Block Grants and Formula Grants: A Guide for Allotment Calculations

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
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Executive Summary

The Office of Applied Studies (OAS), Substance Abuse and Mental Health Services Administration (SAMHSA), annually determines the allocation of funding to States and territories for four grant programs: Substance Abuse Prevention and Treatment Block Grant (SAPT BG), Mental Health Services Block Grant (MH BG), Protection and Advocacy for Individuals with Mental Illness Formula Grant (PAIMI FG), and Projects for Assistance in Transition from Homelessness Formula Grant (PATH FG). The allocations are made in accordance with SAMHSA's legislative authorities. Over time, the underlying bases of the calculations, particularly that for SAPT BG and MH BG, have undergone changes primarily because of changes in legislation. This guidebook presents the formulas for the SAPT BG, MH BG, PAIMI FG, and PATH FG allotment calculations and reflects the rules laid out in the initial legislation or subsequent reauthorizations.

In general, the methodology of allotment determination for all four programs involves the following three common steps: (1) setting aside a certain percentage of the appropriated amount for SAMHSA's use to cover the costs for data collection, technical assistance, and program evaluation; (2) calculating baseline allotments based on certain factors; and (3) adjusting the allotments, if necessary, so that statutory minimum allotment constraints are satisfied.

For the SAPT BG, State baseline allotment calculations, when warranted, are based on the relative share of the Population-at-Risk, Cost-of-Services, and Fiscal Capacity Indexes, while the territory allotments are based solely on the relative share of the population. For the MH BG, similar factors are used in State and territory allotment calculations, except that the Population-at-Risk Index is replaced by the Weighted Population-at-Risk in State baseline allotment calculations, and different statutory minimum allotments apply.

For the PAIMI FG, baseline allotments are calculated as the sum of two components: 50 percent is based on the relative share of the total population, and another 50 percent is based on the relative share of the total population weighted by the relative per capita income. For the PATH FG, baseline allotments, except for four territories, are determined by the relative share of the population of urbanized areas. Each of the four territories receives $50,000 and no factor-based calculations are involved.

For all four programs, it is important to note that baseline allotments are not necessarily the final allotments, and they may require adjustment so that the statutory minimum allotment constraints are satisfied. Statutory minimum allotments vary across calculations and are not the same for States and territories in each calculation.

A nontechnical overview of the calculation procedures, detailed descriptions of the four sets of formulas, and the data needed for calculations are presented in separate sections. To provide an overall understanding of the calculation procedures employed, flowcharts depicting the major steps involved also are presented. Additionally, relevant excerpts from enabling legislation are included and detailed tables of the allotment calculations are presented. Finally, the calculations are cross-referenced to the legislation text and to example-tables to help the reader better understand the formulas.

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1. Introduction

This document presents formulas as well as flowcharts showing the major steps involved in the current allotment calculations for States and territories for the four "block grant" and "formula grant" programs. It also presents the relevant sections of legislative text and other references from which the allotment formulas are deduced. It describes the data files used in the calculations and the data files' sources, outlining the calculation procedures with examples.

These grant programs are administered by the Substance Abuse and Mental Health Services Administration (SAMHSA). Although they are implemented by the Center for Mental Health Services (CMHS), the Center for Substance Abuse Prevention (CSAP), and the Center for Substance Abuse Treatment (CSAT), allotment calculations are performed by the Office of Applied Studies (OAS). The four grant programs are as follows:

1) The *Substance Abuse Prevention and Treatment Block Grant* (SAPT BG) Program addresses SAMHSA's goal of "supporting and expanding substance abuse prevention and treatment services" (SAMHSA, Fiscal Year 2007). Funds are distributed to eligible States, territories, former territories, the District of Columbia (DC), and the Red Lake Indian Tribe of Minnesota. As detailed in Chapter 2, the SAPT BG allotments are determined by a set of formulas based upon specified economic and demographic factors and several minimum allotment constraints.

2) The *Mental Health Services Block Grant* (MH BG) Program focuses on SAMHSA's goals of increasing capacity and promoting effective mental health services (SAMHSA, Fiscal Year 2007). As can be seen in Chapter 3, the MH BG allotments are determined by a set of formulas based upon factors similar to those used in the SAPT BG calculations although the population factor and the minimum allotment constraints used in the calculations are different.

3) The *Protection and Advocacy for Individuals with Mental Illness Formula Grant* (PAIMI FG) Program is designed "to protect and advocate the rights of individuals with mental illness in public and private facilities" (SAMHSA, Fiscal Year 2007; p. CMHS-3). Grants are awarded to the 50 States, DC, and Puerto Rico plus four territories (Guam, Virgin Islands, Northern Mariana Islands, and American Samoa) and the American Indian Consortium. As described in Chapter 4, the PAIMI FG allotments are determined by formulas that take into account relative differences in the size of the population, per capital income, and minimum allotment constraints.

4) The *Projects for Assistance in Transition from Homelessness Formula Grant* (PATH FG) Program "supports services to individuals with serious mental illnesses who are homeless or at risk of becoming homeless" (SAMHSA, Fiscal Year 2007; p. CMHS-3). Grants are awarded to the 50 States, DC, and Puerto Rico plus four territories. As explained in Chapter 5, the PATH FG allotments are determined using formulas that are primarily based upon the size of the population of urbanized areas and minimum allotment constraints.

Over time, the applications used for the SAPT and MH BG allotment calculations underwent changes primarily because of changes in enabling legislation. Although there have been no changes in the laws for PAIMI and PATH FG allotment calculations, some minor modifications were made to more closely model Congressional intent.

Evolution of the SAPT and MH BG Allotment Calculations

- Beginning in fiscal year (FY) 1992, Lotus spreadsheet applications have been used to calculate SAPT and MH BG allotments. These programs were originally developed by the General Accounting Office (GAO, now the Government Accountability Office) and provided to SAMHSA, and were used by CSAT and CMHS to determine allotments for FY 1992-1994.

- For FY 1992-1994, a SAS application was developed and used by CSAT and CMHS staff to construct the Cost-of-Services Index (CSI) in these allotment calculations.

- In FY 1995, responsibility for determination of SAPT and MH BG allotments passed from CSAT and CMHS, respectively, to OAS. In that year, OAS staff and an OAS contractor (Klemm Analysis Group) independently reviewed the Lotus application used for SAPT BG allotment calculations and the SAS application used for CSI calculations and concluded that the applications were doing the jobs correctly.

- For FY 1995-1997, the determination of SAPT and MH BG allotments were performed by SAMHSA/OAS by: (1) changing the funding redistribution logic for territories in order to satisfy statutory minimum allotment constraints; (2) rounding final allotments to the nearest dollar; (3) adding additional tables to the models for the source data used in the calculations; and (4) removing unnecessary columns/variables from the models.

- For FY 1996 and 1997, the CSI values were revised using a Wage Subindex based upon non-manufacturing rather than manufacturing wages.

- In early 1997, the Lotus spreadsheet application used for the MH BG allotment calculations was verified by Klemm.

- Beginning in FY 1998, average State wages were calculated by applying a revised methodology for determination of the Wage Subindex of the CSI.

- Beginning in FY 1999, the Lotus spreadsheet application used for the SAPT BG allotment calculations was modified by developing and incorporating the logic required to determine allotments subject to statutory minimum allotment constraints, and for years in which the appropriation amount declines relative to that for the prior year. GAO concurrently developed a spreadsheet model for SAPT allotment calculations in QuatroPro using macros to determine allotments

subject to the statutory minimum constraints, and validated the calculations of the modified Lotus model.

- For FY 2007-2009, CSI calculations were performed using both the Lotus-based model and a PC SAS-based model independently developed by SAMHSA/OAS staff, and the results from the two models were compared and validated.

Modifications in PAIMI and PATH FG Allotment Calculations Beginning in FY 2002

a) PAIMI:

- The use of a 3-year average estimate of Per Capita Income (PCI) was replaced by the use of the estimate for the most recent single year.

- The use of rounded population data was replaced by the use of data without rounding as obtained from the source.

- The use of a simple average of the PCI was replaced by the use of a population-weighted average in the determination of the national PCI.

- Logic was added to automatically determine the number of funding redistribution cycles necessary in the calculations.

b) PATH:

- Logic was added to correct for the error in the Domain allotment total due to rounding to the nearest thousand dollars.

- Logic was added to automatically determine the number of funding redistribution cycles necessary in the calculations.

Impetus for Development of the Guide

The formulas for SAPT BG and MH BG allotment calculations that were deduced from the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act of 1992 (P.L. 102-321) were earlier described by SAMHSA in the *Federal Register* (June 17, 1996; pp. 30625-30632). However, the changes to the allotment calculations, as referred to above, for the SAPT BG and MH BG have not been formally documented. For these BG programs, the absence of documentation reflecting the changes in the allotment calculations resulting primarily from the 1999 Reauthorization has been a major impetus for developing this Guide. Furthermore, for the other two grant programs (i.e., PAIMI FG and PATH FG), documentation of formulas and calculation procedures has been nonexistent until now. In this Guide, we present updated formulas and calculation procedures for both BG and FG programs.

For the four programs, formulas along with calculation flowcharts and data sources are presented in Chapters 2-5. The types of calculations performed and quality control employed are described in Chapter 6. The relevant text references for the formulas are presented in Appendices A-D. Detailed tables of allotment calculations are presented as examples in Appendices E-H. These example-tables in the appendices and formulas in Chapters 2-5 are cross-referenced.

2. Substance Abuse Prevention and Treatment Block Grant (SAPT BG) Allotment Formulas

The Office of Applied Studies (OAS) of the Substance Abuse and Mental Health Services Administration (SAMHSA) determines annually the allocation of funding to States and territories for the SAPT BG in accordance with enabling legislation. The formulas presented below are mathematical expressions of the rules laid out in the legislation and subsequent Reauthorizations.

The SAPT BG allotment calculation begins with a comparison of the appropriated amount for the current vs. prior fiscal year. If the appropriation amount for a given fiscal year is greater than that for the prior fiscal year, then a "Scenario 1" type of calculation is performed to determine allotments. As the law requires, 5 percent of the appropriated amount for a given fiscal year is first set aside for SAMHSA to cover the costs for data collection, technical assistance, and program evaluation. Of the remaining 95 percent of the appropriated amount, 98.5 percent is distributed to 50 States (with the allotment for Minnesota apportioned between the Red Lake Indians and the remainder of the State) and the District of Columbia (DC) and 1.5 percent is distributed to five territories and three former territories. Under this scenario, the initial or "baseline" allotments for the States and DC are determined by the relative share of Population-at-Risk, Cost-of-Services, and Fiscal Capacity Indexes. However, the allotment calculations for territories are solely based on the relative share of the population. The baseline allotments are adjusted, if and as necessary, so that statutory minimum allotment constraints are satisfied. This is accomplished via an iterative calculation algorithm which uniformly and proportionately reduces the baseline funding of some Domains and redistributes it to other Domains in order that all minimum allotment constraints are fully satisfied.

If the appropriated amount for a given fiscal year is equal to or less than that of the prior fiscal year, then a greatly simplified "Scenario 2" type of calculation is performed. If the appropriated amount is unchanged, then, for the given year, the set-aside amount for SAMHSA remains the same and all States receive the allotments which they received for the prior year. For a given fiscal year, if the appropriated amount is less, then the set-aside amount and the allotments for States are reduced by the same proportion by which the appropriation amount declined between the years.

The SAPT BG formulas for the two scenarios are presented in the following sequence.

Scenario 1: Appropriation for the Reference Fiscal Year Increased, Relative to Prior Year's Amount

Baseline Allotment Formula (50 States and DC)
(A1)

$$A_{i,RFY,Baseline} = 0.95 \times 0.985 \times AP_{RFY} \times \left(\frac{P_i \times C_i \times F_i}{\sum_{i=1}^{51} (P_i \times C_i \times F_i)} \right)$$

$$\{ i(State) = 1, 2, ..., 51 \}$$

where $A_{i,\ RFY,\ Baseline}$ = Baseline allotment for State *i* for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

P_i = Population-at-Risk Index (ages 18-64) for State *i* (Formula A2)

C_i = Cost-of-Services Index for State *i* (Formula A3)

F_i = Fiscal Capacity Index for State *i* (Formulas A6 and A7)

0.95 = Proportion of AP_{RFY} for disbursement to States and territories

0.985 = Proportion of State-Territory allotment for disbursement to States

According to this formula, the appropriation amount for the program (AP_{RFY}) for a given, or "reference," fiscal year is determined annually by the Congress. Five percent of the appropriated amount is used by the Department of Health and Human Services (DHHS)/ Substance Abuse and Mental Health Services Administration (SAMHSA) for data collection to determine the incidence and prevalence of substance abuse and for technical assistance and program evaluations relevant to substance abuse treatment and prevention, while 95 percent of the appropriation is allocated among the States (including DC) and territories (hence the factor "0.95" used in the formula). Of the amount allocated to States and territories, 98.5 percent is distributed to the States (hence the factor "0.985" used in the formula), which is referred to as the "State Subtotal." Refer to Appendix Table E1 as an example of calculations of the amounts available for States, territories, and SAMHSA set-aside.

The initial or "baseline" allotment for a State ($A_{i,RFY,Baseline}$) is determined by three factors: the Population-at-Risk Index (P_i), the Cost-of-Services Index (C_i), and the Fiscal Capacity Index (F_i). The share that a State receives of the State Subtotal is equal to the ratio formed by the product of the three factors for the State divided by the sum of the products for all the States; this ratio is shown within large parentheses on the right-hand side of the formula. The baseline allotment for a State is then determined as the product of this ratio (the State's share) with the

State Subtotal (the funding available to all the States). Refer to Appendix Table E10 for an example of baseline allotment calculations.

Population-at-Risk Index Formula (P_i)
(A2)

$$P_i = \frac{1}{2}\left(\frac{P_{i,18-24} + \frac{P_{i,18-24} \times UP_{i,18-24(Census)}}{P_{i,18-24(Census)}}}{\sum_{i=1}^{51}\left(P_{i,18-24} + \frac{P_{i,18-24} \times UP_{i,18-24(Census)}}{P_{i,18-24(Census)}} \right)} + \frac{P_{i,25-64}}{\sum_{i=1}^{51} P_{i,25-64}} \right)$$

$$\{i(State) = 1, 2, ..., 51\}$$

where P_i = Population-at-Risk Index (ages 18-64) for State *i*

$P_{i,\ 18\text{-}24}$ = Population estimate for ages 18-24 for State *i*

$P_{i,\ 25\text{-}64}$ = Population estimate for ages 25-64 for State *i*

$UP_{i,\ 18\text{-}24\ (Census)}$ = Urbanized area population at ages 18-24 for State *i* (recent decennial census)

$P_{i,\ 18\text{-}24\ (Census)}$ = Population at ages 18-24 for State *i* (recent decennial census)

The Population-at-Risk Index (P_i) is determined annually and represents, or is a proxy for, the relative need for substance abuse prevention and treatment services in a State. The index is an average of two ratios, each having an equal weight of 50 percent (hence the factor "1/2" that appears on the left of the large parentheses). The first ratio is the number of individuals aged 18-24 plus the number of individuals in the same age group who reside in urbanized areas in a State divided by the sum of the same populations of all the States. This effective "double-counting" of individuals aged 18-24 residing in urbanized areas is intentional. The second ratio is the number of individuals aged 25-64 in a State divided by the sum of the same populations of all the States. Refer to Appendix Table E2 for an example of the calculation of the Population-at-Risk Index.

Cost-of-Services Index Formula (C_i)
(A3)

$$C'_i = 0.75W_i + 0.15R_i + 0.10S_i$$

$$C_i = 0.9 \text{ if } C'_i < 0.9$$

$$C_i = 1.1 \text{ if } C'_i > 1.1$$

Otherwise

$$C_i = C'_i$$

$$\{i(State) = 1, 2, ..., 51\}$$

where C'_i = Unconstrained Cost-of-Services Index for State *i*

C_i = Constrained Cost–of-Services Index for State *i*

W_i = Wage Subindex (proxy for labor costs) for State *i* (Formula A4)

R_i = Rental Subindex (proxy for facility costs) for State *i* (Formula A5)

S_i = Supply Subindex (proxy for materials costs) for State *i* (The value of this subindex is 1 for all States.)

The Cost-of-Services Index is determined triennially (i.e., it is revised every third fiscal year rather than annually) and the most current index is being used for the determination of allotments for fiscal year (FY) 2007, FY 2008, and FY 2009. It represents, or is a proxy for, the relative costs of providing substance abuse prevention and treatment services in a State. This index consists of three component subindexes, each of which is weighted. The Wage Subindex (W_i) has a weight of 75 percent, the Rental Subindex (R_i) has a weight of 15 percent, and the Supplies Subindex (S_i) has a weight of 10 percent, hence the coefficients 0.75, 0.15, and 0.10 in the formula for the unconstrained Cost-of-Services Index (C'_i), respectively.

The Wage and Rental Subindexes are proxies for labor and facility costs, respectively, and are recalculated every third fiscal year when the Cost-of-Services Index is revised. However, the Supplies Subindex, which is a proxy for materials costs, is not recalculated but rather has a perpetual, uniform value of 1.0 for all States. This implies that all States have equal access to a national market for supplies, and thus the relative costs for the same are assumed to not vary geographically.

The final, or constrained, Cost-of-Services Index (C_i) is then set to a value of 0.9 if C' is less than 0.9, or set to a value of 1.1 if C'_i is greater than 1.1. If the unconstrained index is equal to or greater than 0.9 and less than or equal to 1.1, then the final constrained index is set equal to the unconstrained index. Refer to Appendix Tables E3-E5 for an example of the calculations of the Cost-of-Services Index and its subindexes.

Wage Subindex Formula (W_i)

(A4)

$$W_i = \frac{\left(\sum_{j=1}^{5} S_{ij,CENSUS_BY} \Big/ \sum_{j=1}^{5} H_{ij,CENSUS_BY}\right) \times \frac{\left(\sum_{k=1}^{N} S_{ik,CMS_RY} \Big/ \sum_{k=1}^{N} H_{ik,CMS_RY}\right)}{\left(\sum_{k=1}^{N} S_{ik,CMS_BY} \Big/ \sum_{k=1}^{N} H_{ik,CMS_BY}\right)}}{\left(\sum_{i=1}^{51}\sum_{j=1}^{5} S_{ij,CENSUS_BY} \Big/ \sum_{i=1}^{51}\sum_{j=1}^{5} H_{ij,CENSUS_BY}\right) \times \frac{\left(\sum_{i=1}^{51}\sum_{k=1}^{N} S_{ik,CMS_RY} \Big/ \sum_{i=1}^{51}\sum_{k=1}^{N} H_{ik,CMS_RY}\right)}{\left(\sum_{i=1}^{51}\sum_{k=1}^{N} S_{ik,CMS_BY} \Big/ \sum_{i=1}^{51}\sum_{k=1}^{N} H_{ik,CMS_BY}\right)}}$$

$\{i(State) = 1, 2, ..., 51\}$

$\{j(Occupation - Industry) = 1, 2, ...5\}$

$\{k(Provider) = 1, 2, ..., N\}$

where W_i = Wage Subindex for State *i*

$S_{ij,\ Census_BY}$ = Total salary earned in occupation-industry category *j* (Counselors, Psychologists, Social Workers, Physicians and Surgeons, and Registered Nurses) in State *i* during the base year (recent decennial census)

$H_{ij,\ Census_BY}$ = Total hours worked in occupation-industry category *j* in State *i* during the base year (recent decennial census)

$S_{ik,\ CMS_BY}$ = Total wages (except for a few categories noted in Appendix A) paid by hospital (provider) *k* in State *i* during the base fiscal year (Centers for Medicare and Medicaid Services [CMS])

$H_{ik,\ CMS_BY}$ = Total hours (except for a few categories noted in Appendix A) for which wages were paid by hospital (provider) *k* in State *i* during the base fiscal year (CMS)

$S_{ik,\ CMS_RY}$ = Total wages (except for a few categories noted in Appendix A) paid by hospital (provider) *k* in State *i* during the most recent fiscal year (CMS)

$H_{ik,\ CMS_RY}$ = Total hours (except for a few categories noted in Appendix A) for which wages were paid by hospital (provider) *k* in State *i* during the most recent fiscal year (CMS)

The Wage Subindex (W_i) is a component of the Cost-of-Services Index and is a measurement of the relative labor costs required to provide substance abuse prevention and treatment services in a State (including DC). Despite the complex appearance of Formula A4, the composition of the Wage Subindex is actually straightforward.

The value calculated in the numerator of the formula is an average wage rate for a given State, while the value calculated in the denominator is an average (weighted) wage rate for the United States (exclusive of territories) using the same methodology as employed for calculation of the value in the numerator. The Wage Subindex is, therefore, a ratio equal to an average State wage rate divided by an average national wage rate. It is a dimensionless (i.e., unitless) measurement of the relative deviation of a State's average wage rate from the nation's average wage rate.

Both the State and national average wage rates consist of two parts: a base wage rate and an update factor. The base wage rate is multiplied by the update factor to yield the most recent average wage rate.

Shown within the first parentheses in the numerator, the State average base wage is determined by dividing the total salaries (earned income) of workers (working in the State, regardless of their State of residence) in five specific occupation-industry categories ($S_{ij,CENSUS_BY}$, State *i* and occupation-industry category *j*) by the associated total hours worked ($H_{ij,CENSUS_BY}$). Data used in the calculation of this average base wage rate are derived from the 16 percent sample of the most recent decennial census and provided in the form of special tabulations by the U.S. Census Bureau.

The State update factor, shown as the quotient of two terms (each within parentheses) in the second part of the numerator, is based upon source data from CMS. The denominator of this quotient consists of the State average wage rate for the "base year" (which is the same year as

that used for data collection for the most recent decennial census), and is calculated by dividing the total salaries of workers in selected occupation categories in all provider facilities in the State (S_{ik,CMS_BY}, State i and provider k) by the associated total hours worked (H_{ik,CMS_BY}). The numerator of this quotient is similarly calculated from CMS-based source data for the most recent year (S_{ik,CMS_RY} and H_{ik,CMS_RY}).

The denominator of Formula A4 (i.e., the average national wage rate) is calculated in an identical manner to that described above for a State, except that relevant data are compiled within each formula component for all States rather than just for a single State. Shown within the first parentheses in the denominator, a decennial census-based average national wage rate is determined, which is then updated by a CMS-based national update factor in the second portion of the denominator. The current average national wage rate calculated is, therefore, a weighted-average value rather than a simple average of 51 State values.

The calculation of the Wage Subindex of the CSI used for the determination of FY 2007-2009 Block Grant allotments is shown in Table E3 of Appendix E. As an example, the calculation of the Wage Subindex for Alabama (AL) is described. The average base wage for AL was $23.98, shown as the first entry in Column 1 of the table, while that for the nation was $24.20, shown as the last entry in the column. These rates were derived from dollars earned and hours worked information for calendar year 1999 as reported in the 2000 Decennial Census for specific occupation-industry categories.

The base wage rate of the Update Factor for AL was $15.41 and that for the nation was $18.31, shown as the first and last entries in Column 2 of the table, respectively. These rates were derived from dollars paid and hours worked information for FY 1999 for all occupations except for several specific excluded ones as reported to CMS by hospitals participating in the Medicare program (i.e., providers). Data for FY 1999 were used because they were the most contemporaneous with the Census-based data (i.e., 9 months of FY 1999 fell in calendar year 1999).

The most recent wage rate of the Update Factor for AL was $17.66 and that for the nation was $21.35, shown as the first and last entries in Column 3 of the table, respectively. These rates were derived from dollars earned and hours worked information for FY 2002 for all occupations except for several specific excluded ones as reported to CMS by hospitals participating in the Medicare program. Data for FY 2002 were used because they were the most current available on October 1, 2005 (i.e., the source data "cutoff date" for the FY 2007 Block Grant calculations). These data were used by CMS to establish Medicare reimbursement rates for FY 2006.

In Column 4 of the table, the Update Factor is calculated by dividing the value in Column 3 (the most recent CMS-based wage rate) by the value in Column 2 (the CMS-based wage rate for the base year) to derive the percentage or proportionate increase between the base year and most recent year for which data are available. The Update Factor for AL was 1.1459 ($17.66 ÷ $15.41) while that for the nation was 1.1659 ($21.35 ÷ $18.31), shown as the first and last values in Column 4, respectively.

The Updated Census Wage Rate is shown in Column 5 of the table, which is calculated by multiplying the Census wage rate from the base year (Column 1 value) by the Update Factor

(Column 4 value). The value calculated for AL was $27.48 ($23.98 × 1.1459) while that for the nation was $28.22 ($24.20 × 1.1659) shown as the first and last values in Column 5, respectively.

The final step in the calculations is the determination of the Wage Subindex itself, shown in Column 6 of the table. The Wage Subindex for a State is calculated by dividing the Updated Census Wage Rate for the State by the Updated Census Wage Rate for the nation, both values of which are in Column 5. Thus the Wage Subindex for AL is calculated as 0.9739 ($27.48 ÷ $28.22), while the value for the nation is always 1.0 ($28.22 ÷ $28.22).

Rental Subindex Formula (R_i)
(A5)

$$R_i = \frac{\sum_{j=1}^{N}\left(POP_{ij} \times FMR_{ij}\right) \Big/ \sum_{j=1}^{N} POP_{ij}}{\sum_{i=1}^{51}\sum_{j=1}^{N}\left(POP_{ij} \times FMR_{ij}\right) \Big/ \sum_{i=1}^{51}\sum_{j=1}^{N} POP_{ij}}$$

$$\{i(State) = 1, 2, ..., 51\}$$

$$\{j(County / Subcounty) = 1, 2, ..., N\}$$

where R_i = Rental Subindex for State i

POP_{ij} = Resident population estimate (all ages) for substate area (county or subcounty) j in State i

FMR_{ij} = 40th or 50th percentile of Fair Market Rent (FMR) for a four-bedroom residential unit for substate area j in State i

The Rental Subindex (R_i) is a component of the Cost-of-Services Index and is a measurement of the costs of facility space required to provide substance abuse prevention and treatment services in a State (including DC) relative to the average costs for the nation. The composition of the Rental Subindex is fairly simple.

