this change is as follows (in \$ millions):

	CSHB 524 Multiplicative ¹ (1)	HB 524 Additive ² (2)	Difference (1) - (2)
FY 82	2500.0	2500.0	0
FY 83	2770.3	2764.7	5.6
FY 84	3051.5	3039.8	11.7
FY 85	3154.2	3151.4	12.8

Assuming a 5.0 percent inflation adjustment and a 2.84 percent population adjustment for the period FY 86 through FY 90, the multiplicative formula results in a limit for FY 90 which is \$49.2 million higher than the additive formula.

MEMORANDUM

January 31, 1984

Re: CSHB 524 (Jud) - Constitutional Appropriation Limit

Page 2

¹The limit under CSHB 524, using the multiplicative formula, is calculated as follows:

FY 82 : 2500.0
FY 83 : 2770.3 = 2500.0 x (1+0.0284) x (1+0.0775)
FY 84 : 3051.5 = 2770.3 x (1+0.0284) x (1+0.0711)
FY 85 : 3164.2 = 3051.5 x (1+0.0284) x (1+0.0083)

²The limit under HB 524 using the additive formula is calculated as follows:

FY 82 : 2500.0
FY 83 : 2764.7 = 2500.0 x [(1+(0.0284 + 0.0775))]
FY 84 : 3039.8 = 2764.7 x [(1+(0.0284 + 0.0711))]
FY 85 : 3151.4 = 3039.8 x [(1+(0.0284 + 0.0083))]

NOTE: The population adjustment (2.84%) is the continuously compounded rate of change between the 1970 and 1980 decennial census population estimates. The inflation adjustment is the July to July change in the Anchorage CPI-U.

MEMORANDUM


State of Alaska

TO: John Shively, Chief of Staff
Office of the Governor

DATE: January 4, 1984

FILE NO: 84B-1

TELEPHONE NO: 465-3568

FROM: Gordon S. Harrison 
Associate Director
Office of Management and Budget

SUBJECT: Appropriation Limit

This memorandum discusses the complexities of interpreting the State's constitutional limit on appropriations (Article IX, Section 16). It recommends an explicit method of calculating the limit. This method would be used to calculate the limit for fiscal year 1985 and subsequent years as well, provided legislation is not enacted which specifies a different method. Dr. Tom Chester of this office has provided much of the background information in this memo, and he has made the actual mathematical computations.

The constitutional language that creates a problem of interpretation is "appropriations . . . shall not exceed \$2,500,000,000 by more than the cumulative change, derived from federal indices as prescribed by law, in population and inflation since July 1, 1981." The Legislature has not passed a law prescribing which Federal indices are to be used and how. Several major ambiguities, complications and issues stand in the way of an easy, straightforward interpretation of this language. These are discussed below, and a recommended approach to each of them is suggested.

Period of Adjustment to Base

The law states that the limit of \$2.5 billion is to be adjusted for the cumulative change in population and inflation since July 1, 1981. Does this mean that \$2.5 billion is the limit for fiscal year 1982 (July 1, 1981 - June 30, 1982) or that it is the base for calculating the limit for FY 82? In other words, should the adjustment for population and inflation be made to the beginning of the fiscal year to which it applies, or through the end of it? The longer the period of time for which adjustments are made, the higher the allowable appropriations will be in future years.

The intent of the limit is to permit per capita spending levels to remain constant over time. In my opinion the adjustment should include the year in which the spending is to take place, so the population growth and inflation that occurs during that year does not result in an actual decrease of government services in per capita terms. The only contrary argument I see is simply that making the adjustment through the end of the

fiscal year may give the appearance to some that the Governor and Legislature are manipulating the law to give them a higher, less restrictive limit. To avoid the appearance of any trickery in this sensitive matter, I suggest that the adjustment for population and inflation be made only to the beginning of the fiscal year.

Indices

The most complex question in interpreting the appropriation limitation language is which index of the many available should be used for making adjustments to the \$2.5 billion base for population and inflationary changes.

Population

Table 1 presents population information for Alaska. This information suggests three plausible measures of population growth that could be used for purposes of interpreting the spending limit: (1) the average annual population growth that occurred during the decade 1970-1980; (2) population change based on current estimates by the Alaska Department of Labor (ADOL); (3) population change based on current estimates by the U.S. Census Bureau (published by the Bureau of Economic Analysis [BEA]).