The value calculated in the numerator of the formula is an average rental rate for a State, while the value calculated in the denominator is an average (weighted) rental rate for the United States (exclusive of territories) using the same methodology as employed for calculation of the value in the numerator. The Rental Subindex is, therefore, a ratio equal to an average State rental rate divided by an average national rental rate. It is a dimensionless (i.e., unitless) measurement of the relative deviation of a State's average rental rate from the nation's average rental rate.

The State average rental rate, shown in the numerator, is a population-weighted average rental rate for the State. The rental data used as proxies for facility space costs (FMR_{ij}, State i and substate area j) are the most current 40th or 50th percentile values for four-bedroom FMRs as

determined by and available from the U.S. Department of Housing and Urban Development (HUD). FMRs are defined by HUD as "the amount that would be needed to pay the gross rent (shelter rent plus utilities) of privately owned, decent, and safe rental housing of a modest (non-luxury) nature with suitable amenities" (Department of Housing and Urban Development, 2006). FMR data are reported at the county level for all States except the six New England States, and at the subcounty level (city, town, or township) for the New England States.

The population data used in the determination of the Rental Subindex are the most current substate (county and subcounty) level estimates available from the U.S. Bureau of the Census for resident population (POP_{ij}, State *i* and substate area *j*). These are used to weight the FMR data with population for all areas within the State. A population-weighted average FMR for the State is then calculated by dividing the sum of the population-weighted FMRs for all areas in the State by the total population of the State (i.e., the sum of the populations of all the areas within the State).

The denominator of Formula A5 (i.e., the average national population-weighted rental rate) is calculated in an identical manner to that described above for a State, except that data are compiled for all States rather than for a single State. The average national rental rate calculated is, therefore, a weighted-average rather than a simple average of the 51 State values.

The calculation of the Rental Subindex of the CSI used for the determination of FY 2007-2009 Block Grant allotments is shown in Table E4 of Appendix E. As an example, the calculation of the Rental Subindex for Alabama (AL) is described.

The number of county (or county-equivalent) areas in a State for which HUD established FMRs is shown in the first column of the table, while the number of subcounty areas is shown in the second column. There were 67 county or county-equivalent areas in AL, and 3,077 for the nation. Alabama had no subcounty areas (as noted, only New England States had FMR data at the subcounty level), while the total number of subcounty areas for the nation (i.e., for the six New England States) was 1,604.

The third column of the table contains State population estimates, which are aggregations of the population estimates for county or subcounty areas within the States, and that for the nation, which is the sum of the county or subcounty areas for all the States. The total population for AL was 4,530,182, while the total for the nation was 293,655,400.

In the fourth column of the table, the sum of the FMR times population products for all the county or subcounty areas within a State are shown for the States and for the nation. For AL this value was 3,485,284,401 Dollar-Persons, while for the nation it was 350,133,831,845 Dollar-Persons.

The State average four-bedroom rent is shown in the fifth column of the table, and is calculated by dividing the sum of the products of the FMR times population for the areas of a State (fifth column value) by the population of the State (third column value). This average rent value for AL was $769 (3,485,284,401 Dollar-Persons ÷ 4,530,182 Persons), while that for the nation was $1,192 (350,133,831,845 Dollar-Persons ÷ 293,655,400 Persons).

The final step in the calculations is the determination of the Rental Subindex itself, shown in the last column of the table. The Rental Subindex for a State is calculated by dividing the State average four-bedroom rent (fourth column value) by the average four-bedroom rent for the nation (fourth column, bottom value). Thus the Rental Subindex for AL was calculated as $769 ÷ $1,192 = 0.64525, while the value for the nation is always 1.0 ($1,192 ÷ $1,192). In this example, AL was found to have an average cost for facility space that was approximately 65% of the national average.

There are a few exceptions to the methodology for calculation of the Rental Subindex, which are cited below.

- Crawford County, MO. As noted, HUD generally promulgates subcounty-level FMRs only for the New England States. However, one exception to this is Crawford County, MO, for which HUD promulgates one rate for Sullivan City, which lies within Crawford County, and another rate for the balance of the county. In calculating the Rental Subindex, the current Bureau of the Census population estimates for both Sullivan City and Crawford County are used to appropriately weight the FMR rates for Sullivan City and Crawford County net of the population of Sullivan City.

- Howard County, MD. As noted above, HUD generally promulgates subcounty-level FMRs only for the New England States. However, a second exception to this rule is Howard County, MD, for which HUD promulgates one rate for Columbia, which lies within Howard County, and another rate for the balance of the county. While the Bureau of the Census counted the population of Columbia for the 2000 Decennial Census, it has not estimated the population of Columbia since the last census because Columbia is not an official municipality within Howard County. SAMHSA therefore estimates the most current population for both Columbia and Howard County net of the population of Columbia by using the most recent population estimate for Howard County (which includes the population of Columbia) and the proportion of the population of Howard County that resided in Columbia at the time of the 2000 Decennial Census.

- Minor Geographic Discrepancies. Occasionally, SAMHSA must perform minor reconciliations of discrepancies in the geographies used by HUD and the Bureau of the Census. An example of this was several small townships in Maine, for which the Census Bureau reported populations but for which HUD promulgated no corresponding FMRs. In such instances, SAMHSA assigns a FMR to such entities equal to the FMR for the townships in closest proximity.

Fiscal Capacity Index Formula—All but DC (F_i)
(A6)

$$F_{i\{\forall i, i\neq DC\}} = \max\left[0.4, 1 - 0.35 \times \left(\frac{\dfrac{\overline{TTR_i}}{C_i}}{\dfrac{P_i}{\sum_{i=1}^{51} P_i}} \Big/ \sum_{i=1}^{51} \frac{\overline{TTR_i}}{C_i}\right)\right]$$

$$\{i(State) = 1, 2, ..., 51)\}$$

where F_i = Fiscal Capacity Index for State i (except for DC)

$\overline{TTR_i}$ = Most recent 3 years' average Total Taxable Resources for State i

C_i = Cost-of-Services Index for State i (Formula A3)

P_i = Population-at-Risk Index for State i (Formula A2)

The Fiscal Capacity Index (F_i) is determined annually and represents, or is a proxy for, the relative ability of a State to pay for substance abuse prevention and treatment services. It is a factor whose value declines with increasing fiscal capacity (effectively fiscal resources) of a State.

The first step in the determination of the Fiscal Capacity Index for all States other than DC is the collection and compilation of Total Taxable Resources (TTR) data for the most recent 3 years for the States (including DC) from the Office of Macroeconomic Policy (OEP), U.S. Department of the Treasury. Three-year averages of TTR ($\overline{TTR_i}$) are then calculated for all the States (and DC).

The next step in the calculations is to divide the 3-year average TTR for a State (other than DC) by the Cost-of-Services Index (C_i) for that State, effectively producing a cost-adjusted average TTR for the subject State. This term is shown in the top portion of the numerator appearing on the right-hand side of Formula A6.

The sum of cost-adjusted average TTR for all the States (including DC) is calculated, and then divided into the cost-adjusted average TTR value for the subject State. The sum of the cost-adjusted average TTR for all States is shown in the bottom portion of the numerator (which can also be referred to as the denominator term in the numerator) in the formula. The result of this step is to effectively produce a cost-adjusted, relative, average TTR for the subject State.

The next step is to calculate a term equal to the Population-at-Risk Index for the subject State (P_i, other than DC) divided by the sum of the Population-at-Risk Indexes for all the States (including DC), and divide this term into the cost-adjusted, relative, average TTR for the subject

State. This population-related term is shown in the denominator of the expression on the right-hand side of Formula A6. The result of this step is to effectively produce a cost-adjusted, population-adjusted, relative, average TTR for the subject State (other than DC).

This value is multiplied by 0.35, and then subtracted from 1, to yield the unconstrained Fiscal Capacity Index for a State (other than DC). However, if this unconstrained value is less than 0.4, then the final (constrained) Fiscal Capacity Index for the State (F_i) is set equal to 0.4. Refer to Appendix Tables E6-E9 for an example of the calculation of the Fiscal Capacity Index and its components.

Fiscal Capacity Index Formula for DC (F_{DC})

(A7)

$$F_{DC} = \max\left[0.4, 1 - 0.35 \times \left(\frac{\overline{TPI_{DC}} / C_{DC}}{\sum_{i=1}^{51} \overline{TPI_i} / C_i} \Big/ \frac{P_{DC}}{\sum_{i=1}^{51} P_i} \right)\right]$$

$$\{i(State) = 1, 2, ..., 51\}$$

where F_{DC} = Fiscal Capacity Index for DC

$\overline{TPI_{DC}}$ = Most recent 3 years' average Total Personal Income for DC

C_{DC} = Cost-of-Services Index for DC (Formula A3)

P_{DC} = Population-at-Risk Index for DC (Formula A2)

$\overline{TPI_i}$ = Most recent 3 years' average Total Personal Income for State *i*

C_i = Cost-of-Services Index for State *i* (Formula A3)

P_i = Population-at-Risk Index for State *i* (Formula A2)

The Fiscal Capacity Index for DC (F_{DC}) is determined annually and represents, or is a proxy for, the relative ability of DC to pay for substance abuse prevention and treatment services. It is a factor very similar in construction and meaning to the Fiscal Capacity Indexes of the States, whose value declines with increasing fiscal capacity (effectively fiscal resources) of DC.

The first step in the determination of the Fiscal Capacity Index for DC is the collection and compilation of Total Personal Income (TPI) data for the States and DC for the most recent 3 years from the Bureau of Economic Analysis (BEA), U.S. Department of Commerce. Three-year averages of TPI are then calculated for all the States ($\overline{TPI_i}$) and DC ($\overline{TPI_{DC}}$).

The next step in the calculations is to divide the 3-year average TPI for DC by the Cost-of-Services Index for DC (C_{DC}), effectively producing a cost-adjusted, average TPI for DC. This term is shown in the top portion of the numerator appearing on the right-hand side of Formula A7.

The sum of cost-adjusted average TPI for all the States (including DC) is calculated, and then divided into the cost-adjusted average TPI value for DC. The sum of the cost-adjusted average TPI for all States and DC is shown in the bottom portion of the numerator (which can also be referred to as the denominator term in the numerator) in the formula. The result of this step is to effectively produce a cost-adjusted, relative, average TPI for DC.

The next step is to calculate a term equal to the Population-at-Risk Index for DC (P_{DC}) divided by the sum of the Population-at-Risk Indexes (P_i) for all the States and DC, and divide this term into the cost-adjusted, relative, average TPI for DC. This population-related term is shown in the denominator of the expression on the right-hand side of Formula A7. The result of this step is to effectively produce a cost-adjusted, population-adjusted, relative, average TPI for DC.

This value is first multiplied by 0.35, and then subtracted from 1, to yield the unconstrained Fiscal Capacity Index for DC. However, if this unconstrained value is less than 0.4, then the final (constrained) Fiscal Capacity Index for DC (F_{DC}) is set equal to 0.4. Refer to Appendix Tables E7-E9 for an example of the calculation of the Fiscal Capacity Index and its components.

Formula for Determining Below/Equal-to-Statutory-Minimum Allotment (BESMA) States vs. Above-Statutory-Minimum Allotment (ASMA) States

(A8)

$$\textit{When } A_{i,\,RFY,\,Baseline} \le max\left[\begin{array}{l}\left(A_{i,\,RFY-1}\times(1+0.3065r)\right),\\ min\left(\left(0.00375\times AP_{RFY}\right),\left(A_{i,RFY-1}\times(1+3r)\right)\right)\end{array}\right]$$

$$A_{i,BESMA} = max\left[\begin{array}{l}\left(A_{i,RFY-1}\times(1+0.3065r)\right),\\ min\left(\left(0.00375\times AP_{RFY}\right),\left(A_{i,RFY-1}\times(1+3r)\right)\right)\end{array}\right]$$

$$\textit{otherwise} \qquad A_{i,ASMA} = A_{i,\,RFY,\,Baseline}$$

$$\{i\ (State) = 1, 2, ..., 51\}$$

where $A_{i,\ RFY\text{-}1}$ = Allotment for State i for the year prior to the reference fiscal year

r = Rate of increase in appropriation between prior and reference fiscal years as defined below:

$$r = \frac{AP_{RFY} - AP_{RFY-1}}{AP_{RFY-1}}$$

AP_{RFY} = Appropriation amount for the reference fiscal year

$AP_{RFY\text{-}1}$ = Appropriation amount for the year prior to the reference fiscal year

$A_{i,\ RFY,\ Baseline}$ = Baseline allotment for State i for the reference fiscal year

$A_{i,\ BESMA}$ = Allotment for BESMA State i (= 1…, N_1)

$A_{i,\ ASMA}$ = Allotment for ASMA State i (= 1…, N_2)

Determination of BESMA and ASMA States follows the calculation of the statutory minimum allotments, using the following steps. First, what is referred to as the "In General" minimum allotment constraint is determined, which is shown as the first argument within the square brackets in Formula A8. This ensures that no State receives less than the amount that it received for the prior fiscal year ($A_{i,RFY\text{-}1}$) increased by 30.65 percent (the factor "0.3065") of the proportionate increase (the variable "r") in the total appropriation amount between the prior fiscal year ($AP_{RFY\text{-}1}$) and current fiscal year (AP_{RFY}).

Second, what is referred to as the "Exception" minimum allotment constraint is determined, which is shown as the first argument within the "min" function parentheses in Formula A8. This ensures that no State receives less than 0.375 percent (the factor "0.00375") of the current fiscal year appropriation amount (AP_{RFY}).

Third, the "Limitation" minimum allotment constraint is calculated as the second argument within the "min" function in Formula A8. This constraint ensures that no State receives more than the amount that it received for the prior fiscal year ($A_{i,RFY\text{-}1}$) increased by 300 percent (the factor "3") of the proportionate increase (the variable "r") in the total appropriation amount between the prior fiscal year ($AP_{RFY\text{-}1}$) and current fiscal year (AP_{RFY}).

Fourth, the statutory minimum allotment is calculated as the maximum of the “In General” allotment constraint and the quantity that is the minimum of the “Exception” and “Limitation” allotment constraints. Refer to Appendix Table E11 as an example of the statutory minimum allotment calculations.

In the final step, the baseline allotments must be compared with statutory minimum allotments. If any baseline allotments are less than or equal to the statutory minimums, then those are increased in subsequent calculations to the statutory minimums or held constant, respectively; these allotments are referred to as "BESMA" ($A_{i,\ BESMA}$). States for which baseline allotments are greater than the statutory minimums are referred to as "ASMA" ($A_{i,\ ASMA}$), and in subsequent calculations funding from ASMA States is redistributed to BESMA States in order to increase the latter from their baseline values to the statutory minimums. The allotment values for ASMA States are set equal to baseline allotments. Refer to Appendix Tables E12-E14 as an example of determining BESMA and ASMA States.

Scaled Allotment Formula for ASMA States

(A9)

$$A_{\substack{ij,Scaled \\ ASMA}} = \left(A_{ij,ASMA} \times \frac{0.95 \times 0.985 \times AP_{RFY} - \sum_{i=1}^{N_1} A_{ij,BESMA}}{\sum_{i=1}^{N_2} A_{ij,ASMA}} \right)$$

$$\{i\ (ASMA\,State) = 1, 2, ..., N_2\}$$

$$\{i\ (BESMA\,State) = 1, 2, ..., N_1\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

where $A_{ij,\ Scaled\ ASMA}$ = Scaled allotment for ASMA State *i* in Cycle *j* for the reference fiscal year

$A_{ij,\ ASMA}$ = Allotment for ASMA State *i* in Cycle *j* for the reference fiscal year

$A_{ij,\ BESMA}$ = Allotment for BESMA State *i* in Cycle *j* for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

0.95 = Proportion of AP_{RFY} disbursed to States and territories

0.985 =Proportion of State-Territory allotment disbursed to States

Scaled allotments for ASMA States in Cycle *j* require comparison with statutory minimums and may require constraining or re-scaling through an iterative process until re-scaled allotments ($A_{ij,\ Scaled\ ASMA}$) meet the following criteria:

$$A_{ij,Scaled\ ASMA} > \max \left[\begin{array}{l} \left(A_{i,RFY-1} \times (1 + 0.3065r) \right), \\ min\left((0.00375 \times AP_{RFY}), \left(A_{i,RFY-1} \times (1 + 3r) \right) \right) \end{array} \right]$$

$$\{i\ (ASMA\,State) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

In order for the allotments of BESMA States to be increased from their baseline values to statutory minimum values, funding must be redistributed to them from ASMA States. This redistribution is effected by the application of a "Scale Factor" to the allotments of ASMA States in one or multiple redistribution cycles, which reduces such allotments by a uniform proportion and allows just enough funding to be transferred to BESMA States so that statutory minimums are achieved.

Formula A9 shows how scaled allotments for ASMA States ($A_{ij,\ Scaled\ ASMA}$) are calculated, which is simply the multiplication of the unscaled allotment for that cycle ($A_{ij,\ ASMA}$) by a Scale Factor for that cycle ("*j*"). The term on the right-hand side of the quantity within the large parentheses is the Scale Factor, which is a ratio less than unity and consists of a numerator and denominator.

The numerator of the Scale Factor is the total funding available for ASMA States in the redistribution cycle, which is itself the difference of two values. The first term in the numerator is the total funding available in the reference (current) year to all States, which is the total appropriation amount (AP_{RFY}) less 5 percent of the appropriation amount for administration and technical assistance (hence the 0.95 factor) less 1.5 percent of this net amount that is slated for territory allotments (hence the 0.985 factor). The second term in the numerator is the sum of the allotments ($A_{ij,\ BESMA}$) for BESMA States in the redistribution cycle. The difference of these two terms is thus the total funding available for ASMA States in the redistribution cycle.

The denominator of the Scale Factor is the sum of the allotments for ASMA States in the redistribution cycle *prior to scaling*, and is thus the total funding that the ASMA States in the cycle should receive if they were not being scaled in that cycle. The Scale Factor is thus a ratio equal to the funding that is available for the ASMA States in the cycle divided by the funding that they would otherwise receive in the cycle without further scaling.

The allotments for ASMA States prior to scaling in a given redistribution cycle are either the baseline allotments, if it is the first cycle, or scaled allotments from the prior cycle, if it is the second or later redistribution cycle. After each redistribution cycle, all scaled ASMA's must be compared with statutory minimums and, if any are less than or equal to statutory minimums, then any such allotments are themselves BESMA in subsequent redistribution cycles. As an example, these calculations are shown in Appendix Tables E12-E14.

Final Allotment Formula (States)
(A10)

$$A_{i,Final} = A_{ij=m,BESMA} \quad for\ \{i = 1, 2, ..., N_1\}$$
$$A_{i,Final} = A_{ij=m,Scaled\ ASMA} \quad for\ \{i = 1, 2, ..., N_2\}$$

where $A_{i,\ Final}$ = Final allotment for State *i* for the reference fiscal year

$A_{ij=m,\ BESMA}$ = Allotment for BESMA State *i* in the last Cycle (*j*=*m*) for the reference fiscal year

$A_{ij=m,\ Scaled\ ASMA}$ = Scaled allotment for ASMA State *i* in the last Cycle (*j*=*m*) for the reference fiscal year

The calculations to determine final State allotments ($A_{i,\ Final}$) may require multiple funding redistribution cycles in order that all States receive at least the statutory minimums. When this condition has been achieved after a sufficient (*m*) number of cycles, then final allotments are either statutory minimums ($A_{ij=m,\ BESMA}$) for BESMA States or are scaled allotments ($A_{ij=m,\ Scaled\ ASMA}$) for ASMA States. Refer to Appendix Table E15 as an example of final allotment calculations.

Scenario 2: Appropriation for the Reference Fiscal Year Decreased or Remained the Same as the Prior Year's Amount

Formula for States
(A11)

$$A_{i,RFY} = A_{i,RFY-1} \times \frac{AP_{RFY}}{AP_{RFY-1}}$$
$$\{i(State) = 1, 2, ..., 51\}$$

where $A_{i, RFY}$ = Allotment for State *i* for the reference fiscal year

$A_{i, RFY-1}$ = Allotment for State *i* for the year prior to the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

AP_{RFY-1} = Appropriation amount for the year prior to the reference fiscal year

In the event that the appropriation amount for the current (reference) fiscal year (AP_{RFY}) is either less than or equal to the amount for the prior fiscal year (AP_{RFY-1}), then a very simple calculation is performed to determine State allotments. The allotments for the reference fiscal year ($A_{i,RFY}$) are determined by multiplying the allotments for the prior fiscal year ($A_{i,RFY-1}$) by the ratio of the reference year appropriation amount to the prior year appropriation amount, that is, by the ratio AP_{RFY}/AP_{RFY-1}. State allotments for the reference fiscal year are thus either reduced proportionately from the prior year if the appropriation amount is reduced, or kept unchanged if the appropriation amount is unchanged. Refer to Appendix Table E17 as an example of Scenario 2 allotment calculations for States.

Formula for Apportioning Minnesota Allotment between Red Lake Indians and the Rest of Minnesota (Scenarios 1 and 2)
(A12)

$$A_{RLI, RFY} = 0.0240535 \times A_{MN, RFY}$$
$$A_{MN-RLI, RFY} = A_{MN, RFY} - A_{RLI, RFY}$$

where $A_{RLI, RFY}$ = Allotment for Red Lake Indians of Minnesota for the reference fiscal year

$A_{MN, RFY}$ = Allotment for Minnesota for the reference fiscal year

$A_{MN-RLI, RFY}$ = Allotment for Minnesota excluding Red Lake Indians for the reference fiscal year

0.0240535 = Proportion of Minnesota allotment that Red Lake Indians receive

A special situation exists in the determination of the final allotment for the State of Minnesota. Minnesota is treated the same as all other States via the application of Formulas A1-A10, or Formula A11, as applicable, for the reference fiscal year, with the determination of a final allotment for Minnesota ($A_{MN, RFY}$).

However, the Red Lake Band of the Chippewa Tribe in Minnesota receives an allotment ($A_{RLI, RFY}$) directly from SAMHSA, which is equal to 2.40535 percent (hence the factor 0.0240535 in the formula) of the allotment for Minnesota; this proportion was established during, and has been unchanged since, FY 1992. The remainder of Minnesota receives an

allotment ($A_{MN\text{-}RLI,\ RFY}$) equal to the total allotment for Minnesota less the allotment received by the Red Lake Indians. As an example, apportioning of the Minnesota allotment is shown in Appendix Table E15.

Baseline Formula for Territories (Scenarios 1 and 2)
(A13)

$$A_{i,RFY,\ Baseline} = \left(0.95 \times 0.015 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{8} P_i} \right)$$

$$\{ i(Territory) = 1, 2, ..., 8 \}$$

where $A_{i,\ RFY,\ Baseline}$ = Baseline allotment for Territory i for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

P_i = Total civilian population for Territory i (recent census)

0.95 = Proportion of AP_{RFY} disbursed to States and territories

0.015 = Proportion of State-Territory allotment disbursed to territories

The appropriation amount for the program (AP_{RFY}) for a given, or "reference," fiscal year is determined annually by the Congress. Five percent of the appropriated amount is used by DHHS/SAMHSA for data collection to determine the incidence and prevalence of substance abuse and for technical assistance and program evaluations relevant to substance abuse treatment and prevention, while 95 percent of the appropriation is allocated among the States (including DC) and territories (consisting of five current and three former territories) hence the factor "0.95" used in the formula. Of the amount allocated to States and territories, 1.5 percent is distributed to the territories (hence the factor "0.015" used in the formula), which is referred to as the "Territory Subtotal."

The initial or "baseline" allotment for a territory ($A_{i,RFY,Baseline}$) is determined exclusively by the proportion of the civilian population of all territories that resides in the subject territory. The share that a territory receives of the Territory Subtotal is equal to the ratio formed by the civilian population of the territory (P_i) divided by the sum of the civilian populations of all territories. The baseline allotment for a territory is then determined as the product of this ratio (the territory's share) with the Territory Subtotal (the funding available to all the territories).

Formula for Determining Below/Equal-To-Statutory-Minimum Allotment (BESMA) Territories vs. Above-Statutory-Minimum Allotment (ASMA) Territories
(A14)

$$\begin{aligned} &When\ A_{i,RFY,Baseline} \le \$50,000 && A_{i,BESMA} = \$50,000 \\ &otherwise && A_{i,ASMA} = A_{i,\ RFY,\ Baseline} \\ &\{ i\ (Territories) = 1, 2, ..., 8 \} \end{aligned}$$

where $A_{i,\ RFY,\ Baseline}$ = Baseline allotment for Territory i for the reference fiscal year

$A_{i,\ BESMA}$ = Allotment for BESMA Territory i (=1…, N_1)

$A_{i,\ ASMA}$ = Allotment for ASMA Territory i (=1…, N_2)

For territories, the statutory minimum allotment is $50,000. If any baseline allotments are less than or equal to this statutory minimum, then those are increased to this minimum or held constant. These allotments are referred to as "BESMA" ($A_{i,\ BESMA}$). Territories for which baseline allotments are greater than the statutory minimum are referred to as ASMA ($A_{i,\ ASMA}$) territories, and in subsequent calculations funding from ASMA territories is redistributed to BESMA territories in order to increase the latter from their baseline values to the statutory minimum. Refer to Appendix Table E16 for an example showing that no allotments fell below the statutory minimum of $50,000, and hence, there were no BESMA territories, meaning that all territories were ASMA territories.