TABLE 1

Various Population Measures for Alaska

<u>Year</u>	<u>Population Census</u>	<u>Population Estimate</u>	
		<u>Alaska DOL (% change)</u>	<u>U.S. Census Bureau (% change)</u>
1970	308,500.0		
1980	419,700.0		
1981		435,000.0	416,000.0
1982		461,000.0 (5.98)	443,000.0 (6.49)
1983		N/A	N/A

The advantage of using the 1970-1980 annual rate of change¹ is that the numbers are based on the Federal decennial census and are not now subject to significant revision. Also, derivation of the number is simple and easy for people to understand. The disadvantage of this number, on the other hand, is that it may

not reflect actual population changes that are occurring in the 1980s. As a result, it may overstate or understate current growth.

The Alaska Department of Labor, Research and Analysis Section, makes population estimates of Alaska for purposes of Federal programs. The estimates are derived from methods approved by the U.S. Census Bureau, which certifies the State numbers. Because of this link with U.S. standards and estimating methodology, I believe the State estimates of population change could satisfy the constitutional requirement that the adjustment factors be "derived from federal indices." However, recent departmental changes have undermined the ability of the State to make timely and accurate population estimates. The professional demographer employed by the Department of Labor recently resigned, and no replacement has been hired at this time. Also, a reorganization within the Department of Health and Social Services has reduced the ability of the Department to make vital statistics available in a timely fashion to the Department of Labor. These statistics are necessary for estimating the natural increase component of population growth. As a result of this situation, and because we would need to stretch somewhat the phrase "federal indices" to use the State population estimates, I suggest that Federally-published estimates of population change be used.

Federal population estimates for 1981 and 1982 are shown in Table 1. While the Federal estimates are lower than the State estimates, and presumably less accurate, the Federal rate of change between 1981 and 1982 is somewhat higher. For purposes of calculating an appropriation limit, changes between July 1 and July 1 of each year should be used.

Inflation

Several different indices of inflation could plausibly be used for calculating the constitutional limit for a particular fiscal year. Most commonly discussed are the Federal consumer price indices. Currently the Bureau of Labor Statistics (BLS), U.S. Department of Labor, produces two basic consumer price indices: the All Urban Consumers (CPI-U) and the Urban Wage Earners and Clerical Workers (CPI-W). CPI-U is a more inclusive definition. CPI-W primarily measures changes in prices of goods typically purchased by urban workers while CPI-U measures changes in price of items typically bought by all urban dwellers irrespective of their attachment to the labor force. CPI-U covers approximately twice as many persons and in general produces an inflation rate higher than that for CPI-W.

BLS produces an Anchorage CPI-U and CPI-W. While the cost of living in Anchorage is higher than the U.S. average, the CPI

indices are higher than the national CPI indices. However, the rate of change in cost of living (inflation) is lower in Anchorage than in the U.S. because economies of scale are being realized in the transportation and distribution of goods. It is not known to what extent the Anchorage CPI indices reflect statewide changes. Inflationary change may be slower in Anchorage than the U.S. average, but that may not be so in Juneau or the bush where many government services are provided.

One serious drawback to using the consumer price indices is a change made by the BIS in measuring the shelter component of these indices.² This change creates an inconsistency in the series from July 1, 1981 to the present, with the result that the published inflation rate takes a significant dip in 1983. The effect of this change is especially dramatic in the Anchorage consumer price indices³ because of a related change made in measuring housing costs.

The major problem with the CPI series for our purposes, however, is that it measures changes in the cost of a market basket of goods purchased by consumers, not of goods and services purchased by the State government.

There is a Federally-computed inflation index for the cost of services provided by state and local governments. The government purchase index is published monthly by the Bureau of Economic Analysis in a publication titled Current Business Trends. Even though this is a measure of price changes at the national level, the government purchase index seems to be the most logical for our purposes. I recommend that we adopt this index, using the annual point-to-point percentage change between July 1 and July 1 of each year.

Table 2 presents rates of change measured by the various indices. The low rates shown for the Anchorage CPI series in 1983 reflect the problem of definitional change discussed above.

TABLE 2Various Rates of Inflation

<u>Rate of Change</u>	<u>Fiscal Year</u>				
	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u> <u>198</u>
U.S.A.					
CPI-U	13.20	10.73	7.7	2.43	
CPI-W	13.47	10.25	6.29	2.19	
Government Purchase Index	9.77	5.70	6.81	6.34	
Anchorage					
CPI-U	10.10	7.75	7.11	.83*	
CPI-W	8.91	7.52	7.2	-.62	

* Due to change in definition of shelter component.