Scaled Allotment Formula for ASMA Territories
(A15)

$$A_{ij,Scaled\ ASMA} = \left(A_{ij,ASMA} \times \frac{0.95 \times 0.015 \times AP_{RFY} - \sum_{i=1}^{N_1} A_{ij,\ BESMA}}{\sum_{i=1}^{N_2} A_{ij,ASMA}} \right)$$

$$\{i\ (BESMA\ Territory) = 1, 2, ..., N_1\}$$

$$\{i\ (ASMA\ Territory) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

where $A_{ij,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Territory i in Cycle j for the reference fiscal year

$A_{ij,\ ASMA}$ = Allotment for ASMA Territory i in Cycle j for the reference fiscal year

$A_{ij,\ BESMA}$ = Allotment for BESMA Territory i in Cycle j for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

0.95 = Proportion of AP_{RFY} for disbursement to States and territories

0.015 = Proportion of State-Territory allotment for disbursement to territories

Scaled allotments for ASMA territories in Cycle j require comparison with the statutory minimum and may require constraining or re-scaling through an iterative process until re-scaled allotments ($A_{ij,\ Scaled\ ASMA}$) meet the following criterion:

$$A_{ij,\ Scaled\ ASMA} > \$50,000$$

$$\{i\ (ASMA\ Territory) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

where $A_{ij,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Territory *i* in Cycle *j* for the reference fiscal year.

In order for the allotments of BESMA territories to be increased from their baseline values to the statutory minimum value, funding must be redistributed to them from the allotments for ASMA territories. This redistribution is effected by the application of a "Scale Factor" to the allotments of ASMA territories in one or multiple redistribution cycles, which reduces such allotments by a uniform proportion and allows just enough funding to be transferred to BESMA territories so that the statutory minimum is achieved.

Formula A15 shows how scaled allotments for ASMA territories ($A_{ij,\ Scaled\ ASMA}$) are calculated, which is simply the multiplication of the unscaled allotment for that cycle ($A_{ij,\ ASMA}$) by a Scale Factor for that cycle ("*j*"). The term on the right-hand side of the quantity within the large parentheses is the Scale Factor, which is a ratio less than unity and consists of a numerator and denominator.

The numerator of the Scale Factor is the total funding available for ASMA territories in the redistribution cycle, which is itself the difference of two values. The first term in the numerator is the total funding available in the reference (current) year to all territories, which is the total appropriation amount (AP_{RFY}) less 5 percent of the appropriation amount for administration and technical assistance (hence the 0.95 factor) less 98.5 percent of this net amount that is slated for State allotments (hence the 0.015 factor). The second term in the numerator is the sum of the allotments ($A_{ij,\ BESMA}$) for BESMA territories in the redistribution cycle. The difference of these two terms is thus the total funding available for ASMA territories in the redistribution cycle.

The denominator of the Scale Factor is the sum of the allotments for ASMA territories in the redistribution cycle *prior to scaling*, and is thus the total funding that the ASMA territories in the cycle should receive if they were not being scaled in that cycle. The Scale Factor is thus a ratio equal to the funding that is available for the ASMA territories in the cycle divided by the funding that they would otherwise receive in the cycle without further scaling.

The allotments for ASMA territories prior to scaling in a given redistribution cycle are either the baseline allotments, if it is the first cycle, or scaled allotments from the prior cycle, if it is the second or later redistribution cycle. After each redistribution cycle, all scaled ASMAs must be compared with the statutory minimum and, if any are less than or equal to the statutory minimum, then any such allotments are themselves BESMA in subsequent redistribution cycles. As noted earlier, in reference to the example shown in Appendix Table E16, since there were no BESMA territories (i.e., all territories are ASMA territories), ASMA-scaling was not needed.

Final Allotment Formula (Territories)
(A16)

$$A_{i,Final} = A_{ij=m,BESMA} \ \ for\left\{i = 1,2,...,N_1\right\}$$
$$A_{i,Final} = A_{ij=m,Scaled\ ASMA} \ \ for\left\{i = 1,2,...,N_2\right\}$$

where $A_{i,\ Final}$ = Final allotment for Territory *i* for the reference fiscal year

$A_{ij=m,\ BESMA}$ = Allotment for BESMA Territory *i* in last Cycle (*j*=*m*) for the reference fiscal year

$A_{ij=m,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Territory *i* in last Cycle (*j*=*m*) for the reference fiscal year

The calculations to determine final territory allotments ($A_{i\ ,Final}$) may require multiple funding redistribution cycles in order that all territories receive at least the statutory minimum. When this condition has been achieved after a sufficient (*m*) number of cycles, then final allotments are either the statutory minimum ($A_{ij=m,\ BESMA}$) for BESMA territories or are scaled allotments ($A_{ij=m,\ Scaled\ ASMA}$) for ASMA territories. Refer to Appendix Table E16 as an example of allotment calculations for territories.

Table 2.1 Data Elements and Data Sources for SAPT BG Calculations

No.	Data Elements	Data Sources
(For 50 States and DC)		
1	Population Estimates (Population-at-Risk Index Calculations)	U.S. Census Bureau
2	Resident Population and Population of Urbanized Areas at Ages 18-24 (Population-at-Risk Index Calculations)	U.S. Census Bureau (2000 Decennial Census)
3	Wage Data (Cost-of-Services Index Calculations)	U.S. Census Bureau (2000 Decennial Census—16 Percent Sample)
4	Wage Data for Base Year and Recent Year (Cost-of-Services Index Calculations)	CMS
5	40^{th} and 50^{th} Percentile Fair Market Rent Estimates (Cost-of-Services Index Calculations)	HUD
6	Population Estimates by County/Subcounty (Cost-of-Services Index Calculations)	U.S. Census Bureau
7	Total Taxable Resources (Fiscal Capacity Index Calculations)	Department of Treasury/Office Of Economic Policy
8	Total Personal Income (Fiscal Capacity Index Calculations)	U.S. Department of Commerce/Bureau of Economic Analysis
9	SAPT BG Allotments by State and Appropriation Amount for Prior Fiscal Year; and Appropriation Amount for the Current Fiscal Year	SAMHSA
(For 8 Territories)		
10	Civilian Population (all ages combined)	U.S. Census Bureau and census for three former territories

Note: All Data Elements are required for Scenario 1 calculations, while Data Elements (9) and (10) are required for Scenario 2 calculations.

Figure 2.1 SAPT BG Calculation Flowchart (Fifty States and the District of Columbia)

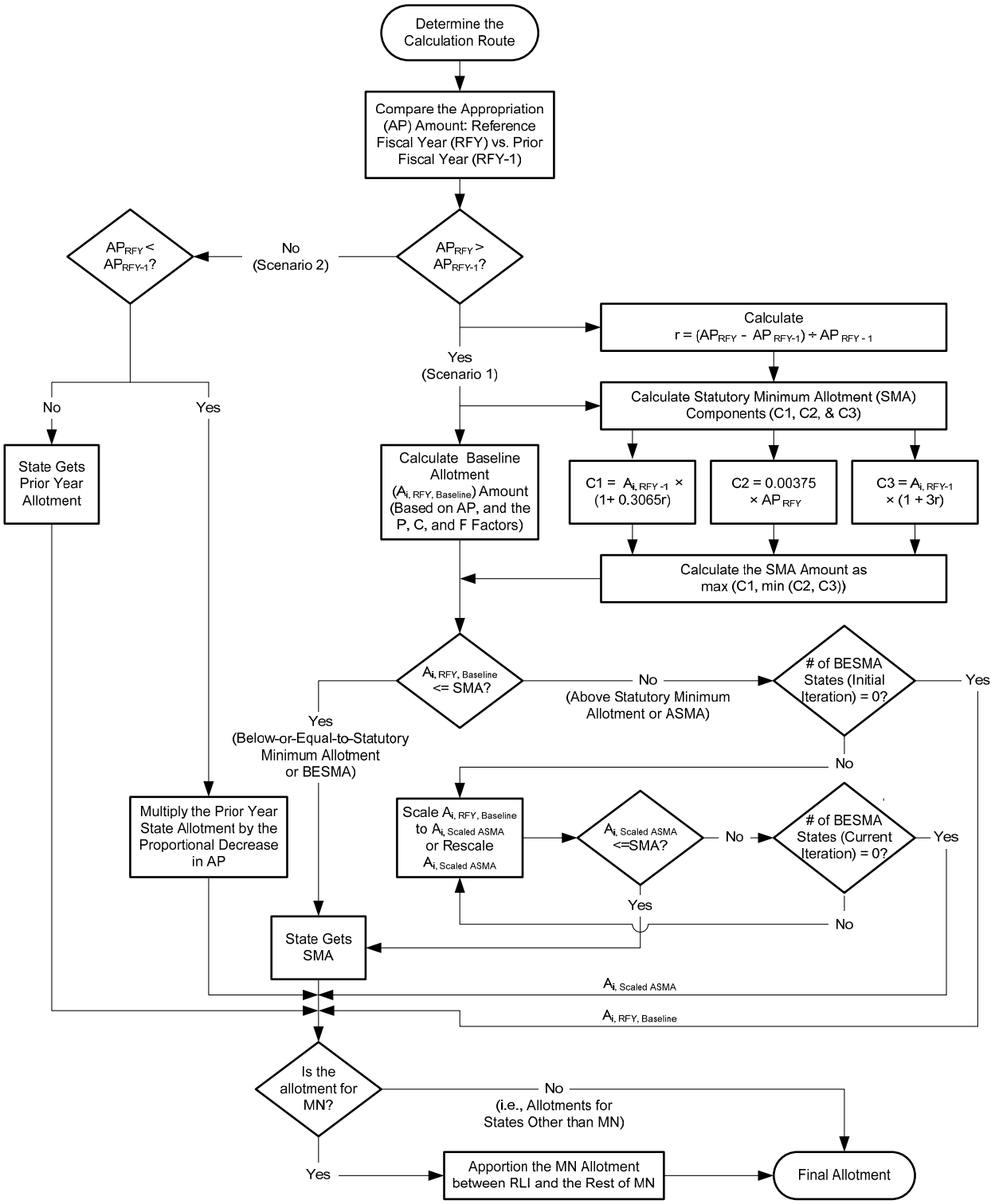
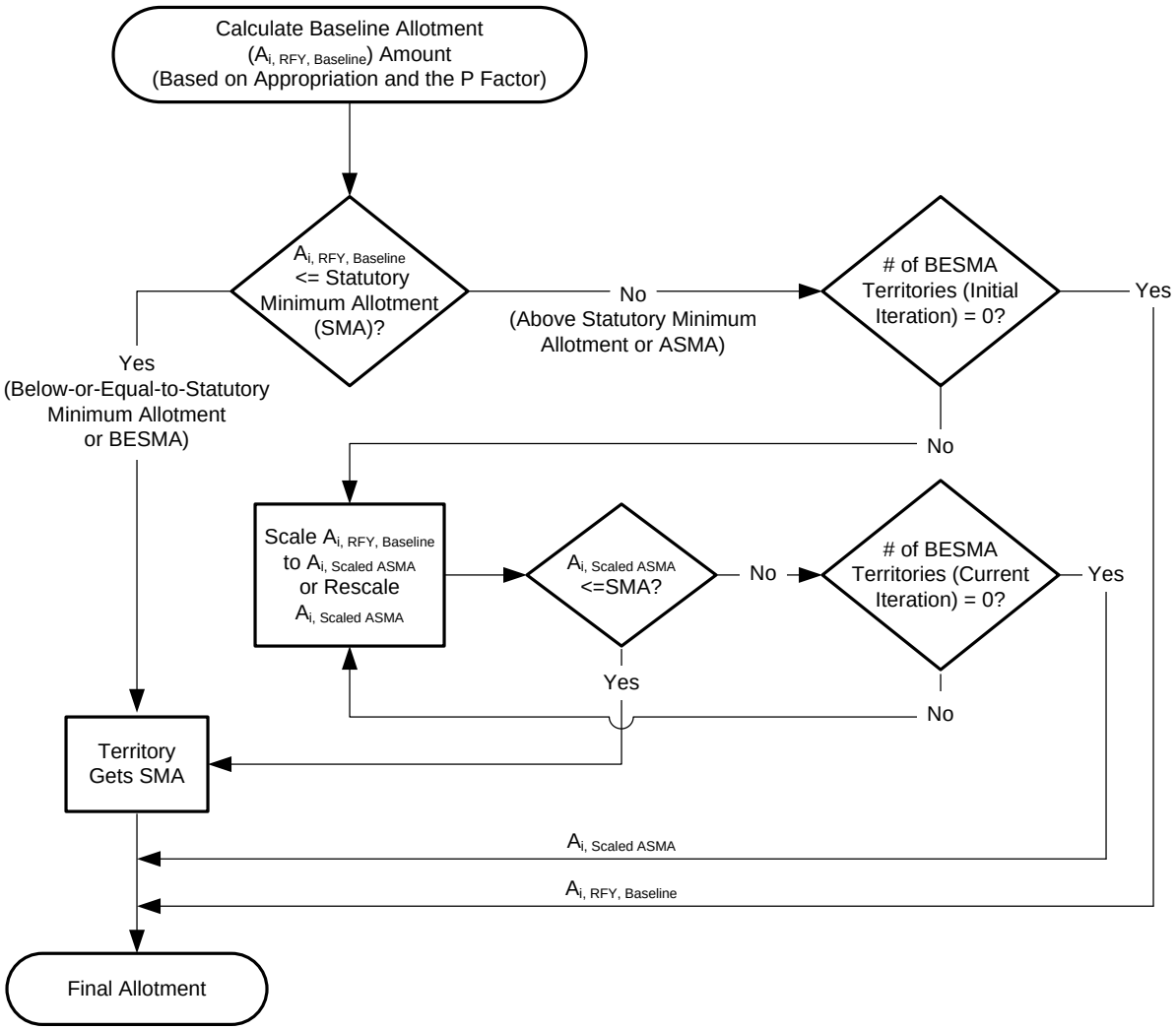


Figure 2.2 SAPT BG Calculation Flowchart (Eight Territories)



3. Mental Health Services Block Grant (MH BG) Allotment Formulas

The Office of Applied Studies (OAS) of the Substance Abuse and Mental Health Services Administration (SAMHSA) determines annually the allocation of funding to States and territories for the MH BG in accordance with enabling legislation. The formulas presented below are mathematical expressions of the rules laid out in the legislation and subsequent Reauthorizations.

As the law requires, 5 percent of the appropriated amount for a given fiscal year is first set aside for SAMHSA to cover the costs for data collection, technical assistance, and program evaluation. Of the remaining 95 percent of the appropriated amount, 98.5 percent is distributed to 50 States and the District of Columbia (DC) and 1.5 percent is distributed to five territories and three former territories. The initial or "baseline" allotments for the States and DC are determined by the relative share of the Weighted Population-at-Risk Index, the Cost-of-Services Index, and the Fiscal Capacity Index. However, the allotment calculations for territories are solely based on the relative share of the population. The baseline allotments are adjusted, if and as necessary, so that statutory minimum allotment constraints are satisfied. This is accomplished via an iterative calculation algorithm which uniformly and proportionately reduces the baseline funding of some Domains and redistributes it to other Domains in order that all minimum allotment constraints are fully satisfied. The MH BG formulas are presented in the following sequence.

Baseline Allotment Formula (50 States and DC)
(B1)

$$A_{i,RFY,\ Baseline} = 0.95 \times 0.985 \times AP_{RFY} \times \left(\frac{P_i \times C_i \times F_i}{\sum_{i=1}^{51} (P_i \times C_i \times F_i)} \right)$$

$$\{ i(State) = 1, 2, ..., 51 \}$$

where $A_{i,\ RFY,\ Baseline}$ = Baseline allotment for State *i* for the reference fiscal year

AP_{RFY} = Total appropriation amount for the reference fiscal year

P_i = Weighted Population-at-Risk (ages 18+) for State *i* (Formula B2)

C_i = Cost-of-Services Index for State *i* (Formula B3)

F_i = Fiscal Capacity Index for State *i* (Formulas B6 and B7)

0.95 = Proportion of AP_{RFY} for disbursement to States and territories

0.985 = Proportion of State-Territory allotment for disbursement to States

According to this formula, the appropriation amount for the program (AP_{RFY}) for a given, or "reference," fiscal year is determined annually by the Congress. Five percent of the appropriated amount is used by the Department of Health and Human Services (DHHS)/

Substance Abuse and Mental Health Services Administration (SAMHSA) to collect data on mental health services and patients and conduct evaluations of programs to prevent and treat mental health problems, while 95 percent of the appropriation is allocated among the States (including DC) and territories (hence the factor "0.95" used in the formula). Of the amount allocated to States and territories, 98.5 percent is distributed to the States (hence the factor "0.985" used in the formula), which is referred to as the "State Subtotal." Refer to Appendix Table F1 as an example of calculations of the amounts available for States, territories, and SAMHSA set-aside.

The initial or "baseline" allotment for a State ($A_{i,RFY,Baseline}$) is determined by three factors: the Weighted Population-at-Risk Index (P_i), the Cost-of-Services Index (C_i), and the Fiscal Capacity Index (F_i). The share that a State receives of the State Subtotal is equal to the ratio formed by the product of the P, C, and F factors for the State divided by the sum of the products of the P, C, and F factors for all the States; this ratio is shown within large parentheses on the right-hand side of the formula. The baseline allotment for a State is then determined as the product of this ratio (the State's share) with the State Subtotal (the funding available to all the States). Refer to Appendix Table F6 for an example of baseline allotment calculations.

Weighted Population-at-Risk Formula (P_i)
(B2)

$$P_i = 0.107 \times P_{18\text{-}24,i} + 0.166 \times P_{25\text{-}44,i} + 0.099 \times P_{45\text{-}64,i} + 0.082 \times P_{65+,i}$$
$$\{i(State) = 1, 2, ..., 51\}$$

where P_i = Weighted Population-at-Risk for State i

$P_{18\text{-}24,\,i}$ = Population estimate for ages 18-24 for State i

$P_{25\text{-}44,\,i}$ = Population estimate for ages 25-44 for State i

$P_{45\text{-}64,\,i}$ = Population estimate for ages 45-64 for State i

$P_{65+,\,i}$ = Population estimate for ages 65+ for State i

The Weighted Population-at-Risk (P_i) is determined annually and represents, or is a proxy for, the risk of mental health problems in a State. It consists of four components, each consisting of the number of individuals in a specific population age group within a State multiplied by a weighting factor.

The first component in the equation is the State resident population aged 18-24 ($P_{18\text{-}24,i}$), with a weight of 0.107; the second component is the State resident population aged 25-44 ($P_{25\text{-}44,i}$), with a weight of 0.166; the third component is the State resident population aged 45-64 ($P_{45\text{-}64,i}$), with a weight of 0.099; and the fourth component is the State resident population aged 65 and over ($P_{65+,i}$), with a weight of 0.082. The most current State population estimates by age are obtained annually from the U.S. Census Bureau to calculate the Population-at-Risk. Refer to Appendix Table F2 for an example of the calculation of the Weighted Population-at-Risk.

Cost-of-Services Index Formula (C_i)
(B3)

$$C'_i = 0.75W_i + 0.15R_i + 0.10S_i$$
$$C_i = 0.9 \text{ if } C'_i < 0.9$$
$$C_i = 1.1 \text{ if } C'_i > 1.1$$
$$Otherwise$$
$$C_i = C'_i$$
$$\{i(State) = 1, 2, ..., 51\}$$

where C'_i = Unconstrained Cost-of-Services Index for State *i*

C_i = Constrained Cost-of-Services Index for State *i*

W_i = Wage Subindex (proxy for labor costs) for State *i* (Formula B4)

R_i = Rental Subindex (proxy for facility costs) for State *i* (Formula B5)

S_i = Supply Subindex (proxy for materials costs) for State *i* (The value of this subindex is 1 for all States.)

The Cost-of-Services Index is determined triennially (i.e., it is revised every third fiscal year rather than annually) and the most current index is being used for the determination of allotments for fiscal year (FY) 2007, FY 2008, and FY 2009. It represents, or is a proxy for, the relative costs of providing mental health-related services in a State.

The Cost-of-Services Index consists of three component "subindexes," each of which is weighted. The Wage Subindex (W_i) has a weight of 75 percent, the Rental Subindex (R_i) has a weight of 15 percent, and the Supplies Subindex (S_i) has a weight of 10 percent, hence the coefficients 0.75, 0.15, and 0.10 in the formula for the unconstrained Cost-of-Services Index (C'_i), respectively.

The Wage and Rental Subindexes are proxies for labor and facility costs, respectively, and are recalculated every third fiscal year when the Cost-of-Services Index is revised. However, the Supplies Subindex, which is a proxy for materials costs, is not recalculated but rather has a perpetual, uniform value of 1.0 for all States. This implies that all States have equal access to a national market for supplies, and thus the relative costs for the same are assumed to not vary geographically.

The final, or constrained, Cost-of-Services Index (C_i) is then set to a value of 0.9 if C' is less than 0.9, or set to a value of 1.1 if C'_i is greater than 1.1. If the unconstrained index is equal to or greater than 0.9 and less than or equal to 1.1, then the final constrained index is set equal to the unconstrained index. Refer to Appendix Tables E3-E5 for an example of the calculations of the Cost-of-Services Index and its subindexes. Note that the same index and subindex values are used in the allotment calculations for both Block Grants.

Wage Subindex Formula (W_i)
(B4)

$$W_i = \frac{\left(\sum_{j=1}^{5} S_{ij,CENSUS_BY} \Big/ \sum_{j=1}^{5} H_{ij,CENSUS_BY}\right) \times \frac{\left(\sum_{k=1}^{N} S_{ik,CMS_RY} \Big/ \sum_{k=1}^{N} H_{ik,CMS_RY}\right)}{\left(\sum_{k=1}^{N} S_{ik,CMS_BY} \Big/ \sum_{k=1}^{N} H_{ik,CMS_BY}\right)}}{\left(\sum_{i=1}^{51}\sum_{j=1}^{5} S_{ij,CENSUS_BY} \Big/ \sum_{i=1}^{51}\sum_{j=1}^{5} H_{ij,CENSUS_BY}\right) \times \frac{\left(\sum_{i=1}^{51}\sum_{k=1}^{N} S_{ik,CMS_RY} \Big/ \sum_{i=1}^{51}\sum_{k=1}^{N} H_{ik,CMS_RY}\right)}{\left(\sum_{i=1}^{51}\sum_{k=1}^{N} S_{ik,CMS_BY} \Big/ \sum_{i=1}^{51}\sum_{k=1}^{N} H_{ik,CMS_BY}\right)}}$$

$\{i(State) = 1, 2, ..., 51\}$

$\{j(Occupation - Industry) = 1, 2, ...5\}$

$\{k(Provider) = 1, 2, ..., N\}$

where W_i= Wage Subindex for State *i*

$S_{ij,\ Census_BY}$ =Total salary earned in occupation-industry category *j* (Counselors, Psychologists, Social Workers, Physicians and Surgeons, and Registered Nurses) in State *i* during the base year (recent decennial census)

$H_{ij,\ Census_BY}$ =Total hours worked in occupation-industry category *j* in State *i* during the base year (recent decennial census)

$S_{ik,\ CMS_BY}$ = Total wages (except for a few categories as referred to in Appendix A) paid by hospital (provider) *k* in State *i* during the base fiscal year (Centers for Medicare and Medicaid Services [CMS])

$H_{ik,\ CMS_BY}$ = Total hours (except for a few categories as referred to in Appendix A) for which wages were paid by hospital (provider) *k* in State *i* during the base fiscal year (CMS)

$S_{ik,\ CMS_RY}$ = Total wages (except for a few categories as referred to in Appendix A) paid by hospital (provider) *k* in State *i* during the most recent fiscal year (CMS)

$H_{ik,\ CMS_RY}$ = Total hours (except for a few categories as referred to in Appendix A) for which wages were paid by hospital (provider) *k* in State *i* during the most recent fiscal year (CMS)

The Wage Subindex (W_i) is a component of the Cost-of-Services Index and is a measurement of the relative labor costs required to provide mental health services in a State (including DC). Despite the complex appearance of Formula B4, the composition of the Wage Subindex is actually straightforward.

The value calculated in the numerator of the formula is an average wage rate for a given State, while the value calculated in the denominator is an average (weighted) wage rate for the United States (exclusive of territories) using the same methodology as employed for calculation of the value in the numerator. The Wage Subindex is, therefore, a ratio equal to an average State wage rate divided by an average national wage rate. It is a dimensionless (i.e., unitless)

measurement of the relative deviation of a State's average wage rate from the nation's average wage rate.

Both the State and national average wage rates consist of two parts: a base wage rate and an update factor. The base wage rate is multiplied by the update factor to yield the most recent average wage rate.

Shown within the first parentheses in the numerator, the State average base wage is determined by dividing the total salaries (earned income) of workers (working in the State, regardless of their State of residence) in five specific occupation-industry categories ($S_{ij,CENSUS_BY}$, State *i* and occupation-industry category *j*) by the associated total hours worked ($H_{ij,CENSUS_BY}$). Data used in the calculation of this average base wage rate are derived from the 16 percent sample of the most recent decennial census and provided in the form of special tabulations by the U.S. Census Bureau.

The State update factor, shown as the quotient of two terms (each within parentheses) in the second part of the numerator, is based upon source data from CMS. The denominator of this quotient consists of the State average wage rate for the "base year" (which is the same year as that used for data collection for the most recent decennial census), and is calculated by dividing the total salaries of workers in selected occupation categories in all provider facilities in the State (S_{ik,CMS_BY}, State *i* and provider *k*) by the associated total hours worked (H_{ik,CMS_BY}). The numerator of this quotient is similarly calculated from CMS-based source data for the most recent year (S_{ik,CMS_RY} and H_{ik,CMS_RY}).