Estimating in the Absence of Data

Calculation of the appropriation limit requires a value for population and inflationary change that is not available at the time it is needed. Note in Table 1 that population estimates are not yet available for 1983. We actually need an estimate of population change for 6 months in the future (to July 1, 1984) to calculate an FY 85 limit. While the publication of inflation indices does not lag as much as the publication of population figures, the problem still exists. There are several options for obtaining the missing data; among them are the purchase of an estimate from a national economic forecasting firm, and the production of an estimate in-house by OMB with an econometric model. Our recommendation, however, is to simply use for the missing number the trend since July 1, 1981. That is, the average of the annual point-to-point changes since July 1, 1981 becomes the missing value. This approach has the advantage of not being subject to manipulation. To avoid the erosion of public credibility, it is important that the Governor and Legislature use a method which is easily understood and reproducible by everyone.

Revised Indices

Federal indices of population and inflation are subject to revision by the agency that issues them. This is because the figures they release are typically based on survey data, and

additional information invariably becomes available, or new benchmarks are used, or errors are discovered, etc. For purposes of computing the spending limit, the most current published estimate available should be used, and a mid-year adjustment in the spending limit should not be made even if revised indices are issued.

FY 84 Precedent

When the Sheffield Administration took office in December, 1982, former Governor Hammond's administration had prepared an executive budget for FY 84. This executive budget contained a spending limit calculation of \$2.98 billion. The only written explanation of this number is a footnote on page 3 of the Executive Budget Book that states "...according to the spending limit, the FY 84 budget ceiling could exceed the FY 82 figure of \$2.5 billion by the estimated rate of inflation and population growth. For FY 83 our estimate is 10%, hence the FY 83 base is \$2,750.0. The \$2.98 billion limit for FY 84 is estimated to be 8.4% over the FY 83 base level." Since there is no explanation of the assumptions or method used, I do not see why this Administration is bound by whatever those may have been, nor bound to \$2.98 billion as a base for calculating the FY 85 limit. It seems to me that Governor Sheffield and the Legislature may adopt a method that best comports with the intent of the law and with logic, even if the method produces a different number from that used in FY 1984.

Appropriation Limit Options

From the foregoing discussion it should be clear that there are theoretically a large number of possible limit calculations. This section presents several options that suggest the range of possible outcomes. It also includes the recommended calculation, which is Option 4. In accord with our earlier recommendation regarding the period of adjustment to the base, all of the options shown here assume that the adjustment for population and inflation are made for three years rather than four. A fourth year of adjustments would add approximately \$250 million to the numbers shown. The options are:

- Option 1 = ADOL Population and Alaska CPI-U
- Option 2 = ADOL Population and Government Services
- Option 3 = BLS Population and Alaska CPI-U
- Option 4 = BLS Population and Government Services
- Option 5 = Census* Population and Alaska CPI-U
- Option 6 = Census* Population and Government Services

* 1970-1980 compound average

The appropriation limits that result from these options are:

<u>FY</u>	<u>Option 1</u>	<u>Option 2</u>	<u>Option 3</u>	<u>Option 4</u>	<u>Option 5</u>	<u>Option 6</u>
84	3.041	3.199	3.062	3.220	2.871	3.020
85	3.356	3.618	3.390	3.654	3.079	3.319
86	3.704	4.092	3.753	4.147	3.301	3.648
87	4.087	4.630	4.156	4.707	3.539	4.010
88	4.509	5.238	4.602	5.343	3.795	4.406

We have analyzed these spending limits in terms of maximum allowable appropriations and available revenue, and the results of that analysis are available. However, the focus of this memo has been the methodological issues surrounding the calculation of a limit.

GSH/mm

FOOTNOTES

1. This change can be expressed, and calculated, in three ways: as one-tenth the decennial change; as the continuous annual change; and as the compound annual change. The latter (3.126%) is the best measure for the purposes at hand.

$$\text{One-tenth the decennial change: } \frac{(419,700 - 308,500)}{10} = 3.6045$$

$$\text{Continuous annual change: } P_{1980} = P_{1970} E^{rt} = 3.0782$$

$$\text{Annual compound change: } P_{1980} = (1+r)^t P_{1970} = 3.1260$$

2. The change involved a measure of shelter from the cost of mortgages and the selling price of homes to the cost of rental units.
3. In Anchorage, the BLS began for the first time in 1983 to measure Anchorage costs. Prior to this, they simply used the costs of housing in west coast cities of a size similar to Anchorage. In describing the effect of the new measure, the Alaska Department of Labor has written:

From January to July of this year the Anchorage Consumer Price Index registered increases below historical levels. During the last five months, the index's over-the-year change did not exceed 1% and, in fact, fell in May. This decline in inflation is misleading because of methodology changes causing inconsistency between 1983 and 1982 data. Because of this the BLS has recommended that in the short term, users of the CPI use either 1) a 12 month annual average, or 2) the U.S. rate; or 3) compare 1983 data only. Looking at the Anchorage CPI this way the index has risen 3.2% from January through July. If the CPI continues this same trend it will increase between 5.0% and 6.0% for the 1983 average.