The denominator of Formula B4 (i.e., the average national wage rate) is calculated in an identical manner to that described above for a State, except that relevant data are compiled within each formula component for all States rather than just for a single State. Shown within the first parentheses in the denominator, a decennial census-based average national wage rate is determined, which is then updated by a CMS-based national update factor in the second portion of the denominator. The current average national wage rate calculated is, therefore, a weighted-average value rather than a simple average of 51 State values. The calculation of the Wage Subindex of the CSI used for the determination of FY 2007-2009 Block Grant allotments is shown in Table E3 of Appendix E. As noted earlier, the same Wage Subindex values are used in the construction of the CSI in the allotment calculations for both Block Grants.

Rental Subindex Formula (R_i)
(B5)

$$R_i = \frac{\sum_{j=1}^{N}\left(POP_{ij} \times FMR_{ij}\right) \Big/ \sum_{j=1}^{N} POP_{ij}}{\sum_{i=1}^{51}\sum_{j=1}^{N}\left(POP_{ij} \times FMR_{ij}\right) \Big/ \sum_{i=1}^{51}\sum_{j=1}^{N} POP_{ij}}$$

$$\{i(State) = 1, 2, ..., 51\}$$

$$\{j(County / Subcounty) = 1, 2, ..., N\}$$

where R_i = Rental Subindex for State i

POP_{ij} = Resident population estimate (all ages) for substate area (county or subcounty) j in State i

FMR_{ij} = 40th or 50th percentile of FMR level for a four-bedroom residential unit for substate area j in State i

The Rental Subindex (R_i) is a component of the Cost-of-Services Index and is a measurement of the costs of facility space required to provide mental health services in a State (including DC) relative to the average costs for the nation. The composition of the Rental Subindex is fairly simple.

The value calculated in the numerator of the formula is an average rental rate for a State, while the value calculated in the denominator is an average (weighted) rental rate for the United States (exclusive of territories) using the same methodology as employed for calculation of the value in the numerator. The Rental Subindex is, therefore, a ratio equal to an average State rental rate divided by an average national rental rate. It is a dimensionless (i.e., unitless) measurement of the relative deviation of a State's average rental rate from the nation's average rental rate.

The State average rental rate, shown in the numerator, is a population-weighted average rental rate for the State. The rental data used as proxies for facility space costs (FMR_{ij}, State i and substate area j) are the most current 40th or 50th percentile values for four-bedroom FMRs as determined by and available from the U.S. Department of Housing and Urban Development (HUD). FMRs are defined by HUD as "the amount that would be needed to pay the gross rent (shelter rent plus utilities) of privately owned, decent, and safe rental housing of a modest (non-luxury) nature with suitable amenities" (Department of Housing and Urban Development, 2006). FMR data are reported at the county level for all States except the six New England States, and at the subcounty level (city, town, or township) for the New England States.

The population data used in the determination of the Rental Subindex are the most current substate (county and subcounty) level estimates available from the U.S. Bureau of the Census for resident population (POP_{ij}, State i and substate area j). These are used to weight the FMR data with population for all areas within the State. A population-weighted average FMR for the State is then calculated by dividing the sum of the population-weighted FMRs for all areas in the State by the total population of the State (i.e., the sum of the populations of all the areas within the State).

The denominator of Formula B5 (i.e., the average national population-weighted rental rate) is calculated in an identical manner to that described above for a State, except that data are compiled for all States rather than for a single State. The average national rental rate calculated is, therefore, a weighted-average rather than a simple average of the 51 State values. The calculation of the Rental Subindex of the CSI used for the determination of FY 2007-2009 Block Grant allotments is shown in Appendix Table E4. As noted earlier, the same Rental Subindex values are used in the construction of the CSI in the allotment calculations for both Block Grants. Furthermore, the construction of this subindex is discussed in detail in Chapter 2 and not repeated here.

Fiscal Capacity Index Formula—All but DC (F_i)
(B6)

$$F_{i\{\forall i, i\neq DC\}} = \max\left[0.4, 1-0.35\times\left(\frac{\dfrac{\overline{TTR_i}}{C_i}}{\dfrac{P_i}{\sum_{i=1}^{51} P_i}}\right)\right]$$

$$\{i(State) = 1, 2, ..., 51)\}$$

where F_i = Fiscal Capacity Index for State i (except for DC)

$\overline{TTR_i}$ = Most recent 3 years' average Total Taxable Resources for State i

C_i= Cost-of-Services Index for State i (Formula B3)

P_i = Weighted Population-at-Risk for State i (Formula B2)

The Fiscal Capacity Index (F_i) is determined annually and represents, or is a proxy for, the relative ability of a State to pay for mental health-related services. It is a factor whose value declines with increasing fiscal capacity (effectively fiscal resources) of a State.

The first step in the determination of the Fiscal Capacity Index for all States (other than DC) is the collection and compilation of Total Taxable Resources (TTR) data for the most recent 3 years for the States (including DC) from the Office of Macroeconomic Policy (OEP), U.S.

Department of the Treasury. Three-year averages of TTR ($\overline{TTR_i}$) are then calculated for all the States (and DC).

The next step in the calculations is to divide the 3-year average TTR for a State (other than DC) by the Cost-of-Services Index (C_i) for that State, effectively producing a cost-adjusted average TTR for the subject State. This term is shown in the top portion of the numerator appearing on the right-hand side of Formula B6.

The sum of cost-adjusted average TTR for all the States (including DC) is calculated, and then divided into the cost-adjusted average TTR value for the subject State. The sum of the cost-adjusted average TTR for all States is shown in the bottom portion of the numerator (which can also be referred to as the denominator term in the numerator) in the formula. The result of this step is to effectively produce a cost-adjusted, relative, average TTR for the subject State.

The next step is to calculate a term equal to the Population-at-Risk for the subject State (P_i, other than DC) divided by the sum of the weighted Populations-at-Risk for all the States (including DC), and divide this term into the cost-adjusted, relative, average TTR for the subject State. This population-related term is shown in the denominator of the expression on the right-hand side of Formula B6. The result of this step is to effectively produce a cost-adjusted, population-adjusted, relative, average TTR for the subject State (other than DC).

This value is multiplied by 0.35, and then subtracted from 1, to yield the unconstrained Fiscal Capacity Index for a State (other than DC). However, if this unconstrained value is less than 0.4, then the final (constrained) Fiscal Capacity Index for the State (F_i) is set equal to 0.4. Refer to Appendix Tables F3-F5 for an example of the calculation of the Fiscal Capacity Index and its components.

Fiscal Capacity Index Formula for DC (F_{DC})
(B7)

$$F_{DC} = \max\left[0.4, 1 - 0.35 \times \left(\frac{\dfrac{\overline{TPI_{DC}}}{C_{DC}}}{\dfrac{\sum_{i=1}^{51} \overline{\dfrac{TPI_i}{C_i}}}{\dfrac{P_{DC}}{\sum_{i=1}^{51} P_i}}} \right)\right]$$

$$\{i(State) = 1, 2, ..., 51\}$$

where F_{DC} = Fiscal Capacity Index for DC

$\overline{TPI_{DC}}$ = Most recent 3 years' average Total Personal Income for DC

C_{DC} = Cost-of-Services Index for DC (Formula B3)

P_{DC} = Weighted Population-at-Risk for DC (Formula B2)

$\overline{TPI_i}$ = Most recent 3 years' average Total Personal Income for State *i*

C_i = Cost-of-Services Index for State *i* (Formula B3)

P_i = Weighted Population-at-Risk for State *i* (Formula B2)

The Fiscal Capacity Index for DC (F_{DC}) is determined annually and represents, or is a proxy for, the relative ability of DC to pay for mental health-related services. It is a factor very similar in construction and meaning to the Fiscal Capacity Indexes of the States.

The first step in the determination of the Fiscal Capacity Index for DC is the collection and compilation of Total Personal Income (TPI) data for the States and DC for the most recent 3 years from the Bureau of Economic Analysis (BEA), U.S. Department of Commerce. Three-year averages of TPI are then calculated for all the States ($\overline{TPI_i}$) and DC ($\overline{TPI_{DC}}$).

The next step in the calculations is to divide the 3-year average TPI for DC by the Cost-of-Services Index for DC (C_{DC}), effectively producing a cost-adjusted, average TPI for DC. This term is shown in the top portion of the numerator appearing on the right-hand side of Formula B7.

The sum of cost-adjusted average TPI for all the States (including DC) is calculated, and then divided into the cost-adjusted average TPI value for DC. The sum of the cost-adjusted average TPI for all States and DC is shown in the bottom portion of the numerator (which can also be referred to as the denominator term in the numerator) in the formula. The result of this step is to effectively produce a cost-adjusted, relative, average TPI for DC.

The next step is to calculate a term equal to the Weighted Population-at-Risk for DC (P_{DC}) divided by the sum of the Weighted Populations-at-Risk (P_i) for all the States and DC, and divide this term into the cost-adjusted, relative, average TPI for DC. This population-related term is shown in the denominator of the expression on the right-hand side of Formula B7. The result of this step is to effectively produce a cost-adjusted, population-adjusted, relative, average TPI for DC.

This value is first multiplied by 0.35, and then subtracted from 1, to yield the unconstrained Fiscal Capacity Index for DC. However, if this unconstrained value is less than 0.4, then the final (constrained) Fiscal Capacity Index for DC (F_{DC}) is set equal to 0.4. Refer to Appendix Tables F3-F5 for an example of the calculation of the Fiscal Capacity Index for DC and its components.

Formula for Determining Below/Equal-to-Statutory-Minimum Allotment (BESMA) States versus Above-Statutory-Minimum Allotment (ASMA) States
(B8)

$$\begin{aligned} &\textit{When } A_{i,RFY,Baseline} \le A_{i,1998} \\ &\qquad\qquad A_{i,BESMA} = A_{i,1998} \\ &\textit{otherwise} \qquad A_{i,ASMA} = A_{i,RFY,Baseline} \\ &\{i\ (State) = 1, 2, ..., 51\} \end{aligned}$$

where $A_{i, RFY, Baseline}$ = Baseline allotment for State i for the reference fiscal year

$A_{i, 1998}$ = Allotment received by State i in FY 1998

$A_{i, BESMA}$ = Allotment for BESMA State i (= 1…, N_1)

$A_{i, ASMA}$ = Allotment for ASMA State i (= 1…, N_2)

Refer to Appendix Table F7 for an example of baseline versus 1998 allotment comparisons. In this example, no allotments fell below the corresponding 1998 allotments, and hence, there were no BESMA States, meaning that all States were ASMA States.

Scaled Allotment Formula for ASMA States
(B9)

$$A_{ij,Scaled\ ASMA} = \left(A_{ij,ASMA} \frac{0.95 \times 0.985 \times AP_{RFY} - \sum_{i=1}^{N_1} A_{ij,BESMA}}{\sum_{i=1}^{N_2} A_{ij,ASMA}} \right)$$

$$\{i\ (BESMA\ State) = 1, 2, ..., N_1\}$$

$$\{i\ (ASMA\ State) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

where $A_{ij, Scaled\ ASMA}$ = Scaled allotment for ASMA State i in Cycle j for the reference fiscal year

$A_{ij, ASMA}$ = Allotment for ASMA State i in Cycle j for the reference fiscal year

$A_{ij, BESMA}$ = Allotment for BESMA State i in Cycle j for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

0.95 = Proportion of AP_{RFY} disbursed to States and territories

0.985 = Proportion of State-Territory allotment disbursed to States

Scaled allotments for ASMA States in Cycle j require comparison with statutory minimums and may require constraining or re-scaling through an iterative process until re-scaled allotments ($A_{ij, Scaled\ ASMA}$) meet the following criteria:

$$A_{ij,\,Scaled\ ASMA} > A_{i,1998}$$
$$\{i\ (ASMA\ State) = 1, 2, ..., N_2\}$$
$$\{j\ (Cycle) = 1, 2, ..., m\}$$

In order for the allotments of BESMA States to be increased from their baseline values to statutory minimum values, funding must be redistributed to them from the allotments for ASMA States. This redistribution is effected by the application of a "Scale Factor" to the allotments of ASMA States in one or multiple redistribution cycles, which reduces such allotments by a uniform proportion and allows just enough funding to be transferred to BESMA States so that statutory minimums are achieved.

Formula B9 shows how scaled allotments for ASMA States ($A_{ij,\,Scaled\ ASMA}$) are calculated, which is simply the multiplication of the unscaled allotment for that cycle ($A_{ij,\,ASMA}$) by a Scale Factor for that cycle ("*j*"). The term on the right-hand side of the quantity within the large parentheses is the Scale Factor, which is a ratio less than unity and consists of a numerator and denominator.

The numerator of the Scale Factor is the total funding available for ASMA States in the redistribution cycle, which is itself the difference of two values. The first term in the numerator is the total funding available in the reference (current) year to all States, which is the total appropriation amount (AP_{RFY}) less 5 percent of the appropriation amount for administration and technical assistance (hence the 0.95 factor) less 1.5 percent of this net amount that is slated for territory allotments (hence the 0.985 factor). The second term in the numerator is the sum of the allotments ($A_{ij,\,BESMA}$) for BESMA States in the redistribution cycle. The difference of these two terms is thus the total funding available for ASMA States in the redistribution cycle.

The denominator of the Scale Factor is the sum of the allotments for ASMA States in the redistribution cycle *prior to scaling*, and is thus the total funding that the ASMA States in the cycle should receive if they were not being scaled in that cycle. The Scale Factor is thus a ratio equal to the funding that is available for the ASMA States in the cycle divided by the funding that they would otherwise receive in the cycle without further scaling.

The allotments for ASMA States prior to scaling in a given redistribution cycle are either the baseline allotments, if it is the first cycle, or scaled allotments from the prior cycle, if it is the second or later redistribution cycle. After each redistribution cycle, all scaled ASMAs must be compared with statutory minimums and, if any are less than or equal to statutory minimums, then any such allotments are themselves BESMA in subsequent redistribution cycles. As noted earlier, in reference to the example shown in Appendix Table F7, since there were no BESMA States (i.e., all States are ASMA States), ASMA-scaling was not needed.

Final Allotment Formula (States)
(B10)

$$A_{i,Final} = A_{ij=m,BESMA} \ \ for\left\{i = 1,2,...,N_1\right\}$$
$$A_{i,Final} = A_{ij=m,\ Scaled\ ASMA} \ \ for\left\{i = 1,2,...,N_2\right\}$$

where $A_{i,\ Final}$ = Final allotment for State *i* for the reference fiscal year

$A_{ij=m,\ BESMA}$ = Allotment for BESMA State *i* in the last Cycle ($j=m$) for the reference fiscal year

$A_{ij=m,\ Scaled\ ASMA}$ = Scaled allotment for ASMA State *i* in the last Cycle ($j=m$) for the reference fiscal year

The calculations to determine final State allotments ($A_{i,\ Final}$) may require multiple funding redistribution cycles in order that all States receive at least the statutory minimums. When this condition has been achieved after a sufficient (m) number of cycles, then final allotments are either statutory minimums ($A_{ij=m,\ BESMA}$) for BESMA States or are scaled allotments ($A_{ij=m,\ Scaled\ ASMA}$) for ASMA States. Refer to Appendix Table F7 for an example of the final allotment calculations.

Baseline Formula (Territories)
(B11)

$$A_{i,RFY,\ Baseline} = \left(0.95 \times 0.015 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{8} P_i} \right)$$
$$\left\{i(Territory) = 1,2,...,8\right\}$$

where $A_{i,\ RFY,\ Baseline}$ = Baseline allotment for Territory *i* for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

P_i = Total civilian population for Territory *i* (recent census)

0.95 = Proportion of AP_{RFY} disbursed to States and territories

0.015 = Proportion of State-Territory allotment disbursed to territories

The appropriation amount for the program (AP_{RFY}) for a given, or "reference," fiscal year is determined annually by the Congress. Five percent of the appropriated amount is used by SAMHSA to collect data on mental health services and patients and conduct evaluations of programs to prevent and treat mental health problems, while 95 percent of the appropriation is allocated among the States (including DC) and territories (consisting of five current and three former territories) hence the factor "0.95" used in the formula. Of the amount allocated to States and territories, 1.5 percent is distributed to the territories (hence the factor "0.015" used in the formula), which is referred to as the "Territory Subtotal."

The initial or "baseline" allotment for a territory ($A_{i,\ RFY,\ Baseline}$) is determined exclusively by the proportion of the civilian population of all territories that resides in the subject territory.

The share that a territory receives of the Territory Subtotal is equal to the ratio formed by the civilian population of the territory (P_i) divided by the sum of the civilian populations of all territories. The baseline allotment for a territory is then determined as the product of this ratio (the territory's share) with the Territory Subtotal (the funding available to all the territories). Refer to Appendix Table F8 for an example of the baseline allotment calculations.

Formula for Determining Below/Equal-to-Statutory-Minimum Allotment (BESMA) Territories versus Above-Statutory-Minimum Allotment (ASMA) Territories
(B12)

$$\begin{aligned} &\textit{When } A_{i,RFY,Baseline} \le \$50,000 && A_{i,BESMA} = \$50,000 \\ &\textit{otherwise} && A_{i,ASMA} = A_{i,RFY,Baseline} \\ &\{i\ (\textit{Territories}) = 1, 2, ..., 8\} \end{aligned}$$

where $A_{i, RFY, Baseline}$ = Baseline allotment for Territory i for the reference fiscal year

$A_{i, BESMA}$ = Allotment for BESMA Territory i (= 1…, N_1)

$A_{i, ASMA}$ = Allotment for ASMA Territory i (= 1…, N_2)

Territory allotments determined by the application of Formula B11 result in "baseline" allotment values for the territories ($A_{i,RFY,Baseline}$). After these baseline allotments are determined, they must be compared with the statutory minimum allotment constraint of $50,000. If any baseline allotments are less than or equal to this statutory minimum, then those are increased in subsequent calculations to the statutory minimum or held constant, respectively. These allotments are referred to as "BESMA" ($A_{i, BESMA}$).

Territories for which baseline allotments are greater than the statutory minimum are referred to as ASMA ($A_{i, ASMA}$) territories, and in subsequent calculations funding from ASMA territories is redistributed to BESMA territories in order to increase the latter from their baseline values to the statutory minimum. Refer to Appendix Table F8 for an example of distinguishing between BESMA and ASMA territories.

Scaled Allotment Formula for ASMA Territories
(B13)

$$A_{ij,Scaled\ ASMA} = \left(A_{ij,ASMA} \times \frac{0.95 \times 0.015 \times AP_{RFY} - \sum_{i=1}^{N_1} A_{ij,BESMA}}{\sum_{i=1}^{N_2} A_{ij,ASMA}} \right)$$

$$\{i\ (BESMA\ Territory) = 1, 2, ..., N_1\}$$

$$\{i\ (ASMA\ Territory) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

where $A_{ij,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Territory *i* in Cycle *j* for the reference fiscal year

$A_{ij,\ ASMA}$ = Allotment for ASMA Territory *i* in Cycle *j* for the reference fiscal year

$A_{ij,\ BESMA}$ = Allotment for BESMA Territory *i* in Cycle *j* for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

0.95 = Proportion of AP_{RFY} for disbursement to States and territories

0.015 = Proportion of State-Territory allotment for disbursement to territories

Scaled allotments for ASMA Territories in Cycle *j* require comparison with the statutory minimum and may require constraining or re-scaling through an iterative process until re-scaled allotments ($A_{ij,\ Scaled\ ASMA}$) meet the following criterion:

$$A_{ij,\ Scaled\ ASMA} > \$50,000$$
$$\{i\ (ASMA\ Territory) = 1, 2, ..., N_2\}$$
$$\{j\ (Cycle) = 1, 2, ..., m\}$$

where $A_{ij,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Territory *i* in Cycle *j* for the reference fiscal year.

In order for the allotments of BESMA territories to be increased from their baseline values to the statutory minimum value, funding must be redistributed to them from the allotments for ASMA territories. This redistribution is effected by the application of a "Scale Factor" to the allotments of ASMA territories in one or multiple redistribution cycles, which reduces such allotments by a uniform proportion and allows just enough funding to be transferred to BESMA territories so that the statutory minimum is achieved.

Formula B13 shows how scaled allotments for ASMA territories ($A_{ij,\ Scaled\ ASMA}$) are calculated, which is simply the multiplication of the unscaled allotment for that cycle ($A_{ij,\ ASMA}$) by a Scale Factor for that cycle ("*j*"). The term on the right-hand side of the quantity within the large parentheses is the Scale Factor, which is a ratio less than unity and consists of a numerator and denominator.

The numerator of the Scale Factor is the total funding available for ASMA territories in the redistribution cycle, which is itself the difference of two values. The first term in the numerator is the total funding available in the reference (current) year to all territories, which is the total appropriation amount (AP_{RFY}) less 5 percent of the appropriation amount for administration and technical assistance (hence the 0.95 factor) less 98.5 percent of this net amount that is slated for State allotments (hence the 0.015 factor). The second term in the numerator is the sum of the allotments ($A_{ij,\ BESMA}$) for BESMA territories in the redistribution cycle. The difference of these two terms is thus the total funding available for ASMA territories in the redistribution cycle.

The denominator of the Scale Factor is the sum of the allotments for ASMA territories in the redistribution cycle *prior to scaling*, and is thus the total funding that the ASMA territories in

the cycle should receive if they were not being scaled in that cycle. The Scale Factor is thus a ratio equal to the funding that is available for the ASMA territories in the cycle divided by the funding that they would otherwise receive in the cycle without further scaling.

The allotments for ASMA territories prior to scaling in a given redistribution cycle are either the baseline allotments, if it is the first cycle, or scaled allotments from the prior cycle, if it is the second or later redistribution cycle. After each redistribution cycle, all scaled ASMAs must be compared with the statutory minimum and, if any are less than or equal to the statutory minimum, then any such allotments are themselves BESMA in subsequent redistribution cycles. These calculations are shown in Appendix Table F8.

Final Allotment Formula (Territories)
(B14)

$$A_{i,Final} = A_{ij=m,BESMA} \quad for\{i = 1,2,...,N_1\}$$
$$A_{i,Final} = A_{ij=m,\,Scaled\ ASMA} \quad for\{i = 1,2,...,N_2\}$$

where $A_{i,\,Final}$ = Final allotment for State i for the reference fiscal year

$A_{ij=m,\,BESMA}$ = Allotment for BESMA State i in the last Cycle ($j=m$) for the reference fiscal year

$A_{ij=m,\,Scaled\ ASMA}$ = Scaled allotment for ASMA State i in the last Cycle ($j=m$) for the reference fiscal year

The calculations to determine final territory allotments ($A_{i\ ,Final}$) may require multiple funding redistribution cycles in order that all territories receive at least the statutory minimum. When this condition has been achieved after a sufficient (m) number of cycles, then final allotments are either the statutory minimum ($A_{ij=m,\,BESMA}$) for BESMA territories or are scaled allotments ($A_{ij=m,\,Scaled\ ASMA}$) for ASMA territories. Refer to Appendix Table F8 for an example of the final allotment calculations.

Table 3.1 Data Elements and Data Sources for Mental Health Block Grant (MH BG) Calculations

No.	Data Elements	Data Sources
(For 50 States and DC)		
1	Population Estimates (Population-at-Risk Calculations)	U.S. Census Bureau
2	Wage Data (Cost-of-Services Index Calculations)	U.S. Census Bureau (2000 Decennial Census—16 percent Sample)
3	Wage Data for Base Year and Recent Year (Cost-of-Services Index Calculations)	CMS
4	40^{th} or 50^{th} Percentile Fair Market Rent Estimates (Cost-of-Services Index Calculations)	HUD
5	Population Estimates by County/Subcounty (Cost-of-Services Index Calculations)	U.S. Census Bureau
6	Total Taxable Resources (Fiscal Capacity Index Calculations)	Department of Treasury/Office Of Economic Policy
7	Total Personal Income (Fiscal Capacity Index Calculations)	U.S. Department of Commerce, Bureau of Economic Analysis
8	MH BG Allotments by State for FY 1998; and Appropriation Amount for the Reference Fiscal Year	SAMHSA
(For 8 Territories)		
9	Civilian Population (all ages combined)	U.S. Census Bureau and census for three former territories

Figure 3.1 MH BG Calculation Flowchart (Fifty States and the District of Columbia)

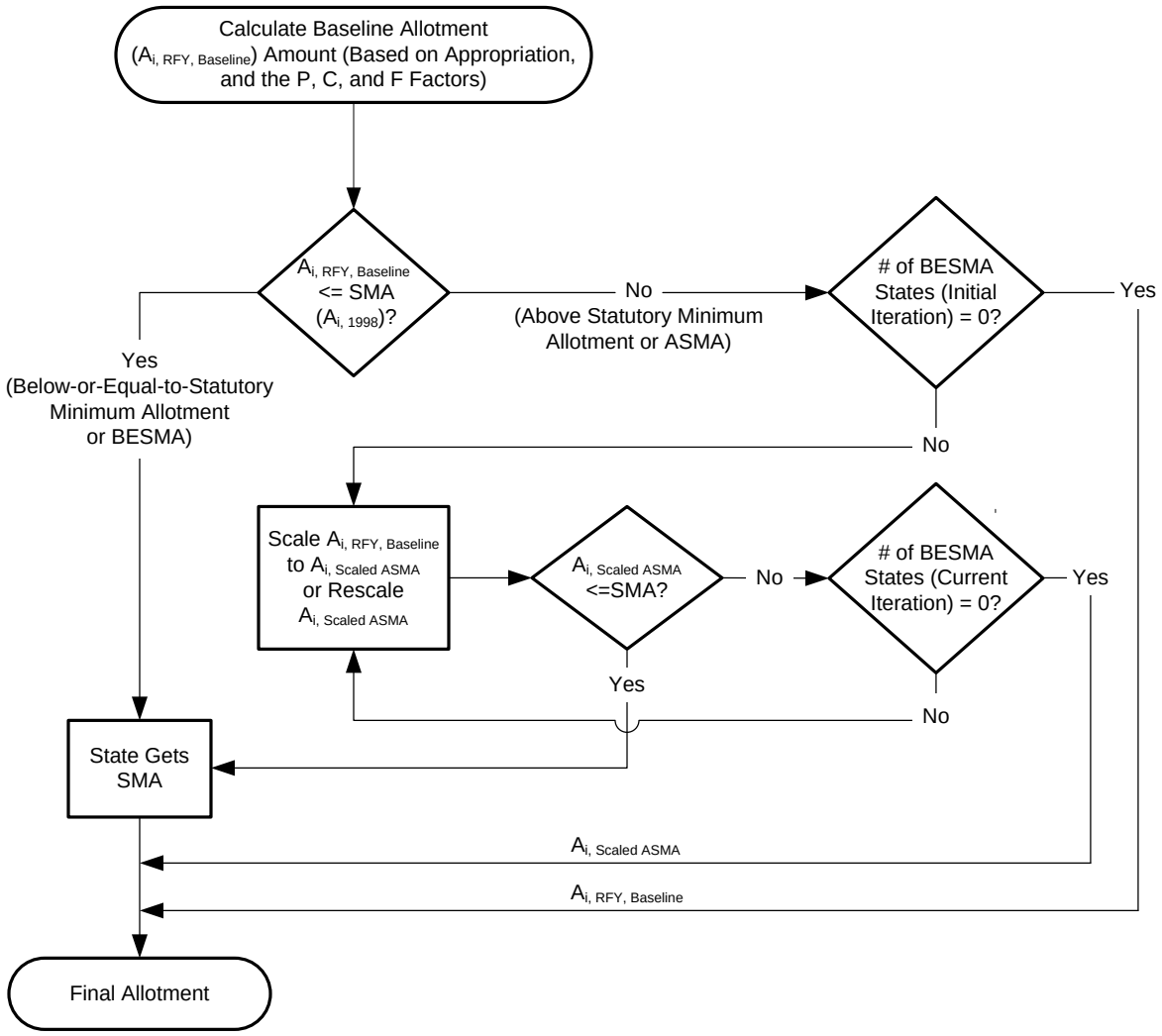
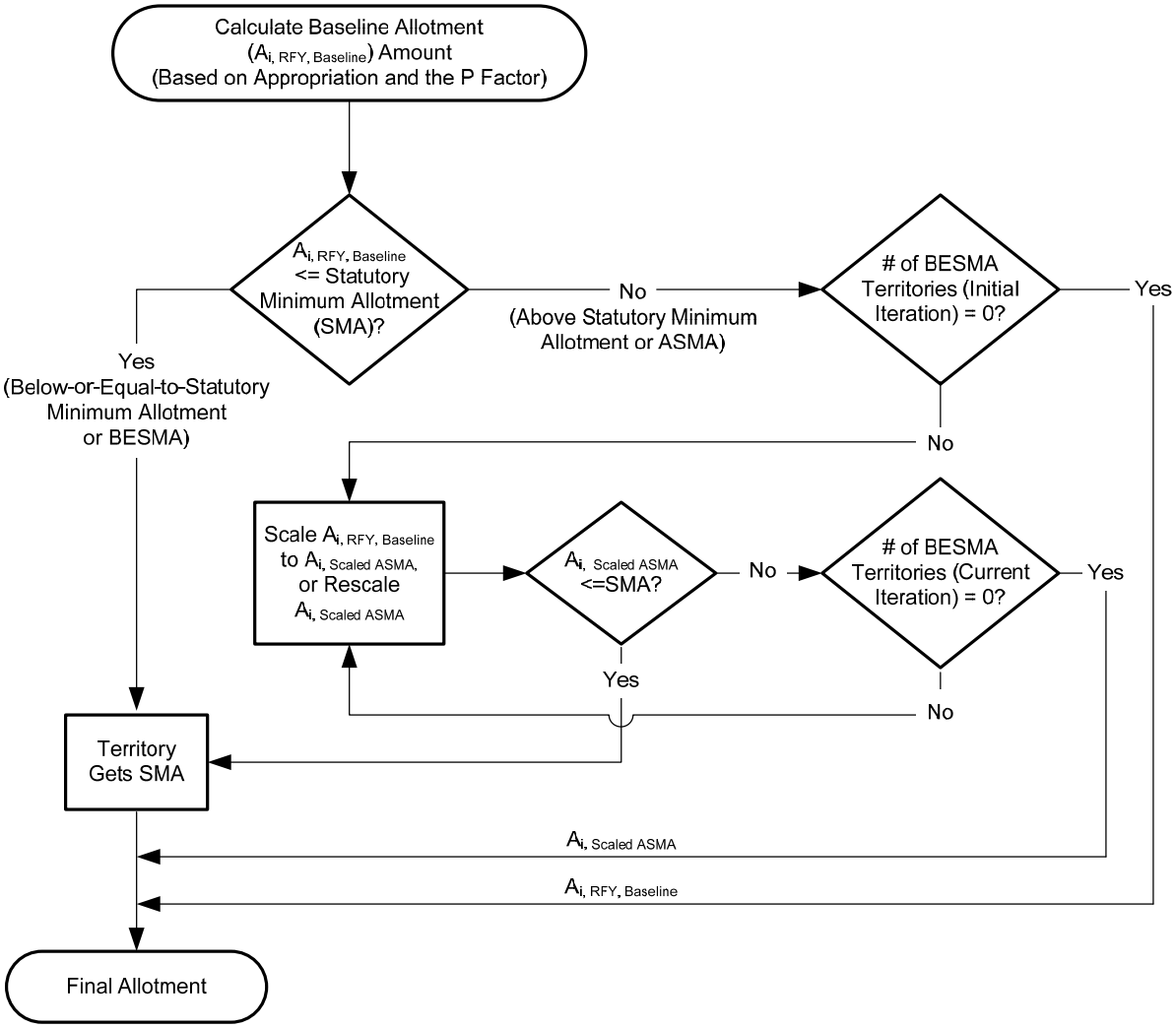


Figure 3.2 MH BG Calculation Flowchart (Eight Territories)



4. Protection and Advocacy for Individuals with Mental Illness Formula Grant (PAIMI FG) Allotment Formulas

The Office of Applied Studies (OAS) of the Substance Abuse and Mental Health Services Administration (SAMHSA) determines annually the allocation of funding to 50 States, the District of Columbia (DC), Puerto Rico (PR), four other territories, and the American Indian Consortium (AIC) for the PAIMI FG in accordance with enabling legislation. The recipients of allotments are referred to as "Domains" in this section. The formulas presented below are mathematical expressions of the rules laid out in the legislation.

As the law requires, 2 percent of the appropriated amount for a given fiscal year is first set aside for SAMHSA to cover the costs for data collection, technical assistance, and program evaluation. The remaining 98 percent is distributed as allotments, with baseline allotments calculated as the sum of two components – 50 percent based on the relative share of the total population and another 50 percent based on the relative share of the total population weighted by per capita income. The baseline allotments are adjusted, if and as necessary, so that statutory minimum allotment constraints are satisfied. This is accomplished via an iterative calculation algorithm which uniformly and proportionately reduces the baseline funding of some Domains and redistributes it to other Domains in order that all minimum allotment constraints are fully satisfied. The PAIMI FG formulas are presented in the following sequence.

Baseline Allotment Formula (50 States, DC, PR, 4 Territories, and American Indian Consortium [AIC])

(C1)

$$= \begin{cases} \left(0.98 \times 0.50 \times AP_{RFY} \times \dfrac{P_i}{\sum_{i=1}^{57} P_i} \right) + \left(0.98 \times 0.50 \times AP_{RFY} \times \dfrac{P_i}{\sum_{i=1}^{57} P_i} \right) \times \dfrac{\left(\sum_{i=1}^{52} (PCI_i \times P_i) \Big/ \sum_{i=1}^{52} P_i \right)}{PCI_i} \times AF \\ \qquad \text{when } i = \text{State, DC or PR} \\ \left(0.98 \times 0.50 \times AP_{RFY} \times \dfrac{P_i}{\sum_{i=1}^{57} P_i} \right) + \left(0.98 \times 0.50 \times AP_{RFY} \times \dfrac{P_i}{\sum_{i=1}^{57} P_i} \right) \times AF \\ \qquad \text{when } i = \text{Territory (except PR) or AIC} \end{cases}$$

$A_{AIC,RFY,Baseline} = 0$ when $\text{AP}_{\text{RFY}} < \$25,000,000$

$\{i\,(Domain) = 1, 2, ..., 57\}$

where $A_{i,\,RFY,\,Baseline}$ = Baseline allotment for Domain i for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

$A_{AIC,\,RFY,\,Baseline}$ = Baseline allotment for American Indian Consortium

P_i = Population estimate (all ages combined) for Domain i

PCI_i = Per Capita Income for Domain i (i = 1 … 52; PCI data are not available for four territories and AIC)

0.98 = Proportion of AP_{RFY} for disbursement to all Domains

0.50 = Proportion of funds for disbursement based on P_i only or P_i and PCI_i

AF = Adjustment Factor (calculated as follows)

$$AF = \frac{0.98 \times 0.50 \times AP_{RFY}}{\sum_{i=1}^{52}\left[\left(0.98 \times 0.50 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{57} P_i}\right) \times \frac{\left(\sum_{i=1}^{52}(PCI_i \times P_i) \Big/ \sum_{i=1}^{52} P_i\right)}{PCI_i}\right] + \sum_{i=53}^{57}\left(0.98 \times 0.50 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{57} P_i}\right)}$$

$i\ (Domain) = 1, 2, ..., 57)$

The appropriation amount for the program (AP_{RFY}) for a given, or "reference," fiscal year is determined annually by the Congress. Two percent of the appropriated amount is used by SAMHSA for administration and technical assistance, while 98 percent of the appropriation is allocated among the States, DC, PR, four other territories, and the AIC (hence the factor "0.98" used in the formula). Refer to Appendix Table G1 as an example of calculations of the amounts available for States, territories/AIC, and SAMHSA set-aside.

The initial or "baseline" allotment for Domains ($A_{i,\ RFY,\ Baseline}$) is based upon two components, which have equal weights of 0.50. The first component of the baseline allotment is a population-based distribution of half the available funding for allotments. The amount that is available for this component is equal to half (the factor "0.50") of the appropriation amount (AP_{RFY}) less 2 percent for technical assistance (the factor "0.98"). This amount is then multiplied by the ratio formed by the resident population of Domain "*i*" (P_i) divided by the sum of the resident populations of all Domains. Refer to Appendix Table G2 for an example of Part 1 baseline allotment calculations.

The second component of the baseline allotment is a population-based distribution of half the available funding for allotments (i.e., that described above, then weighted by the relative PCI, and finally adjusted so that the sum of these "second component" allotments for all Domains is equal to half of the amount available for allotments to all Domains). The population-based term is identical to that described above. The relative PCI is defined as the PCI for the United States divided by the PCI of a given Domain (PCI_i) if the Domain is a State, DC, or PR, while it is set equal to 1 if the Domain is a territory (other than Puerto Rico) or the AIC. The PCI for the United States is calculated in the formula as a population-weighted average using PCI and population source data for all Domains for which PCI is known (i.e., the 50 States, DC, and PR). Refer to Appendix Table G3 for an example of Part 2 unadjusted baseline allotment calculations.

An Adjustment Factor (*AF*) is used to adjust the population-relative PCI-weighted allotments so that the sum of these allotments for all Domains equals half of the total amount available for allotments to all Domains. The Adjustment Factor is a ratio (which could be greater than, less than, or equal to 1) calculated as the total funding available for allotments to all Domains in this "second component" ($0.98 \times 0.50 \times AP_{RFY}$, [i.e., half the funding for all allotments]) divided by the sum of the allotments for all Domains calculated for this component.

In the denominator of the *AF*, the calculated allotments for the States, DC, and PR are shown on the left-hand side, and those for the other territories and the AIC are shown on the right-hand side. Refer to Appendix Table G4 for an example of baseline allotments calculations (Parts 1 and 2 combined).

According to the enabling legislation, if the appropriation amount (AP_{RFY}) is less than $25,000,000, then the AIC would not receive an allotment at all.

Formula for Determining Below/Equal-to-Statutory-Minimum Allotment (BESMA) Domains vs. Above-Statutory-Minimum Allotment (ASMA) Domains
(C2)

$$A_{i,BESMA} = \begin{cases} \dfrac{\$260,000 \times AP_{RFY}}{AP_{1995}} \\ \quad \text{when } A_{i,RFY,Baseline} \le \dfrac{\$260,000 \times AP_{RFY}}{AP_{1995}} \text{ (for } i = \text{State, DC or PR)} \\ \dfrac{\$139,300 \times AP_{RFY}}{AP_{1995}} \\ \quad \text{when } A_{i,RFY,Baseline} \le \dfrac{\$139,300 \times AP_{RFY}}{AP_{1995}} \text{ (for } i = \text{Territory or AIC)} \end{cases}$$

$$A_{i,ASMA} = \begin{cases} A_{i,RFY,Baseline} \\ \quad \text{when } A_{i,RFY,Baseline} > \dfrac{\$260,000 \times AP_{RFY}}{AP_{1995}} \text{ (for } i = \text{State, DC or PR)} \\ A_{i,RFY,Baseline} \\ \quad \text{when } A_{i,RFY,Baseline} > \dfrac{\$139,300 \times AP_{RFY}}{AP_{1995}} \text{ (for } i = \text{Territory or AIC)} \end{cases}$$

$$A_{AIC,BESMA} = A_{AIC,ASMA} = 0 \text{ when } AP_{RFY} < \$25,000,000$$

$$\{i\ (Domain) = 1, 2, ..., 57\}$$

where $A_{i,RFY,Baseline}$ = Baseline allotment for Domain *i* for the reference fiscal year

$A_{i,BESMA}$ = Allotment for BESMA Domain *i* (= 1…, N_1)

$A_{i,ASMA}$ = Allotment for ASMA Domain *i* (= 1…, N_2)

AP_{RFY} = Appropriation amount for the reference fiscal year

AP_{1995} = Appropriation amount for fiscal year (FY) 1995

$A_{AIC,BESMA}$ *or* $A_{AIC,ASMA}$= Allotment for American Indian Consortium

Determination of BESMA and ASMA Domains follows the calculation of the statutory minimum allotments. The statutory minimum for the States, DC, and PR is $260,000 (the minimum amount that the States, DC, and PR received for FY 1995) multiplied by the ratio equal to the appropriation amount for the reference (current) fiscal year (AP_{RFY}) divided by the

appropriation amount for FY 1995 (AP_{1995}). The statutory minimum for the territories (other than PR) and the AIC is $139,300 (the minimum amount that these territories and the AIC received for FY 1995) multiplied by the ratio equal to the appropriation amount for the reference (current) fiscal year (AP_{RFY}) divided by the appropriation amount for FY 1995 (AP_{1995}). As an example, the statutory minimum allotments are shown in Appendix Table G4.

If any baseline allotments are less than or equal to the statutory minimums, then those are increased in subsequent calculations to the statutory minimums or held constant, respectively. These allotments are referred to as "BESMA" ($A_{i,\ BESMA}$). Domains for which baseline allotments are greater than the statutory minimums are referred to as “ASMA” ($A_{i,\ ASMA}$) Domains, and in subsequent calculations funding from ASMA Domains is redistributed to BESMA Domains in order to increase the latter from their baseline values to the statutory minimums. Refer to Appendix Tables G5 and G6 as an example of determining BESMA and ASMA Domains.

The allotment values for ASMA Domains are set equal to baseline allotments for the next step in the calculations. If the appropriation amount (AP_{RFY}) is less than $25,000,000, then the AIC does not receive an allotment and is not categorized into BESMA or ASMA Domains.

Scaled Allotment Formula for ASMA Domains
(C3)

$$A_{ij,\ Scaled\ ASMA} = \left(A_{ij,\ ASMA} \times \frac{0.98 \times AP_{RFY} - \sum_{i=1}^{N_1} A_{ij,\ BESMA}}{\sum_{i=1}^{N_2} A_{ij,\ ASMA}} \right)$$

$$\{ i\ (BESMA\ Domain) = 1, 2, ..., N_1 \}$$

$$\{ i\ (ASMA\ Domain) = 1, 2, ..., N_2 \}$$

$$\{ j\ (Cycle) = 1, 2, ..., m \}$$

where $A_{ij,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Domain *i* in Cycle *j* for the reference fiscal year

$A_{ij,\ ASMA}$ = Allotment for ASMA Domain *i* in Cycle *j* for the reference fiscal year

$A_{ij,\ BESMA}$ = Allotment for BESMA Domain *i* in Cycle *j* for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

0.98 = Proportion of AP_{RFY} for disbursement to Domains

Scaled allotments for ASMA Domain *i* in Cycle *j* may require re-scaling or constraining through an iterative process until re-scaled allotments ($A_{ij,\ Scaled\ ASMA}$) meet the following statutory minimum:

$$A_{ij,\ Scaled\ ASMA} > \frac{\$260,000 \times AP_{RFY}}{AP_{1995}} \text{ (for } i = \text{States/DC/PR)}$$

$$or\ \frac{\$139,300 \times AP_{RFY}}{AP_{1995}} \text{ (for } i = \text{Territories/AIC)}$$

$$\{i\ (ASMA\ Domain) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

In order for the allotments of BESMA Domains to be increased from their baseline values to statutory minimum values, funding must be redistributed to them from the allotments for ASMA Domains. This redistribution is effected by the application of a Scale Factor (different from the Adjustment Factor described in Formula C1 above) to the allotments of ASMA Domains in one or multiple redistribution cycles, which reduces such allotments by a uniform proportion and allows just enough funding to be transferred to BESMA Domains so that statutory minimums are achieved.

Formula C3 shows how scaled allotments for ASMA Domains ($A_{ij,\ Scaled\ ASMA}$) are calculated, which is simply the multiplication of the unscaled allotment for that cycle ($A_{ij,\ ASMA}$) by a Scale Factor for that cycle ("*j*"). The term on the right-hand side of the quantity within the large parentheses is the Scale Factor, which is a ratio less than unity and consists of a numerator and denominator.

The numerator of the Scale Factor is the total funding available for ASMA Domains in the redistribution cycle, which is itself the difference of two values. The first term in the numerator is the total funding available in the reference (current) year to all Domains, which is the total appropriation amount (AP_{RFY}) less 2 percent of the appropriation amount for administration and technical assistance (hence the 0.98 factor). The second term in the numerator is the sum of the allotments ($A_{ij,\ BESMA}$) for BESMA Domains in the redistribution cycle. The difference of these two terms is thus the total funding available for ASMA Domains in the redistribution cycle.

The denominator of the Scale Factor is the sum of the allotments for ASMA Domains in the redistribution cycle *prior to scaling*, and is thus the total funding that the ASMA Domains in the cycle should receive if they were not being scaled in that cycle. The Scale Factor is thus a ratio equal to the funding that is available for the ASMA Domains in the cycle divided by the funding that they would otherwise receive in the cycle without further scaling.

The allotments for ASMA Domains prior to scaling in a given redistribution cycle are either the baseline allotments, if it is the first cycle, or scaled allotments from the prior cycle, if it is the second or later redistribution cycle. After each redistribution cycle, all scaled ASMAs must be compared with statutory minimums and, if any are less than or equal to statutory minimums,

then any such allotments are themselves BESMA in subsequent redistribution cycles. As an example, these calculations are shown in Appendix Tables G5 and G6.

Final Allotment Formula
(C4)

$$A_{i,Final} = A_{ij=m,\ BESMA} \quad for\ \{i = 1, 2, ..., N_1\}$$
$$A_{i,Final} = A_{ij=m,\ Scaled\ ASMA} \quad for\ \{i = 1, 2, ..., N_2\}$$

where $A_{i,\ Final}$ = Final allotment for Domain *i* for the reference fiscal year

$A_{ij=m,\ BESMA}$ = Statutory minimum allotment for BESMA Domain *i* in the last Cycle ($j=m$) for the reference fiscal year

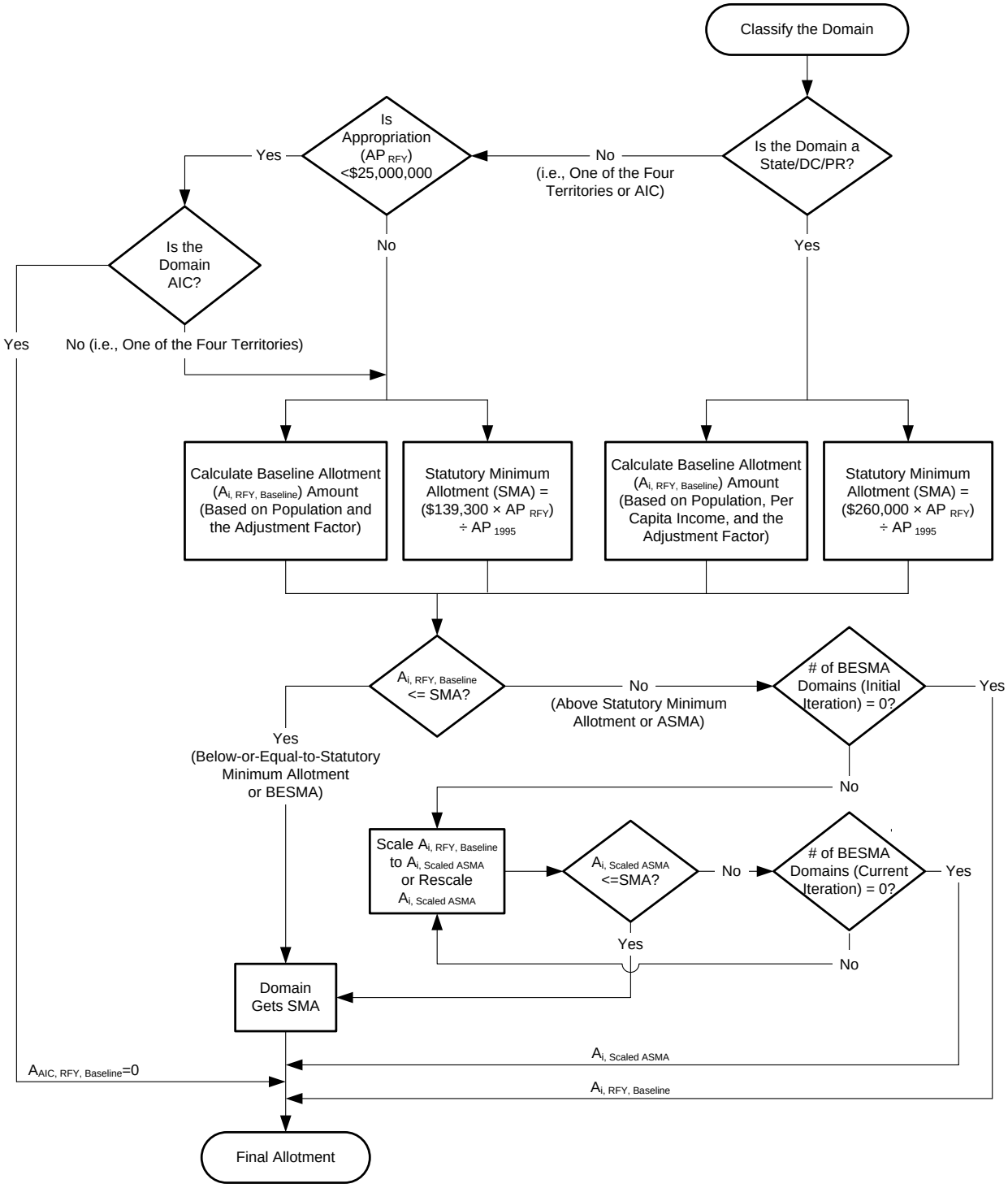
$A_{ij=m,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Domain *i* in the last Cycle ($j=m$) for the reference fiscal year

The calculations to determine final Domain allotments ($A_{i,\ Final}$) may require multiple funding redistribution cycles in order that all Domains receive at least the statutory minimums. When this condition has been achieved after a sufficient (m) number of cycles, then final allotments are either statutory minimums ($A_{ij=m,\ BESMA}$) for BESMA Domains or are scaled allotments ($A_{ij=m,\ Scaled\ ASMA}$) for ASMA Domains. Refer to Appendix Table G6 for an example of the calculation of final allotments.

Table 4.1 Data Elements and Data Sources for Protection and Advocacy for Individuals with Mental Illness Formula Grant (PAIMI FG) Allotment Calculations

No.	Data Elements	Data Sources
(For 50 States, DC, PR, 4 Territories, and AIC)		
1	Population Estimates (all ages combined)	U.S. Census Bureau
(For 50 States, DC, and PR)		
2	Per Capita Personal Income	U.S. Department of Commerce/Bureau of Economic Analysis

Figure 4.1 PAIMI FG Calculation Flowchart (Fifty States, the District of Columbia, Puerto Rico, Four Territories, and American Indian Consortium [AIC] –57 Domains)



5. Projects for Assistance in Transition from Homelessness Formula Grant (PATH FG) Allotment Formulas

The Office of Applied Studies (OAS) of the Substance Abuse and Mental Health Services Administration (SAMHSA) determines annually the allocation of funding to 50 States, the District of Columbia (DC), Puerto Rico (PR), and four other territories for the PATH FG in accordance with enabling legislation. The recipients of allotments are referred to as "Domains" in this section. The formulas presented below are mathematical expressions of the rules laid out in the legislation.

Four and four-tenths percent of the appropriated amount for a given fiscal year is first set aside for SAMHSA to cover the costs for data collection, technical assistance, and program evaluation. The remaining 95.6 percent of the appropriated amount is distributed as allotments, with baseline allotments for Domains other than the four territories determined by the relative share of the population of urbanized areas. The baseline allotments are adjusted, if and as necessary, so that statutory minimum allotment constraints are satisfied. This is accomplished via an iterative calculation algorithm which uniformly and proportionately reduces the baseline funding of some Domains and redistributes it to other Domains in order that all minimum allotment constraints are fully satisfied. The PATH FG formulas are presented in the following sequence.