(Alaska Economic Trends, Alaska Department of Labor, November, 1983, p. 13.)

Why was the change made? The Commissioner of the U.S. Department of Labor provides the following reasons. First, the former method combined investment and consumption effects upon price. The new approach is an attempt to measure only the changing cost of consumption. Second, the old method was based upon the assumption of a fixed rate mortgage. Recently, a variety of alternatives to a fixed rate mortgage have become

available. The former method did not take them into account. Third, the appearance of seller financing distorted the measure since there is no accurate way to detect it. Finally, the Federal Government will be using the index, starting in 1985, to index tax brackets. Thus, the most accurate index possible is desired.

MEMORANDUM

State of Alaska

TO: Gordon S. Harrison
Associate Director

DATE: January 19, 1984

FILE NO: 84B-3

TELEPHONE NO: 465-3568

FROM: Thomas P. Chester ^{TC}
Principal Analyst

SUBJECT: Spending Limit/HB 524

Adoption of HB 524 will result in the following spending limits:

<u>Fiscal Year</u>	<u>Limit</u> ^{a/}	=	<u>Prior Limit</u> X	(<u>R1</u> ^{b/} + <u>R2</u> ^{c/})
82	\$2,500			
83	2,765	=	\$2,500	X (1 + .02837 + .07750)
84	3,040	=	2,765	X (1 + .02837 + .07111)
85	3,151	=	3,040	X (1 + .02837 + .00835)

- ^{a/} Rounded to nearest million.
- ^{b/} Rate of population change.
- ^{c/} Rate of inflation.

Estimation of rate of population change (lines 20 - 23).

$$.02837 = 1/10 \times \ln (401,851/302,583)$$

Estimation of rate of inflation (lines 15 - 19)

<u>Month</u>	<u>Year</u>	<u>CPI-U</u>	<u>Rate of Change</u>
July	80	228.4	-
July	81	246.1	(246.1/228.4) - 1 = .07750
July	82	263.6	(263.6/246.1) - 1 = .07111
July	83	265.8	(265.8/263.6) - 1 = .00835

mm

Attachment

cc: ✓ The Honorable Al Adams

THE LEGISLATURE

BUDGET AND AUDIT COMMITTEE

JUNEAU 99801

MEMORANDUM

DATE: January 17, 1984
TO: Rep. Al Adams, Chairman
House Finance Committee
FROM: Mike Greany, Director *MGreany*
Legislative Finance Division
SUBJ: Spending Limit

Legislative Finance Division (P.S. Dhillon) has reviewed your draft legislation for the spending limit.

This is to confirm that it produces precisely the same spending limit as SB 326 (Ferguson): \$3151.4 for FY 85.*

The only difference between the two versions is that your's removes unnecessary language in Section 1(2).

* Limit (\$ Millions)

FY 82	\$2500.0	
FY 83	\$2764.7	= \$2500.0 X (1 + (0.0284 + 0.0775))
FY 84	\$3039.8	= \$2764.7 X (1 + (0.0284 + 0.0711))
FY 85	\$3151.4	= \$3039.8 X (1 + (0.0284 + 0.0083))

Introduced: 1/18/84
Referred: Judiciary and
Finance

1 IN THE HOUSE

BY ADAMS, WARD AND UEHLING

2

HOUSE BILL NO. 524

3

IN THE LEGISLATURE OF THE STATE OF ALASKA

4

THIRTEENTH LEGISLATURE - SECOND SESSION

5

A BILL

6 For an Act entitled: "An Act relating to the constitutional spending
7 limit; and providing for an effective date."

8 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

9 * Section 1. AS 37.07 is amended by adding a new section to read:

10 Sec. 37.07.075. ADJUSTMENT OF APPROPRIATION LIMIT BASE. (a)

11 The appropriation limit of \$2,500,000,000 established by art. 1X, sec.
12 16 of the state constitution shall be cumulatively adjusted annually
13 through the end of the preceding fiscal year by the office by the sum
14 of the following percentages:

15 (1) the percentage annual change, during the fiscal year
16 two years preceding each fiscal year, in the consumer price index for
17 all urban consumers for the Anchorage Metropolitan Area as published
18 by the Bureau of Labor Statistics of the United States Department of
19 Labor; and

20 (2) the percentage continuously compounded annual rate of
21 change in estimated population as established by the United States
22 Census Bureau for the period between the previous two decennial cen-
23 suses.

24 (b) The base date for determining changes in population and
25 inflation under (a) of this section is July 1, 1981.

26 (c) In this section "population" means total resident population
27 of the state computed under the method of computation used in the most
28 recent federal decennial census.

29 * Sec. 2. This Act takes effect immediately in accordance with