Baseline Allotment Formula (50 States, DC, PR, and 4 Other Territories)
(D1)

$$A_{i,RFY,\,Baseline} = \begin{cases} 0.956 \times AP_{RFY} \times \dfrac{UP_i}{\sum_{i=1}^{52} UP_i} & \text{when } i \text{ is a State/DC/PR} \\ 0 & \text{when } i \text{ is a territory (other than PR)} \end{cases}$$

$$\{i(Domain) = 1, 2, ..., 56\}$$

where $A_{i,\,RFY,\,Baseline}$ = Baseline allotment for Domain i for the reference fiscal year

AP_{RFY} = Total appropriation amount for the reference fiscal year

UP_i = Population living in urbanized areas in Domain i

0.956 = Proportion of AP_{RFY} for disbursement to all Domains

The appropriation amount for the program (AP_{RFY}) for a given, or "reference," fiscal year is determined annually by the Congress. Four and four-tenths percent of the appropriated amount is used by the Department of Health and Human Services (DHHS)/Substance Abuse and Mental Health Services Administration (SAMHSA) for administration and technical assistance, while 95.6 percent of the appropriation is allocated among 56 Domains (hence the factor "0.956" used

in the formula). Refer to Appendix Table H1 as an example of calculations of the amounts available for States, territories, and SAMHSA set-aside.

The initial or "baseline" allotments ($A_{i\ ,RFY,\ Baseline}$) for the States, DC, and PR are based upon the proportion of the total population of urbanized areas of all Domains that resides in a given Domain. That is, the share of the total amount available for allotments (95.6 percent of AP_{RFY}) is calculated as the population of urbanized areas of the State, DC or PR (UP_i) divided by the sum of the populations of urbanized areas in all the States, DC, and PR. Refer to Appendix Table H2 for an example of baseline allotment calculations.

The baseline allotments for territories (other than PR) are set equal to zero in this step. Although the law directs that the populations of urbanized areas of the four territories are to be considered, such information is not available and is, therefore, not used in the determination of allotments.

In the event that the appropriation amount for the reference fiscal year (AP_{RFY}) is less than $15,800,000 (i.e., the minimum amount required to provide statutory minimum allotments to all Domains), then SAMHSA does not calculate allotments. Instead, the Secretary of DHHS makes discretionary allotments to some, but not necessarily all, Domains.

Formula for Determining Below/Equal-to-Statutory-Minimum Allotment (BESMA) Domains vs. Above-Statutory-Minimum Allotment (ASMA) Domains

$$\begin{aligned} &\textit{When } A_{i,RFY,Baseline} \le \$300,000\ (\textit{State}/\textit{DC}/\textit{PR})\ \textit{or} \le \$50,000\ (\textit{Territory}) \\ &\qquad A_{i,BESMA} = \$300,000\ \textit{or}\ \$50,000 \\ &\textit{otherwise} \qquad A_{i,ASMA} = A_{i,RFY,Baseline} \\ &\{i\ (\textit{Domain}) = 1,2,...,56\} \end{aligned}$$

where $A_{i,\ RFY,\ Baseline}$ = Baseline allotment for Domain *i* for the reference fiscal year

$A_{i,\ BESMA}$ = Allotment for BESMA Domain *i* (= 1…, N_1)

$A_{i,\ ASMA}$ = Allotment for ASMA Domain *i* (= 1…, N_2)

The statutory minimum allotment for the States, DC, and PR is $300,000, while the statutory minimum for the territories (other than PR) is $50,000. If any baseline allotments are less than or equal to the statutory minimums, then those are increased in subsequent calculations to the statutory minimums or held constant, respectively; these allotments are referred to as "BESMA" ($A_{i,\ BESMA}$). Baseline allotments that are greater than the statutory minimums are referred to as "ASMA" ($A_{i,\ ASMA}$), and in subsequent calculations funding from Domains with ASMA allotments is redistributed to Domains with BESMA allotments in order to increase the latter from their baseline values to the statutory minimums. As an example, categorization of BESMA and ASMA Domains is shown in Appendix Tables H3 and H4.

Scaled Allotment Formula for ASMA Domains
(D2)

$$A_{ij,\,Scaled\ ASMA} = \left(A_{ij,\,ASMA} \times \frac{0.956 \times AP_{RFY} - \sum_{i=1}^{N_1} A_{ij,\,BESMA}}{\sum_{i=1}^{N_2} A_{ij,\,ASMA}} \right)$$

$$\{i\ (BESMA\ Domain) = 1, 2, ..., N_1\}$$

$$\{i\ (ASMA\ Domain) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

where $A_{ij,\,Scaled\ ASMA}$ = Scaled allotment for ASMA Domain *i* in Cycle *j* for the reference fiscal year

$A_{ij,\,ASMA}$ = Allotment for ASMA Domain *i* in Cycle *j* for the reference fiscal year

$A_{ij,\,BESMA}$ = Allotment for BESMA Domain *i* in Cycle *j* for the reference fiscal year

AP_{RFY} = Appropriation amount for the reference fiscal year

0.956 = Proportion of AP_{RFY} disbursed to 50 States, DC, PR, and 4 territories

Scaled allotments for ASMA Domains in Cycle *j* require comparison with statutory minimums and may require constraining or re-scaling through an iterative process until re-scaled allotments ($A_{ij,\,Scaled\ ASMA}$) meet the following criteria:

$$A_{ij,\,Scaled\ ASMA} > \$300,000\ (for\ States / DC / PR)\ or\ \$50,000\ (Territories)$$

$$\{i\ (ASMA\ Domain) = 1, 2, ..., N_2\}$$

$$\{j\ (Cycle) = 1, 2, ..., m\}$$

In order for the allotments of BESMA Domains to be increased from their baseline values to statutory minimum values, funding must be redistributed to them from the allotments for ASMA Domains. This redistribution is effected by the application of a Scale Factor to the allotments of ASMA Domains in one or multiple redistribution cycles, which reduces such allotments by a uniform proportion and allows just enough funding to be transferred to BESMA Domains so that statutory minimums are achieved.

Formula D3 shows how scaled allotments for ASMA Domains ($A_{ij,\,Scaled\ ASMA}$) are calculated, which is simply the multiplication of the unscaled allotment for that cycle ($A_{ij,\,ASMA}$) by a Scale Factor for that cycle ("*j*"). The term on the right-hand side of the quantity within the large parentheses is the Scale Factor, which is a ratio less than unity and consists of a numerator and denominator.

The numerator of the Scale Factor is the total funding available for ASMA Domains in the redistribution cycle, which is itself the difference of two values. The first term in the numerator is the total funding available in the reference (current) year to all Domains, which is

the total appropriation amount (AP_{RFY}) less 4.4 percent of the appropriation amount for administration and technical assistance (hence the 0.956 factor). The second term in the numerator is the sum of the allotments ($A_{ij,\ BESMA}$) for BESMA Domains in the redistribution cycle. The difference of these two terms is thus the total funding available for ASMA Domains in the redistribution cycle.

The denominator of the Scale Factor is the sum of the allotments for ASMA Domains in the redistribution cycle *prior to scaling*, and is thus the total funding that the ASMA Domains in the cycle should receive if they were not being scaled in that cycle. The Scale Factor is thus a ratio equal to the funding that is available for the ASMA Domains in the cycle divided by the funding that they would otherwise receive in the cycle without further scaling.

The allotments for ASMA Domains prior to scaling in a given redistribution cycle are either the baseline allotments, if it is the first cycle, or scaled allotments from the prior cycle, if it is the second or later redistribution cycle. After each redistribution cycle, all scaled ASMAs must be compared with statutory minimums and, if any are less than or equal to statutory minimums, then any such allotments are themselves BESMA in subsequent redistribution cycles. As an example, these calculations are shown in Appendix Tables H3 and H4.

Final Allotment Formula
(D3)

$$A_{i,Final} = A_{ij=m,\ BESMA} \quad for\ \{i = 1, 2, ..., N_1\}$$
$$A_{i,Final} = A_{ij=m,\ Scaled\ ASMA} \quad for\ \{i = 1, 2, ..., N_2\}$$

where $A_{i,\ Final}$ = Final allotment for Domain *i* for the reference fiscal year

$A_{ij=m,\ BESMA}$ = Allotment for BESMA Domain *i* in the last Cycle (*j*=*m*) for the reference fiscal year

$A_{ij=m,\ Scaled\ ASMA}$ = Scaled allotment for ASMA Domain *i* in the last Cycle (*j*=*m*) for the reference fiscal year

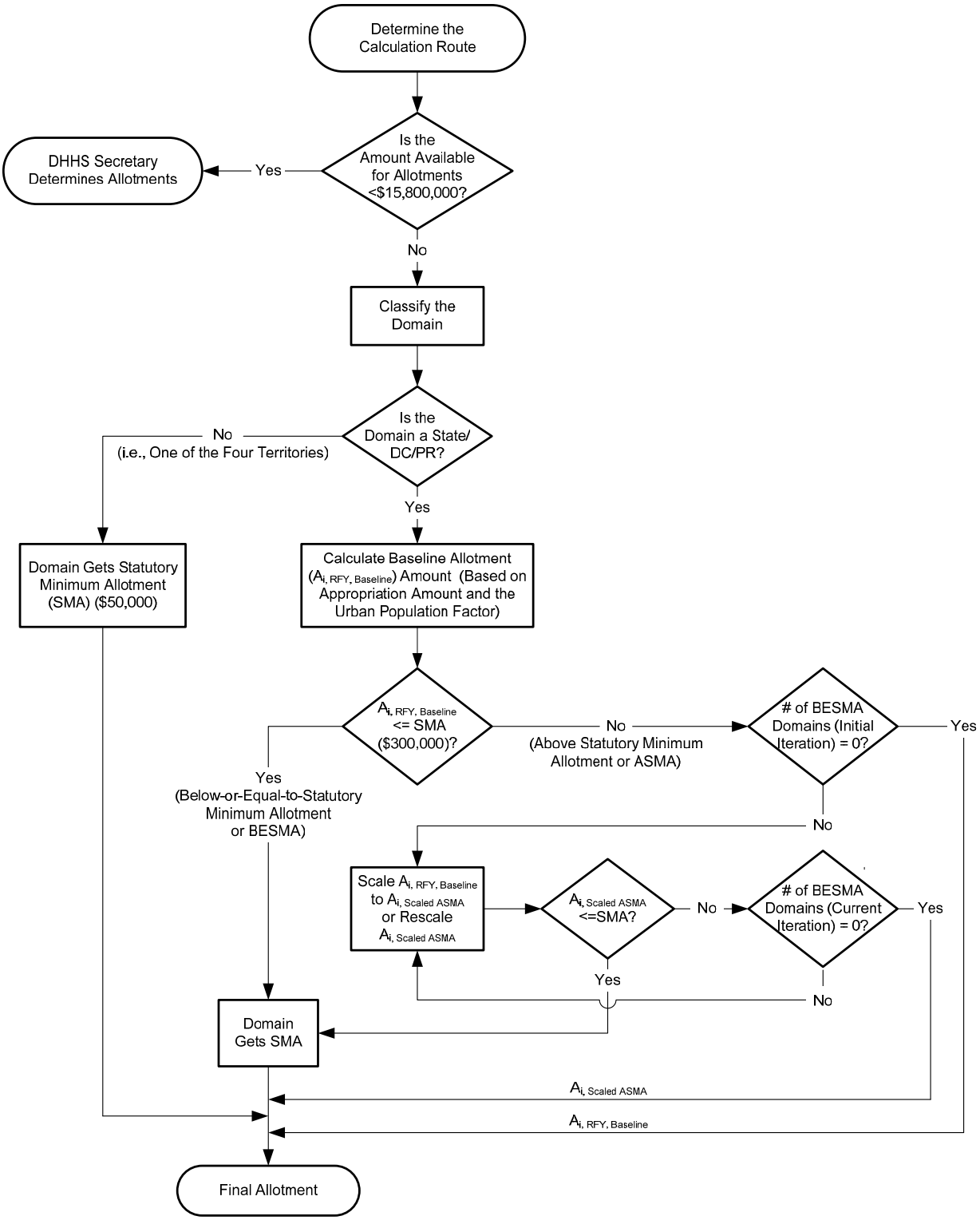
The calculations to determine final Domain allotments ($A_{i,\ Final}$) may require multiple funding redistribution cycles in order that all Domains receive at least the statutory minimums. When this condition has been achieved after a sufficient (*m*) number of cycles, then final allotments are either statutory minimums ($A_{ij=m,\ BESMA}$) for BESMA Domains or are scaled allotments ($A_{ij=m,\ Scaled\ ASMA}$) for ASMA Domains.

Because final allotments are rounded to the nearest thousand dollars, round-off error typically results (i.e., the sum of all final allotments is usually either slightly greater or less than the total amount available for allotments). This round-off error is either subtracted from or added to the SAMHSA set-aside, as appropriate. Refer to Appendix Table H4 for an example of final allotment calculations.

Table 5.1 Data Elements and Data Sources for Projects for Assistance in Transition from Homelessness Formula Grant (PATH FG) Allotment Calculations

No.	Data File	Data Source
(For 50 States, DC, and PR; no data needed for 4 territories)		
1	Population (all ages combined) of Urbanized Areas	U.S. Census Bureau, Decennial Census

Figure 5.1 PATH FG Calculation Flowchart (Fifty States, the District of Columbia, Puerto Rico, and Four Territories – 56 Domains)



6. Types of Calculations and Quality Control

In the previous chapters, we have presented and discussed in great detail the formulas and calculation procedures that are currently used in the determination of allotments for the Substance Abuse Prevention and Treatment Block Grant (SAPT BG), the Mental Health Services Block Grant (MH BG), the Protection and Advocacy for Individuals with Mental Illness Formula Grant (PAIMI FG) and the Projects for Assistance in Transition from Homeless Formula Grant (PATH FG). In this chapter, we describe the schedule of calculations and the quality control procedures.

Types of Calculations

During a given fiscal year, at least two types of calculations are performed for each of the four grants. The first type of calculations is to determine the final allotments for the current fiscal year, based on the final appropriation determined by Congress. The second type of calculations is part of the Presidential/Congressional budget submissions for the next fiscal year.

For example, during fiscal year (FY) 2006, the two types were FY 2006 final appropriation-based allotment calculations and Presidential/Congressional budget-based allotment calculations for FY 2007. As another example, during FY 2007 the two types were FY 2007 final appropriation-based allotment calculations and Presidential/Congressional budget-based allotment calculations for FY 2008.

The source data that are the most current as of the first day of the prior fiscal year are used in the calculations of allotments for a given fiscal year. In the context of the first example, it was during FY 2005 that allotments for FY 2006, as part of the Congressional budget submission, were first calculated. Thus the "cutoff date" for source data used for FY 2006 allotment calculations was October 1, 2004 (i.e., the first day of FY 2005). In the context of the second example, it was during FY 2006 that allotments for FY 2007 were first calculated. Thus the "cutoff date" for source data used for FY 2007 allotment calculations was October 1, 2005 (i.e., the first day of FY 2006).

The examples of the two types of calculations performed for FYs 2006 and 2007 are further described below:

Fiscal Year *During* Which Calculations Were Performed	**Fiscal Year *for* Which Final Appropriation-Based Calculations Were Performed**	**Source Data Cutoff Date**	**Fiscal Year *for* Which Presidential/Congressional Budget-Based Calculations Were Performed**	**Source Data Cutoff Date**
FY 2006	FY 2006	Oct. 1, 2004	FY 2007	Oct. 1, 2005
FY 2007	FY 2007	Oct. 1, 2005	FY 2008	Oct. 1, 2006

Because the P factor for the SAPT BG, the MH BG, and the PAIMI FG gets updated each year, the next-fiscal-year budget-based allotment may be different from the final-appropriation-based allotment. However, for the PATH FG, the P factor (population of urbanized areas from the decennial census) remains the same for the current and next fiscal years (unless new decennial census data are available the next year), therefore the Domain allotments also remain the same, if the appropriation amount is unchanged.

Quality Control

Lotus spreadsheets have long been used by the contractor and the OAS staff to perform data aggregation and allotment calculations. Results have always been compared for verification purposes before they are delivered to the Substance Abuse and Mental Health Services Administration (SAMHSA) Budget Office. Recently the quality control procedures have been further strengthened.

- Beginning in FY 2006 SAMHSA/OAS first developed, then tested, and has since deployed SAS PROC SQL/PROC REPORT-based applications to independently perform core calculations for the SAPT BG, MH BG, PAIMI FG, and PATH FG programs.

- SAMHSA/OAS also developed a separate set of SAS applications to independently perform the data-aggregation at the Domain-level before they are fed into the core SAS applications as referred to above.

- In April 2006, SAMHSA/OAS also initiated the development of a comprehensive guide for the entire calculation process for the block and formula grants.

- At a meeting at SAMHSA/OAS on May 18, 2006, the A-123 Review Group endorsed the idea of verifying the allotment calculations using SAS-based applications.

- At the same meeting, the Group also recognized the importance of documenting the calculation processes, which SAMHSA/OAS had already started.

- During a follow-up meeting in late 2006, the A-123 Review Group recommended that the source data that are acquired for use in the calculations be stored centrally, and that the initial aggregated results from these data be compared and verified before they are used in SAS or Lotus-based allotment calculations. Accordingly, SAMHSA/OAS has started the process of storing the data centrally and comparing and verifying aggregated source data prior to using the same in allotment calculations.

- The final allotments calculated from the Lotus and SAS-based models match with differences typically in the tens-of-dollars place for some Domains. It is important to note that the spreadsheet results cannot be exactly reproduced by SAS due to numeric representation error (SAS, no date). Because SAS can only represent integer numbers up to a certain magnitude exactly and store the numeric variables as floating point binary numbers, the SAS operations may have reduced the number of significant digits in the numeric values of certain variables in the calculations. Ignoring these minor differences, the allotments as determined from the Lotus spreadsheet-based calculations are considered final.

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Appendix A: Referenced Text—Substance Abuse Prevention and Treatment Block Grant (SAPT BG) Allotment Calculations

In reference to the formulas described in the main text, presented here are relevant legislative excerpts (in *italics*) obtained from the website http://uscode.house.gov, and materials from other relevant sources. This appendix is intended to help readers understand the basis of the SAPT BG formulas.

Formula A1: Baseline Allotment Formula

The following portion of the law applies to the determination of SAPT BG baseline allotments.

42 USC Sec. 300x-33

"(a) States

(1) In general

Subject to subsection (b) of this section, the Secretary shall determine the amount of the allotment required in section 300x-21 of this title for a State for a fiscal year as follows:

(A) The formula established in paragraph (1) of section 300x-7(a) of this title shall apply to this subsection to the same extent and in the same manner as the formula applies for purposes of section 300x-7(a) of this title, except that, in the application of such formula for purposes of this subsection, the modifications described in subparagraph (B) shall apply.

(B) For purposes of subparagraph (A), the modifications described in this subparagraph are as follows:

(i) The amount specified in paragraph (2)(A) of section 300x-7(a) of this title is deemed to be the amount appropriated under section 300x-35(a) of this title for allotments under section 300x-21 of this title for the fiscal year involved.

(ii) The term "P" is deemed to have the meaning given in paragraph (2) of this subsection. Section 300x-7(a) (5) (B) of this title applies to the data used in determining such term for the States.

(iii) The factor determined under paragraph (8) of section 300x-7(a) of this title is deemed to have the purpose of reflecting the differences that exist between the State involved and other States in the costs of providing authorized services…"

Formula A1: Set-Aside for Substance Abuse and Mental Health Services Administration (SAMHSA) Technical Assistance

The following portion of the law specifies the amount of funding available to SAMHSA for the provision of technical assistance.

42 USC Sec. 300x-35

"Funding…

…(b) Allocations for technical assistance, national data base, data collection, and program evaluations (1) In general (A) For the purpose of carrying out section 300x-58(a) of this title with respect to substance abuse, section 290bb-21(d) of this title, and the purposes specified in subparagraphs (B) and (C), the Secretary shall obligate 5 percent of the amounts appropriated under subsection (a) of this section each fiscal year…"

Formula A1: Baseline Allotment Formula for States and the District of Columbia (DC)

The following portion of the law specifies the fundamental formula to be used for the determination of baseline allotments (i.e., prior to the application of statutory minimum constraints) for the States and DC.

42 USC Sec. 300x-7
"(a) States

(1) Determination under formula Subject to subsection (b) of this section, the Secretary shall determine the amount of the allotment required in section 300x of this title for a State for a fiscal year in accordance with the following formula: A (X / U)

(2) Determination of term "A". For purposes of paragraph (1), the term "A" means the difference between - (A) the amount appropriated under section 300x-9(a) of this title for allotments under section 300x of this title for the fiscal year involved; and (B) an amount equal to 1.5 percent of the amount referred to in subparagraph (A).

(3) Determination of term "U". For purposes of paragraph (1), the term "U" means the sum of the respective terms "X" determined for the States under paragraph (4).

(4) Determination of term "X". For purposes of paragraph (1), the term "X" means the product of - (A) an amount equal to the product of - (i) the term "P", as determined for the State involved under paragraph (5); and (ii) the factor determined under paragraph (8) for the State; and (B) the greater of - (i) 0.4; and (ii) an amount equal to an amount determined for the State in accordance with the following formula: 1 - .35(R% / P%)…"

Formula A2: Determination of Population-at-Risk Index (P_i)

The following portion of the law specifies the composition of the Population-at-Risk Index for the States and DC.

42 USC Sec. 300x-33
"(a) States…

> *…(2) Determination of term "P" For purposes of this subsection, the term "P" means the percentage that is the arithmetic mean of the percentage determined under subparagraph (A) and the percentage determined under subparagraph (B), as follows:*
>
> *(A) The percentage constituted by the ratio of - (i) an amount equal to the sum of the total number of individuals who reside in the State involved and are between 18 and 24 years of age (inclusive) and the number of individuals in the State who reside in urbanized areas of the State and are between such years of age; to (ii) an amount equal to the total of the respective sums determined for the States under clause (i).*
>
> *(B) The percentage constituted by the ratio of - (i) the total number of individuals in the State who are between 25 and 64 years of age (inclusive); to (ii) an amount equal to the sum of the respective amounts determined for the States under clause (i)…"*

Population estimates by age for urbanized areas are normally not available from the U.S. Census Bureau. Therefore, SAMHSA estimates these values using data from the most recent decennial census and the most current population estimates for the 18-24 age group, as shown in Formula A2. Below is the description of this methodology as published in the June 17, 1996, *Federal Register*, Page 30632.

"D. Population in Urbanized Areas for Substance Abuse Block Grant

The formula for the SAPT block grant adjusts for the population at risk for substance abuse using the State population between 18-24 years of age living in urbanized areas and the total U.S. population between 18-24 years living in urbanized areas. The U.S. Census Bureau does not make inter-censal estimates of the population living in urbanized areas. Therefore, the estimates of this population group are derived from the 1990 census."

Formula A2: Data on Population

The following portion of the law specifies the source data to be used in the determination of the Population-at-Risk Index.

42 USC Sec. 300x-7
"(a) States…

> *…(5) Determination of term "P"…*
>
> *…(B) With respect to data on population that is necessary for purposes of making a determination under subparagraph (A), the Secretary shall use the most recent data that is available from the Secretary of Commerce pursuant to the decennial census and pursuant to reasonable estimates by such Secretary of changes occurring in the data in the ensuing period…"*

Formula A3: Refinements to Methodology of Cost-of-Services Index Construction

The following portion of the law specifies the methodology to be used for calculation of the Cost-of-Services Index (by reference to an external document), upper and lower bounds for the index, and the frequency with which the index must be calculated. It also empowers the Secretary of DHHS to make refinements in the methodology used for calculation of the index as necessary.

42 USC Sec. 300x-7
"(a) States…

…(8) Determination of certain factor

(A) The factor determined under this paragraph for the State involved is a factor whose purpose is to adjust the amount determined under clause (i) of paragraph (4)(A), and the amounts determined under each of subparagraphs (B)(i) and (D) (ii) (I) of paragraph (6), to reflect the differences that exist between the State and other States in the costs of providing comprehensive community mental health services to adults with a serious mental illness and to children with a serious emotional disturbance.

(B) Subject to subparagraph (C), the factor determined under this paragraph and in effect for the fiscal year involved shall be determined according to the methodology described in the report entitled "Adjusting the Alcohol, Drug Abuse and Mental Health Services Block Grant Allocations for Poverty Populations and Cost-of-Service", dated March 30, 1990, and prepared by Health Economics Research, a corporation, pursuant to a contract with the National Institute on Drug Abuse.

(C) The factor determined under this paragraph for the State involved may not for any fiscal year be greater than 1.1 or less than 0.9.

(D) (i) Not later than October 1, 1992, the Secretary, after consultation with the Comptroller General, shall in accordance with this section make a determination for each State of the factor that is to be in effect for the State under this paragraph. The factor so determined shall remain in effect through fiscal year 1994, and shall be recalculated every third fiscal year thereafter. (ii) After consultation with the Comptroller General, the Secretary shall, through publication in the Federal Register, periodically make such refinements in the methodology referred to in subparagraph (B) as are consistent with the purpose described in subparagraph (A)…"

Although Paragraph A above refers to mental health services, etc., 42 U.S. Code (USC) Sec. 300x-33 (a)(1)(B)(iii) states that it refers to substance abuse prevention and treatment (SAPT) services for the purposes of determining SAPT BG allotments.

The methodology for calculation of the Cost-of-Services Index is specified on Pages 17 and 18, Section 5.2, "Adjusting the Alcohol, Drug Abuse and Mental Health Services Block Grant Allocations for Poverty Populations and Cost-of-Service," dated March 30, 1990, by

Health Economics Research, Inc." The overall cost index is defined as .10 + .75 X (wage index) + .15 X (rental index)."

The price proxy for labor is the median hourly earnings of all non-manufacturing workers from the 1980 Census of Population and Housing. The price proxy for building rental is the FMR for a four-bedroom unit established by the Department of Housing and Urban Development (HUD). The price proxy for supplies, drugs, and miscellaneous is assumed to be bought in a national market, with no geographic variations.

Formula A4: Conclusions of Expert Panel on Wage Subindex Calculations

In accordance with the law, SAMHSA refined the methodology by which the Wage Subindex of the Cost-of-Services Index is calculated. A panel of experts met on March 12, 1997, and developed the revised methodology for determination of the Wage Subindex, which has been in effect and employed by SAMHSA since fiscal year (FY) 1998.

The conclusions of the expert panel are listed below (Reference Page 11 of the document "Report of the Meeting of Experts to Review the Wage Proxy in the SAMHSA Block Grant Formula, March 1997").

"…

- SAMHSA should not use manufacturing wage rates as the proxy for the cost of labor in the Cost-of-Service Index in calculating the allotments under the Block Grant for Community Mental Health Services and the Block Grant for Prevention and Treatment of Substance Abuse.

- SAMHSA should use nonmanufacturing wage information collected in the Decennial Census specific to the industries and occupations known to be involved in providing mental health and substance abuse services as the proxy for the cost of labor in the Cost-of-Service Index.

- SAMHSA should use the HCFA Hospital Wage Rate Index to adjust the wage rate information from the decennial census to take into account changes in the relative wage rates among the states during the years between the surveys…"

Based upon the recommendations of the panel of experts, SAMHSA revised the methodology by which the Cost-of-Services Wage Subindex is calculated beginning in FY 1998. This methodology was documented in June 1997 in a SAMHSA internal memorandum.

"Index Base

The base is the 1990 decennial census mean wage for the following occupational categories:

physician (occupation code 084) components are from industry 812 (offices and clinics of doctors);

registered nurse (occupation code 095) components are from industry 812-830 plus 831 (812 – offices and clinics of doctors – through 830 – offices and clinics of other health practitioners; 831 – hospitals);

counselor (occupation code 163) components are for all industry codes, all education levels;

psychologist (occupation codes 166-173) components are for all industry codes, all education levels;

social worker (occupation code 174) components are for all industry codes, all education levels.

The mean wage is the total salary divided by the total hours worked; it is weighted by total annual work hours for the occupation categories. The U.S. Census Bureau produced a specially-extracted data file from its 16 percent sample of detailed data. Health Economics Research, Waltham, MA, produced the mean wage for each of the 50 States and DC using the census data file.

Index Update

The update is the percent change in the mean hourly hospital wage. The Health Care Financing Administration (HCFA) is the source of wage data for each hospital. The hospital average hourly wages are derived by calculating the sum of total salaries plus fringe benefits divided by total hours worked. Hospital workers in skilled nursing facilities, home health components of the hospital, and other parts of the hospital not reimbursed under HCFA Medicare Prospective Payment System (PPS) are excluded. Hospital workers under contract are included. The percent change for FY 1998 is calculated from the hourly wage applied to FY 1997 (based on FY 1993 data) and the hourly wage applied to FY 1993 (based on FY 1990 data).

Index Adjustment

The proposed wage index for FY 1998 (or any year) is calculated in two steps. First, the base wage is multiplied by the update for each State and DC to give an updated hourly wage. Second, the State updated hourly wage is divided into the national updated hourly wage for the wage index for the State. The wage index is then included in the cost-of-service index."

Formula A4: Calculation of Census-Based Mean Wage Rates

Both occupation and industry codes used for the 2000 Decennial Census were different from those used for the 1990 Decennial Census (cited in Appendix A4-B). The specificity of information required necessitated a query using a microdata sample. Public access to both a 1-Percent and 5-Percent Public Use Microdata Sample (PUMS) file was available. However, SAMHSA decided to take advantage of the full 16-Percent sample from the 2000 Decennial Census to which only the U.S. Census Bureau has access.

The following specifications were enumerated by SAMHSA for the special extract:

1. The sample used was the civilian labor force from the 2000 Decennial Census 16-Percent sample of U.S. households. Records with the Census variable MILITARY=1 ("now on active duty") were excluded. The analysis was restricted to individuals: (1) aged over 16; (2) worked (full-time or some) within the past 5 years (since 1994 for employment status as of 1999), and (3) were engaged in the specific industry-occupation categories.

2. Variables included total wage/salary income and total hours worked in each of the occupation-industry classes specified in (3). The "total wage/salary income" variable was the total of the Census Person variable INCWS, "Wage/Salary Income in 1999." The "total hours worked" variable was the total hours worked during 1999, or the sum of the products of the Census Person variables WEEKS ("Weeks Worked in 1999") times HOURS ("Hours per Week in 1999").

3. Occupation-Industry classes included the following:

   (1) "Counselors" - 2000 Census Occupation Code OCCCEN=200, employed in all industries

   (2) "Psychologists" - 2000 Census Occupation Code OCCCEN=182, employed in all industries

   (3) "Social Workers" - 2000 Census Occupation Code OCCCEN=201, employed in all industries

   (4) "Physicians and Surgeons" - 2000 Census Occupation Code OCCCEN=306, employed in industries INDCEN=797 ("Offices of Physicians") or INDCEN=809 ("Outpatient Care Centers")

   (5) "Registered Nurses" - 2000 Census Occupation Code OCCCEN=313, employed in industries INDCEN=797 ("Offices of Physicians") or INDCEN=809 ("Outpatient Care Centers") or INDCEN=808 ("Offices of Other Health Practitioners") or INDCEN=819 ("Hospitals").

Data were tabulated by the States wherein workers were employed, not where they resided. SAMHSA did not require data for work performed in U.S. territories, nor overseas by U.S. citizens. More specifically, data were tabulated using the Census Person variable POWST ("Place of Work State or Foreign Country Code") for FIPS codes=001-056 (i.e., for the 50 States and DC only). The goal was to produce a weighted mean hourly wage across the relevant occupations and industries by State.

Formula A4: HCFA/CMS-Based Wage Rates

HCFA (now CMS) provided direction to SAMHSA for the compilation of hospital wage data used to update the wage bases of the Cost-of-Services Wage Subindex (Reference email of April 12, 1999, from Valerie Miller of HCFA to Albert Woodward of SAMHSA). This direction was as follows (the years refer to the years in which the source data were collected by

HCFA/CMS, and the variable names are those used by HCFA/CMS in the hospital wage data file):

"Subtotal Salaries

1993: L03
1996: IIWG1 – (IIWG3 + IIWG5 + IIWG7 + IIWG8 + IIWG8_01)

Subtotal Hours

1993: L11
1996: IIHR1 – (IIHR3 + IIHR5 + IIHR7 + IIHR8 + IIHR8_01)

The variables cited above have the following definitions:

IIWG1/IIHR1 – Salaries/hours for all labor categories
IIWG3/IIHR3 – Salaries/hours for non-physician anesthetists
IIWG5/IIHR5 – Salaries/hours for physician Part B
IIWG7/IIHR7 – Salaries/hours for home office personnel
IIWG8/IIHR8 – Salaries/hours for Skilled Nursing Facilities
IIWG8_01/IIHR8_01 – Salaries/hours for excluded area salaries."

Formula A5: Rental Subindex Calculations

The methodology for calculation of the Cost-of-Services Rental Subindex is specified on Page 17, Section 5.2, "Adjusting the Alcohol, Drug Abuse and Mental Health Services Block Grant Allocations for Poverty Populations and Cost-of-Service," dated March 30, 1990, by Health Economics Research, Inc.

Formula A6: Fiscal Capacity Index (F_i) Construction for All But DC

The portion of the law below specifies the calculation of the Fiscal Capacity Index for the 50 States.

42 USC Sec. 300x-7
"*(a) States…*

…(4)(B) the greater of - (i) 0.4; and (ii) an amount equal to an amount determined for the State in accordance with the following formula: 1 - .35(R% / P%)…

…(6) Determination of term "R%"

(A) For purposes of paragraph (4), the term "R%", except as provided in subparagraph (D), means the percentage constituted by the ratio of the amount determined under subparagraph (B) for the State involved to the amount determined under subparagraph (C).

(B) The amount determined under this subparagraph for the State involved is the quotient of - (i) the most recent 3-year arithmetic mean of the total taxable resources of the State, as determined by the Secretary of the Treasury; divided by (ii) the factor determined under paragraph (8) for the State.

(C) The amount determined under this subparagraph is the sum of the respective amounts determined for the States under subparagraph (B) (including the District of Columbia)…

…(7) Determination of term "P%"

For purposes of paragraph (4), the term "P%" means the percentage constituted by the ratio of the term "P" determined under paragraph (5) for the State involved to the sum of the respective terms "P" determined for the States…"

Formula A7: Fiscal Capacity Index Construction for DC (F_{DC})

The portion of the law below specifies the calculation of the Fiscal Capacity Index for DC.

42 USC Sec. 300x-7
"(a) States…

…(4)(B) the greater of - (i) 0.4; and (ii) an amount equal to an amount determined for the State in accordance with the following formula:1 - .35(R% / P%)…

…(6) Determination of term "R%"…

… (D)

In the case of the District of Columbia, for purposes of paragraph (4), the term "R%" means the percentage constituted by the ratio of the amount determined under clause (ii) for such District to the amount determined under clause (iii).

The amount determined under this clause for the District of Columbia is the quotient of - (I) the most recent 3-year arithmetic mean of total personal income in such District, as determined by the Secretary of Commerce; divided by (II) the factor determined under paragraph (8) for the District.

The amount determined under this clause is the sum of the respective amounts determined for the States (including the District of Columbia) by making, for each State, the same determination as is described in clause (ii) for the District of Columbia.

(7) Determination of term "P%"

For purposes of paragraph (4), the term "P%" means the percentage constituted by the ratio of the term "P" determined under paragraph (5) for the State involved to the sum of the respective terms "P" determined for the States…"

Formula A8: Determining BESMA versus ASMA States

The criteria for determining minimum allotments for States are specified in the law, and are shown below.

42 USC Sec. 300x-33
"…(b) Minimum allotments for States

(1) In general

With respect to fiscal year 2000, and each subsequent fiscal year, the amount of the allotment of a State under section 300x-21 of this title shall not be less than the amount the State received under such section for the previous fiscal year increased by an amount equal to 30.65 percent of the percentage by which the aggregate amount allotted to all States for such fiscal year exceeds the aggregate amount allotted to all States for the previous fiscal year.

(2) Limitations

(A) In general

Except as provided in subparagraph (B), a State shall not receive an allotment under section 300x-21 of this title for a fiscal year in an amount that is less than an amount equal to 0.375 percent of the amount appropriated under section 300x-35(a) of this title for such fiscal year.

(B) Exception

In applying subparagraph (A), the Secretary shall ensure that no State receives an increase in its allotment under section 300x-21 of this title for a fiscal year (as compared to the amount allotted to the State in the prior fiscal year) that is in excess of an amount equal to 300 percent of the percentage by which the amount appropriated under section 300x-35(a) of this title for such fiscal year exceeds the amount appropriated for the prior fiscal year…"

Formula A9: Scaled Allotments for ASMA States

Formula A9 is not specified in the law, but rather is a procedure that was developed by SAMHSA and the General Accounting Office (GAO, now the Government Accountability Office) in order to determine the allotments for ASMA States (i.e., allotments for those States for which the statutory minimums [Formula A8] do not apply).

For a given cycle in which funding is redistributed from ASMA States to BESMA States, a "Scale Factor" is determined. The Scale Factor is used to reduce the allotments of ASMA States, by a uniform proportion, and effectively transfers funding to BESMA States so that all BESMA States in that cycle receive statutory minimum allotments.

Scaled allotments of ASMA States are tested against statutory minimums at the end of each redistribution cycle. If the allotments for any States fall below or equal to the statutory minimums, then another redistribution cycle is performed in which the allotments for any such States are set to statutory minimums.

Formula A10: Final Allotment for States

The final allotment for a State is either the statutory minimum allotment as specified by the law (i.e., for BESMA States, Appendix A, Formula A8), or a scaled formula allotment (i.e., for ASMA States, Appendix A, Formula A9).

Final allotments are determined only after a sufficient number of funding redistribution cycles have been performed, resulting in all States having allotments either equal to or greater than the statutory minimums.

Formula A11: Determining State Allotments When the Appropriation Amount Decreased or Remained the Same as the Prior Year's Amount

The portion of the law cited below specifies how State allotments are to be determined if the total appropriation amount for the subject (or reference) fiscal year is less than or equal to that for the prior fiscal year.

42 USC Sec. 300x-33
"…(b) Minimum allotments for States…

> *…(3) Decrease in or equal appropriations. If the amount appropriated under section 300x-35(a) of this title for a fiscal year is equal to or less than the amount appropriated under such section for the prior fiscal year, the amount of the State allotment under section 300x-21 of this title shall be equal to the amount that the State received under section 300x-21 of this title in the prior fiscal year decreased by the percentage by which the amount appropriated for such fiscal year is less than the amount appropriated or (!1) such section for the prior fiscal year…*
>
> *…-FOOTNOTE-*
>
> *(!1) So in original. Probably should be "for"…"*

Formula A12: Determining Allotment for Red Lake Indians and the Remainder of the Minnesota Allotment

42 USC Sec. 300x-33
"…(d) Indian tribes and tribal organizations

> *(1) In general*
>
> > *If the Secretary - (A) receives a request from the governing body of an Indian tribe or tribal organization within any State that funds under this subpart be provided directly by the Secretary to such tribe or organization; and (B) makes a*

determination that the members of such tribe or tribal organization would be better served by means of grants made directly by the Secretary under this; (!2) the Secretary shall reserve from the allotment under section 300x-21 of this title for the State for the fiscal year involved an amount that bears the same ratio to the allotment as the amount provided under this subpart to the tribe or tribal organization for fiscal year 1991 for activities relating to the prevention and treatment of the abuse of alcohol and other drugs bore to the amount of the portion of the allotment under this subpart for the State for such fiscal year that was expended for such activities…

…-FOOTNOTE-…

…(!2) So in original. Probably should be "this subpart…"

Below is a description of why an allotment is made directly to the Red Lake Indians and how the allotment for Minnesota is apportioned between the Red Lake Indians and the remainder of the State. This information was promulgated by SAMHSA in the June 17, 1996, *Federal Register*, Page 30632.

"E. Indian Tribes Receiving Direct Allotments Under the Substance Abuse Block Grant

Section 1933(d) of the Act provides for separate grants for substance abuse prevention and treatment to Indian tribes or tribal organizations. Several categorical grant programs for which a number of tribes had been direct recipients were folded into the former ADMS block grant when it was established in 1981. The Red Lake Band of the Chippewa Indians in Minnesota was the only tribe or tribal organization still receiving ADMS block grant funds at the time the SAPT Block Grant was established in 1992 and is therefore the only Indian tribe currently eligible for direct receipt of funds. This group continues to receive a direct allotment under the SAPT Block Grant. The funding level for the Red Lake Indians, as determined by SAMHSA based on FY 1991 funding levels, is 0.0240535 of the total amount of the Minnesota annual allocation."

Formula A13: Baseline Allotments for Territory Allotments

The portion of the law specifying the set-aside for SAMHSA technical assistance is cited in Appendix A, Formula A1. The rest of the law pertaining to the determination of baseline territory allotments is cited below.

42 USC Sec. 300x-33
"…(c) Territories

(1) Determination under formula. Subject to paragraphs (2) and (4), the amount of an allotment under section 300x-21 of this title for a territory of the United States for a fiscal year shall be the product of – (A) an amount equal to the amounts reserved under paragraph (3) for the fiscal year; and (B) a percentage equal to the quotient of - (i) the civilian population of the territory, as indicated by the most recently available data; divided by (ii) the aggregate civilian population of the territories of the United States, as indicated by such data…

… (3) Reservation of amounts. The Secretary shall each fiscal year reserve for the territories of the United States 1.5 percent of the amounts appropriated under section 300x-35(a) of this title for allotments under section 300x-21 of this title for the fiscal year…

…(5)Applicability of certain provisions. For purposes of subsections (a) and (b) of this section, the term "State" does not include the territories of the United States…"

Note: Three entities which receive allotments are former U.S. territories rather than current territories.

Formula A13: Population Data Used for Determination of Territory Allotments

The law provides the following direction regarding population data to be used in the determination of territory allotments.

42 USC Sec. 300x-33
"…(c) Territories…

…(4) Availability of data on population. With respect to data on the civilian population of the territories of the United States, if the Secretary determines for a fiscal year that recent such data for purposes of paragraph (1)(B) do not exist regarding a territory, the Secretary shall for such purposes estimate the civilian population of the territory by modifying the data on the territory to reflect the average extent of change occurring during the ensuing period in the population of all territories with respect to which recent such data do exist…"

SAMHSA promulgated, in the June 17, 1996, *Federal Register*, Page 30632, the following information concerning population data used for the determination of territory allotments.

"C. Population Estimates for Territories

For both the mental health and the substance abuse block grants the law provides that the Secretary shall estimate the civilian population of a territory current [sic] if data on the civilian population of the territory does [sic] not exist. These estimates are developed by modifying the population estimates for the territories for which recent data do not exist by the average increase or decrease in the population of all territories for which there are recent data…

…The Bureau of the Census has made post-1990 decennial census estimates only for Puerto Rico. With post-1990 estimates available only for Puerto Rico, the only way to adjust the population estimates for the other territories is to assume that the percentage change in the population of each is similar to the percentage change in Puerto Rico. Since the distribution of funding for each territory is proportional to its contribution to the total population of the territories, any adjustment based only on the change for Puerto Rico would not alter the allocation of funds. Therefore, the territory population data and estimates for 1990 continue to be used for allocation purposes."

Note: SAMHSA is currently using, and has used since they became available, population data collected in the 2000 Decennial Census for current U.S. territories, and 2000 census data provided by three former U.S. territories.

Formula A14: Determining BESMA versus ASMA Territory Allotments

The criteria for determining minimum allotments for territories are specified in the law, and are shown below.

42 USC Sec. 300x-33
"…(c) Territories…

> *…(2) Minimum allotment for territories. The amount of an allotment under section 300x-21 of this title for a territory of the United States for a fiscal year shall be the greater of – the amount determined under paragraph (1) for the territory for the fiscal year; 50,000; and (c) with respect to fiscal years 1993 and 1994, an amount equal to 79.4 percent of the amount received by the territory from allotments made pursuant to this part for fiscal year 1992…"*

Formula A15: Scaled Allotments for ASMA Territories

Formula A15 is not specified in the law, but is rather a procedure that was developed by SAMHSA in order to determine the allotments for ASMA territories (i.e., allotments for those territories for which the statutory minimum [Appendix A, Formula A14] does not apply).

For a given cycle in which funding is redistributed from ASMA territories to BESMA territories, a "Scale Factor" is determined. The Scale Factor is used to reduce the allotments of ASMA territories, by a uniform proportion, and effectively transfers funding to BESMA territories so that all BESMA territories in that cycle receive the statutory minimum allotment.

Scaled allotments of ASMA territories are tested against the statutory minimum at the end of each redistribution cycle. If the allotments for any territories fall below or equal to the statutory minimum, then another redistribution cycle is performed in which the allotments for any such territories are set to the statutory minimum.

Formula A16: Final Allotment Formula for Territories

The final allotment for a territory is either the statutory minimum allotment as specified by the law (i.e., for BESMA territories, Appendix A, Formula A14), or a scaled formula allotment (i.e., for ASMA territories, Appendix A, Formula A15). Final allotments are determined only after a sufficient number of funding redistribution cycles have been performed, resulting in all territories having allotments either equal to or greater than the statutory minimum.

Cutoff Date for Source Data Used in Allotment Determinations

SAMHSA promulgated, in the June 17, 1996, *Federal Register*, Page 30631, the following information concerning the establishment and use of a "cutoff date" for source data used in the determination of allotments.

"A. Establishment of Cutoff Date for 'Most Recent Data'

The legislation for both block grants refers to use of the most recent available data in calculating the allotments for each State and territory. Section 1918(a)(5)(B) states that 'With respect to data on population that is necessary for purposes of making a determination under subparagraph (A), the Secretary shall use the most recent data that is [sic] available from the Secretary of Commerce pursuant to the decennial census and pursuant to reasonable estimates by such Secretary of changes occurring in the data in the ensuing period. 'Section 1918(a)(6)(B)(I) requires use of 'the most recent 3-year arithmetic mean of the total taxable resources of the State, as determined by the Secretary of the Treasury.' Section 1918(a)(6)(D)(ii) requires 'the most recent 3-year arithmetic mean of total personal income in such District [the District of Columbia], as determined by the Secretary of Commerce.'

When the legislation for the two block grants was first implemented, SAMHSA staff tried to update population and other data whenever new estimates of the block grant allotments were required. This caused considerable confusion because projections of specific State allotments under the two Block Grant programs were changing constantly. Specific State allotment projections for various appropriation levels must be provided to Congress early in the budget consideration process; and changing estimates complicate the decision making process.

Given the time constraints and the need for consistent estimates for the budget process, SAMHSA now bases all calculations on the latest data available by the beginning of each fiscal year (October 1). For example, allotments for FY 1997, determined during FY 1996, employ those data available as of October 1, 1995. This approach was adopted for all allotment determinations beginning with those for FY 1996. Congress was notified of the change in approach in February 1995."

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Appendix B: Referenced Text—Mental Health Services Block Grant (MH BG) Allotment Calculations

In reference to the formulas described in the main text, presented here are relevant legislative excerpts (in *italics*) obtained from the website http://uscode.house.gov. The excerpts of MH BG formulas that are the same as those of the SAPT BG formulas have not been repeated, but are referenced. This appendix is expected to help readers understand the basis of the MH BG formulas.

Formula B1: Set-Aside for Substance Abuse and Mental Health Services Administration (SAMHSA) Technical Assistance

The following portion of the law specifies the amount of funding available to SAMHSA for the provision of technical assistance.

42 USC Sec. 300x-9
"Funding…

…(b) Allocations for technical assistance, data collection, and program evaluation

In general

For the purpose of carrying out section 300x-58(a) of this title with respect to mental health and the purposes specified in paragraphs (2) and (3), the Secretary shall obligate 5 percent of the amounts appropriated under subsection (a) of this section for a fiscal year…"

Formula B1: Baseline Allotment for States and the District of Columbia (DC)

Refer to Appendix A.

Formula B2: Determination of Weighted Population-at-Risk (P_i)

42 USC Sec. 300x-7
"(a) States…

…(5) Determination of term "P"

For purposes of paragraph (4), the term "P" means the sum of - (i) an amount equal to the product of 0.107 and the number of individuals in the State who are between 18 and 24 years of age (inclusive); (ii) an amount equal to the product of 0.166 and the number of individuals in the State who are between 25 and 44 years of age (inclusive); (iii) an amount equal to the product of 0.099 and the number of individuals in the State who are

between 45 and 64 years of age (inclusive); and (iv) an amount equal to the product of 0.082 and the number of individuals in the State who are 65 years of age or older…"

Formula B2: Data on Population Index (P_i)

Refer to Appendix A.

Formula B3: Cost-of-Services Index (C_i)

Refer to Appendix A.

Formula B4: Wage Subindex (W_i)

Refer to Appendix A.

Formula B5: Rental Subindex (R_i)

Refer to Appendix A.

Formulas B6 and B7: Fiscal Capacity Index (F_i)

Refer to Appendix A. For MH BG calculations, the *P* factor (shown in Appendix B, Formula B2) is applicable rather than the one shown in Appendix A.

Formula B8: Determining BESMA versus ASMA States

The criterion for determining minimum allotments for States is specified in the law, and is shown below.

42 USC Sec. 300x-7
"…(b) Minimum allotments for States

With respect to fiscal year 2000, and subsequent fiscal years, the amount of the allotment of a State under section 300x of this title shall not be less than the amount the State received under such section for fiscal year 1998…"

Formula B9: Scaled Allotments for ASMA States

Refer to SAPT Appendix A, Formula A9.

For MH, the minimum allotment constraint in MH Appendix B, Formula B8 is applicable rather than the minimum allotment constraints in SAPT Appendix A, Formula A8.

Formula B10: Final Allotments for States

Refer to SAPT Appendix A, Formula A10.

The minimum allotment constraint in MH BG Formula B8 is applicable rather than the minimum allotment constraints in SAPT Formula A8.

Formula B11: Baseline Allotments for Territories

The portion of the law specifying the set-aside for SAMHSA technical assistance is cited in Appendix B, Formula B1. The rest of the law pertaining to the determination of baseline territory allotments is cited below.

42 USC Sec. 300x-7
"…(c) Territories

Determination under formula

Subject to paragraphs (2) and (4), the amount of an allotment under section 300x of this title for a territory of the United States for a fiscal year shall be the product of –

(A) an amount equal to the amounts reserved under paragraph (3) for the fiscal year; and

(B) a percentage equal to the quotient of–

(i) the civilian population of the territory, as indicated by the most recently available data; divided by

(ii) the aggregate civilian population of the territories of the United States, as indicated by such data…

…(3) Reservation of amounts

The Secretary shall each fiscal year reserve for the territories of the United States 1.5 percent of the amounts appropriated under section 300x-9(a) of this title for allotments under section 300x of this title for the fiscal year…

…(5) Applicability of certain provisions

For purposes of subsection (a) of this section, the term "State" does not include the territories of the United States."

Formula B11: Population Data for Territory Allotments

The law provides the following direction regarding population data to be used in the determination of territory allotments.

42 USC Sec. 300x-7
"…(c) Territories…

…(4) Availability of data on population

With respect to data on the civilian population of the territories of the United States, if the Secretary determines for a fiscal year that recent such data for purposes of paragraph (1)(B) do not exist regarding a territory, the Secretary shall for such purposes

estimate the civilian population of the territory by modifying the data on the territory to reflect the average extent of change occurring during the ensuing period in the population of all territories with respect to which recent such data do exist…"

SAMHSA promulgated, in the June 17, 1996, *Federal Register*, Page 30632, the following information concerning population data used for the determination of territory allotments.

"C. Population Estimates for Territories

For both the mental health and the substance abuse block grants the law provides that the Secretary shall estimate the civilian population of a territory current [sic] if data on the civilian population of the territory does [sic] not exist. These estimates are developed by modifying the population estimates for the territories for which recent data do not exist by the average increase or decrease in the population of all territories for which there are recent data…

…The Bureau of the Census has made post-1990 decennial census estimates only for Puerto Rico. With post-1990 estimates available only for Puerto Rico, the only way to adjust the population estimates for the other territories is to assume that the percentage change in the population of each is similar to the percentage change in Puerto Rico. Since the distribution of funding for each territory is proportional to its contribution to the total population of the territories, any adjustment based only on the change for Puerto Rico would not alter the allocation of funds. Therefore, the territory population data and estimates for 1990 continue to be used for allocation purposes."

SAMHSA is currently using, and has used since they became available, population data collected in the 2000 decennial census for current U.S. territories, and 2000 census data provided by three former U.S. territories.

Formula B12: Determining BESMA versus ASMA Territory Allotments

The criteria for determining minimum allotments for territories are specified in the law, and are shown below.

42 USC Sec. 300x-7
"…(c) Territories…

…(2) Minimum allotment for territories

The amount of an allotment under section 300x of this title for a territory of the United States for a fiscal year shall be the greater of –

(A) the amount determined under paragraph (1) for the territory for the fiscal year;

(B) 50,000; and

(C) with respect to fiscal years 1993 and 1994, an amount equal to 20.6 percent of the amount received by the territory from allotments made pursuant to this part for fiscal year 1992…"

Formula B13: Scaled Allotments for ASMA Territories

Refer to Appendix A SAPT Formula A15.

Formula B14: Final Allotment Formula for Territories

Refer to Appendix A SAPT Formula A16.

Cutoff Date for Source Data Used in Allotment Determinations

Refer to Appendix A SAPT Formula A17.

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Appendix C: Referenced Text—Protection and Advocacy for Individuals with Mental Illness Formula Grant (PAIMI FG) Allotment Calculations

In reference to the formulas described in the main text, presented here are relevant legislative excerpts obtained from the website http://uscode.house.gov and appear in *italics*. This appendix is intended to help readers understand the basis of the PAIMI FG formulas.

Formula C1: Set-Aside for the Substance Abuse and Mental Health Services Administration (SAMHSA)

The following portion of the law specifies the amount of funding available to SAMHSA for the provision of technical assistance.

42 USC Sec. 10825
"Technical Assistance

> *The Secretary shall use not more than 2 percent of the amounts appropriated under section 10827 of this title to provide technical assistance to eligible systems with respect to activities carried out under this subchapter, consistent with requests by such systems for such assistance."*

Note: SAMHSA actually uses a 2 percent set-aside.

Formula C1: Baseline Allotment

The following portion of the law specifies the formula to be used for the determination of baseline allotments (i.e., prior to the application of statutory minimum constraints) for the States, District of Columbia (DC), Puerto Rico, four other U.S. territories, and the American Indian Consortium.

42 USC Sec. 10822
"Allotment formula and reallotments

> *(a)(1)(A) Except as provided in paragraph (2) and subject to the availability of appropriations under section 10827 of this title, the Secretary shall make allotments under section 10803 of this title from amounts appropriated under section 10827 of this title for a fiscal year to eligible systems on the basis of a formula prescribed by the Secretary which is based equally –*
>
> *(i) on the population of each State in which there is an eligible system; and*
>
> *(ii) on the population of each such State weighted by its relative per capita income.*

(B) For purposes of subparagraph (A)(ii), the term "relative per capita income "means the quotient of the per capita income of the United States and the per capita income of the State, except that if the State is Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Marshall Islands, the Federated States of Micronesia, the Republic of Palau, or the Virgin Islands, the quotient shall be considered to be one..."

With regard to the "per capita income of the United States, "SAMHSA calculates and uses a population-weighted PCI for the United States using data for Domains for which the PCI is known (i.e., the 50 States, DC, and PR), rather than using an unweighted PCI for the nation.

Formula C1: Baseline Allotment—Definition of "State"

For the purposes of the computations specified in 42 U.S. Code (USC) Sec. 10822 Paragraph (a)(1)(A) (refer to Appendix 1-B), all Domains except the American Indian Consortium are referred to as "States."

42 USC Sec. 10802
"Definitions

For purposes of this title:…

…(7) The term "State" means each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Commonwealth of the Northern Mariana Islands, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands.

(8) The term "American Indian Consortium" means a consortium established under part C of the Developmental Disabilities Assistance and Bill of Rights Act (42 U.S.C. 6042 et seq.)"

Note: An amendment to the law in 2000 replaced the term "Trust Territory of the Pacific Islands" with Marshall Islands, Federated States of Micronesia, and Republic of Palau.

Formula C2: Determining BESMA versus ASMA Domains

The criteria for determining minimum allotments for all Domains (States, DC, Puerto Rico, four territories other than Puerto Rico, and the American Indian Consortium), are specified in the law and are shown below.

42 USC Sec. 10822
"Allotment formula and reallotments

(a)…

…(2)(A) The minimum amount of the allotment of an eligible system shall be the product (rounded to the nearest 100) of the appropriate base amount determined under subparagraph (B) and the factor specified in subparagraph (C).

(B) For purposes of subparagraph (A), the appropriate base amount -

for American Samoa, Guam, the Marshall Islands, the Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, the Republic of Palau, and the Virgin Islands, is 139,300; and

(ii) for any other State, is 260,000.

(C) The factor specified in this subparagraph is the ratio of the amount appropriated under section 10827 of this title for the fiscal year for which the allotment is being made to the amount appropriated under such section for fiscal year 1995.

(D) If the total amount appropriated for a fiscal year is at least 25,000,000, the Secretary shall make an allotment in accordance with subparagraph (A) to the eligible system serving the American Indian consortium…"

Formula C3: Scaled Allotments for ASMA Domains

Formula C3 is not specified in the law, but is a procedure that was developed by SAMHSA in order to determine the allotments for ASMA Domains (i.e., allotments for those Domains for which the statutory minimums do not apply).

For a given cycle in which funding is redistributed from ASMA Domains to BESMA Domains, a "Scale Factor" is determined. The Scale Factor is used to reduce the allotments of ASMA Domains, by a uniform proportion, and effectively transfers funding to BESMA Domains so that the latter in that cycle receive statutory minimum allotments.

Scaled allotments of ASMA Domains are tested against statutory minimums at the end of each redistribution cycle. If the allotments for any Domains fall below the statutory minimums, then another redistribution cycle is performed in which the allotments for any such Domains are set to statutory minimums.

Formula C4: Final Allotment Formula for Domains

The final allotment for a Domain is either the statutory minimum allotment as specified by the law (i.e., for BESMA Domains, Formula C2), or a scaled formula allotment (i.e., for ASMA Domains, Formula C3). Final allotments are determined only after a sufficient number of funding redistribution cycles have been performed, resulting in all Domains having allotments either equal to or greater than the statutory minimums.

Cutoff Date for Source Data Used in Allotment Determinations

Shortly after OAS assumed responsibility for determination of PAIMI FG allotments, the same "cutoff date" rule was applied to the determination of PAIMI allotments as has been applied to the determination of MH and SAPT allotments, as described in the June 17, 1996, *Federal Register*, Page 30631 (refer to SAPT Appendix, last section).

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Appendix D: Referenced Text—Projects for Assistance in Transition from Homelessness Formula Grant (PATH FG) Allotment Calculations

In reference to the formulas in the main text, presented here are relevant legislative excerpts obtained from the website http://uscode.house.gov and appear in *italics*. This appendix is intended to help readers understand the basis of the PATH FG formulas.

Formula D1: Set-Aside for the Substance Abuse and Mental Health Services Administration (SAMHSA)

The law does not specify the amount for a SAMHSA set-aside for the PATH FG program. Since fiscal year (FY) 2005, the PATH FG set-aside has been 4.4 percent of the total appropriation amount, which consisted of 2 percent for technical assistance and 2.4 percent for the Public Health Service (PHS) Section 241 tap.

Formula D1: Baseline Allotment Formula

The following portion of the law specifies the formula to be used for the determination of baseline allotments (i.e., prior to the application of statutory minimum constraints) for the States, District of Columbia (DC), Puerto Rico, and four other U.S. territories.

42 USC Sec. 290cc-24
"Determination of amount of allotment…

…(b) Determination under formula

The amount referred to in subsection (a)(2) of this section is the product of-

(1) an amount equal to the amount appropriated under section 290cc-35(a) of this title for the fiscal year; and

(2) a percentage equal to the quotient of-

(A) an amount equal to the population living in urbanized areas of the State involved, as indicated by the most recent data collected by the Bureau of the Census; and

(B) an amount equal to the population living in urbanized areas of the United States, as indicated by the sum of the respective amounts determined for the States under subparagraph (A)."

Although the law directs that the populations of urbanized areas of the four territories are to be considered (refer to Appendix D, Formula D1, definition of "State"), such information is not available and, therefore, not used in the determination of allotments.

Formula D1: Baseline Allotment for "States"

For the purposes of the computations specified in 42 U.S. Code (USC) Sec. 290cc-24 Paragraph (b)(2) (refer to Appendix D, Formula D1), all Domains are referred to as "States."

42 USC Sec. 290cc-34
"Definitions

For purposes of this part:…

…(3) State

The term "State" means each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands…"

As noted in Appendix D, Formula D1, data on the population of urbanized areas of the four territories (other than Puerto Rico) are not available.

Formula D2: Determining BESMA versus ASMA Domains

The criteria for determining minimum allotments for all Domains (States, DC, Puerto Rico, and the four territories other than Puerto Rico), when sufficient funds exist so that statutory minimum allotment constraints can be satisfied, are specified in the law and are shown below.

42 USC Sec. 290cc-24
"Determination of amount of allotment

(a) *Minimum allotment*

The allotment for a State under section 290cc-21 of this title for a fiscal year shall be the greater of -

(1) 300,000 for each of the several States, the District of Columbia, and the Commonwealth of Puerto Rico, and 50,000 for each of Guam, the Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands; and

(2) an amount determined in accordance with subsection (b) of this section…"

Formula D2: Contingency if Appropriation Amount is Insufficient to Make Statutory Minimum Allotments to All Domains

In the event that the total appropriation amount is insufficient to make statutory minimum allotments to all Domains, then the Secretary of DHHS is empowered to make discretionary

grants to some, but not necessarily all, Domains. The applicable portion of the law which addresses this contingency is cited below.

42 USC Sec. 290cc-35
"Funding…

> *…(b) Effect of insufficient appropriations for minimum allotments*
>
> *(1) In general*
>
> *If the amounts made available under subsection (a) of this section for a fiscal year are insufficient for providing each State with an allotment under section 290cc-21 of this title of not less than the applicable amount under section 290cc-24(a)(1) of this title, the Secretary shall, from such amounts as are made available under such subsection, make grants to the States for providing to eligible homeless individuals the services specified in section 290cc-22(b) of this title.*
>
> *(2) Rule of construction*
>
> *Paragraph (1) may not be construed to require the Secretary to make a grant under such paragraph to each State."*

Formula D3: Scaled Allotments for ASMA Domains

Formula D3 is not specified in the law, but is rather a procedure that was developed by SAMHSA in order to determine the allotments for ASMA Domains (i.e., allotments for those States for which the statutory minimums [Reference Appendix D, Formula D2] do not apply). For a given cycle in which funding is redistributed from ASMA Domains to BESMA Domains, a "Scale Factor" is determined. The Scale Factor is used to reduce the allotments of ASMA Domains, by a uniform proportion, and effectively transfers funding to BESMA Domains so that the latter in that cycle receive statutory minimum allotments.

Scaled allotments of ASMA Domains are tested against statutory minimums at the end of each redistribution cycle. If the allotments for any Domains fall below the statutory minimums, then another redistribution cycle is performed in which the allotments for any such Domains are set to statutory minimums.

Formula D4: Final Allotment Formula for Domains

The final allotment for a Domain is either the statutory minimum allotment as specified by the law (i.e., for BESMA Domains, Appendix D, Formula D2), or a scaled formula allotment (i.e., for ASMA Domains, Appendix D, Formula D3). Final allotments are determined only after a sufficient number of funding redistribution cycles have been performed, resulting in all Domains having allotments either equal to or greater than the statutory minimums.

Cutoff Date for Source Data Used in Allotment Determinations

Shortly after OAS assumed responsibility for determination of PATH FG allotments, the same "cutoff date" rule was applied to the determination of PATH allotments as has been applied to the determination of MH and SAPT allotments, as described in the June 17, 1996, *Federal Register*, Page 30631 (refer to Appendix A, last section).

Appendix E: SAPT BG Allotment Calculations in Spreadsheet—Examples

The tables contained in this appendix are hypothetical examples of the tables that are usually produced in SAPT BG allotment calculations. The example-tables are included here just to illustrate the calculation process. In these examples, the calendar or fiscal years to which the source data pertain are specified. However, we deliberately avoided specifying the reference fiscal year for which the final allotment figures by State or territory were calculated. Furthermore, the appropriation used in the calculations is also hypothetical and does not necessarily represent the appropriation for any fiscal year. For States and territories, the final allotment figures shown here should also not be viewed as the actual allotment awards.

Table E1. Budget Appropriation, Technical Assistance, and Net Amount Available for SAPT BG for a Given Reference Fiscal Year (Scenario 1)

Appropriation (Reference Fiscal Year) ($)	1,779,146,000.00
Set-aside ($AP_{RFY} \times 0.05$) ($)	88,957,300.00
Available for Allotments for Fifty States, District of Columbia, and Eight Territories ($)	1,690,188,700.00
Available for Allotments for Fifty States and District of Columbia ($)	1,664,835,869.50
Available for Allotments for Eight Territories	25,352,830.50
Appropriation (Prior Fiscal Year) ($)	1,753,932,000.00
Statutory Minimum Allotment for States and District of Columbia	May Vary as Shown in the Subsequent Tables
Statutory Minimum Allotment for Territories ($)	50,000.00
Rate of Increase in Appropriation, r*	0.014376

$$*r = \frac{AP_{RFY} - AP_{RFY-1}}{AP_{RFY-1}} = \frac{1,779,146,000 - 1,753,932,000}{1,753,932,000} = \frac{25,214,000}{1,753,932,000} = 0.014376$$

Table E2. Construction of Population-At-Risk Index in SAPT BG Allotment Calculations (Scenario 1)

Used In:	Formula A2	Formula A2	Formula A2	Formula A2	Formula A2
State	Population Aged 18-24 2000 ($P_{i, 18-24}$)*	Urban Population Aged 18-24 Census 2000 ($UP_{i, 18-24}$)*	Sum of ($P_{i, 18-24}$) and ($UP_{i, 18-24}$)	Population Aged 25-64 2000 ($P_{i, 25-64}$)*	Population-at-Risk Index (P_i)
Alabama	439,612	219,481	659,093	2,304,268	0.01494
Alaska	57,292	29,405	86,697	343,224	0.00210
Arizona	514,101	415,988	930,089	2,581,745	0.01881
Arkansas	261,738	97,397	359,135	1,357,274	0.00849
California	3,366,030	3,000,188	6,366,218	17,660,131	0.12871
Colorado	430,111	340,163	770,274	2,354,282	0.01631
Connecticut	271,585	225,959	497,544	1,822,109	0.01156
Delaware	75,328	56,623	131,951	411,959	0.00282
District of Columbia	72,637	73,192	145,829	314,532	0.00264
Florida	1,330,602	1,135,372	2,465,974	8,197,839	0.05447
Georgia	837,732	535,768	1,373,500	4,394,212	0.02976
Hawaii	114,893	84,090	198,983	640,276	0.00432
Idaho	138,829	66,047	204,876	640,178	0.00439
Illinois	1,210,898	962,841	2,173,739	6,462,919	0.04542
Indiana	614,721	390,266	1,004,987	3,138,537	0.02151
Iowa	298,008	148,500	446,508	1,458,465	0.00977
Kansas	275,592	125,210	400,802	1,343,604	0.00889
Kentucky	401,858	168,774	570,632	2,140,300	0.01343
Louisiana	473,801	279,857	753,658	2,258,447	0.01581
Maine	103,903	34,449	138,352	686,380	0.00383
Maryland	450,922	371,023	821,945	2,890,085	0.01869
Massachusetts	579,328	518,633	1,097,961	3,409,543	0.02344
Michigan	932,137	643,081	1,575,218	5,191,522	0.03464
Minnesota	470,434	275,428	745,862	2,567,885	0.01678
Mississippi	310,974	80,929	391,903	1,414,974	0.00904
Missouri	535,978	306,630	842,608	2,876,162	0.01887
Montana	85,757	28,946	114,703	465,427	0.00282
Nebraska	174,425	96,367	270,792	854,401	0.00583
Nevada	179,708	156,775	336,483	1,087,821	0.00733
New Hampshire	103,369	49,436	152,805	674,885	0.00394
New Jersey	676,628	630,541	1,307,169	4,537,028	0.02953
New Mexico	177,576	92,066	269,642	920,671	0.00604
New York	1,765,453	1,456,258	3,221,711	10,072,545	0.06900
North Carolina	806,821	442,434	1,249,255	4,309,397	0.02813
North Dakota	73,118	37,755	110,873	313,755	0.00226
Ohio	1,056,544	677,528	1,734,072	5,900,500	0.03877
Oklahoma	357,085	169,427	526,512	1,745,259	0.01161
Oregon	327,884	211,275	539,159	1,808,812	0.01197
Pennsylvania	1,094,449	749,238	1,843,687	6,345,219	0.04146
Rhode Island	106,607	98,567	205,174	541,488	0.00405
South Carolina	407,851	202,502	610,353	2,109,187	0.01375
South Dakota	77,634	22,755	100,389	366,430	0.00233

(continued)

Table E2. Construction of Population-At-Risk Index in SAPT BG Allotment Calculations (Scenario 1) (continued)

Used In:	Formula A2	Formula A2	Formula A2	Formula A2	Formula A2
State	Population Aged 18-24 2000 ($P_{i, 18-24}$)*	Urban Population Aged 18-24 Census 2000 ($UP_{i, 18-24}$)*	Sum of ($P_{i, 18-24}$) and ($UP_{i, 18-24}$)	Population Aged 25-64 2000 ($P_{i, 25-64}$)*	Population-at-Risk Index (P_i)
Tennessee	548,856	316,047	864,903	3,038,595	0.01966
Texas	2,198,881	1,632,858	3,831,739	10,693,648	0.07769
Utah	317,431	264,001	581,432	1,006,818	0.00969
Vermont	56,586	17,115	73,701	327,208	0.00191
Virginia	679,398	494,159	1,173,557	3,868,522	0.02581
Washington	559,361	416,686	976,047	3,158,769	0.02127
West Virginia	172,431	59,450	231,881	956,625	0.00575
Wisconsin	520,629	313,041	833,670	2,771,737	0.01842
Wyoming	49,928	12,967	62,895	257,288	0.00155
Subtotal (50 States and District of Columbia)	27,143,454	19,233,488	46,376,942	146,992,887	1.00000

*Note 1: Because the source data cutoff date for the reference year calculations was October 1, 2002, and because the 2000 census data were the most recent data available on this date, the census figures (rather than population estimates) were used in the construction of the Population-at-Risk Index.

Table E3. Calculation of Wage Subindex in SAPT BG Calculations (Scenario 1)

Used In:	Formula A4	Formula A4	Formula A4	Formula A4	Formula A4	Formula A4
State	Wage Rate (Census 2000) $\frac{\sum_{j=1}^{5} S_{ij,CENSUS_BY}}{\sum_{j=1}^{5} H_{ij,CENSUS_BY}}$ ($)	Wage Rate (CMS - Baseline Year) $\frac{\sum_{k=1}^{N} S_{ik,CMS_BY}}{\sum_{k=1}^{N} H_{ik,CMS_BY}}$ ($)	Wage Rate (CMS - Most Recent Year) $\frac{\sum_{k=1}^{N} S_{ik,CMS_RY}}{\sum_{k=1}^{N} H_{ik,CMS_RY}}$ ($)	Update Factor	Updated Census Wage Rate ($)	Wage Subindex, W_i
	Col 1	Col 2	Col 3	Col 4 = Col 3 ÷ Col 2	Col 5 = Col 1 × Col 4	Col 6
Alabama	23.98	15.41	17.66	1.1459	27.48	0.9739
Alaska	23.06	21.86	24.86	1.1373	26.23	0.9295
Arizona	23.86	17.22	20.74	1.2043	28.73	1.0182
Arkansas	22.56	14.95	17.80	1.1911	26.87	0.9523
California	25.73	21.60	25.42	1.1770	30.29	1.0733
Colorado	23.31	18.28	21.83	1.1941	27.84	0.9865
Connecticut	27.90	21.43	24.53	1.1450	31.95	1.1321
Delaware	23.84	19.89	22.47	1.1301	26.95	0.9549
District of Columbia	25.00	21.21	24.26	1.1440	28.60	1.0133
Florida	25.98	17.32	20.27	1.1700	30.40	1.0772
Georgia	24.93	17.08	19.81	1.1597	28.91	1.0245
Hawaii	24.21	20.52	22.97	1.1195	27.10	0.9604
Idaho	21.43	16.27	19.61	1.2052	25.83	0.9152
Illinois	24.20	18.60	21.76	1.1699	28.32	1.0034
Indiana	23.34	17.06	19.97	1.1707	27.32	0.9681
Iowa	21.52	15.67	19.18	1.2238	26.34	0.9333
Kansas	20.67	16.26	19.54	1.2020	24.84	0.8804
Kentucky	22.24	15.63	18.40	1.1773	26.18	0.9278
Louisiana	24.75	15.72	18.24	1.1609	28.73	1.0182
Maine	20.64	17.22	20.66	1.1999	24.77	0.8778
Maryland	23.91	18.47	21.92	1.1870	28.39	1.0059
Massachusetts	23.82	20.73	23.77	1.1467	27.32	0.9680
Michigan	24.89	18.57	21.02	1.1320	28.18	0.9984
Minnesota	24.56	18.68	22.23	1.1898	29.22	1.0356
Mississippi	23.82	14.52	16.92	1.1653	27.75	0.9835
Missouri	22.12	16.33	18.99	1.1632	25.73	0.9117
Montana	19.45	15.76	18.94	1.2016	23.38	0.8283
Nebraska	21.41	16.58	19.58	1.1809	25.28	0.8958
Nevada	29.13	20.45	23.55	1.1514	33.54	1.1885
New Hampshire	22.00	18.56	22.36	1.2046	26.50	0.9392
New Jersey	28.66	20.59	23.96	1.1639	33.36	1.1822
New Mexico	20.99	17.10	20.27	1.1856	24.88	0.8816
New York	25.35	22.68	25.37	1.1183	28.35	1.0047
North Carolina	23.36	17.11	19.82	1.1586	27.07	0.9592

(continued)

Table E3. Calculation of Wage Subindex in SAPT BG Calculations (Scenario 1) (continued)

Used In:	Formula A4	Formula A4	Formula A4	Formula A4	Formula A4	Formula A4
State	Wage Rate (Census 2000) $\frac{\sum_{j=1}^{5} S_{ij,CENSUS_BY}}{\sum_{j=1}^{5} H_{ij,CENSUS_BY}}$ ($)	Wage Rate (CMS - Baseline Year) $\frac{\sum_{k=1}^{N} S_{ik,CMS_BY}}{\sum_{k=1}^{N} H_{ik,CMS_BY}}$ ($)	Wage Rate (CMS - Most Recent Year) $\frac{\sum_{k=1}^{N} S_{ik,CMS_RY}}{\sum_{k=1}^{N} H_{ik,CMS_RY}}$ ($)	Update Factor	Updated Census Wage Rate ($)	Wage Subindex, W_i
	Col 1	Col 2	Col 3	Col 4 = Col 3 ÷ Col 2	Col 5 = Col 1 × Col 4	Col 6
North Dakota	19.22	15.19	17.17	1.1304	21.73	0.7698
Ohio	23.40	17.27	19.86	1.1496	26.90	0.9532
Oklahoma	21.16	15.05	17.84	1.1853	25.08	0.8886
Oregon	22.64	19.13	22.42	1.1724	26.54	0.9405
Pennsylvania	22.65	17.75	20.49	1.1544	26.15	0.9267
Rhode Island	24.71	19.65	22.56	1.1481	28.36	1.0051
South Carolina	23.40	16.63	19.31	1.1612	27.18	0.9630
South Dakota	20.39	15.48	19.69	1.2717	25.94	0.9190
Tennessee	23.24	16.06	18.91	1.1774	27.36	0.9695
Texas	24.46	16.72	20.02	1.1975	29.29	1.0379
Utah	21.90	17.20	19.51	1.1347	24.85	0.8807
Vermont	17.94	17.53	20.04	1.1431	20.51	0.7268
Virginia	24.22	17.05	20.05	1.1762	28.49	1.0094
Washington	23.75	20.26	23.52	1.1608	27.57	0.9771
West Virginia	20.34	15.06	17.36	1.1529	23.45	0.8309
Wisconsin	24.23	17.08	20.45	1.1974	29.01	1.0280
Wyoming	18.84	16.21	19.16	1.1818	22.27	0.7890
Total (National)	24.20	18.31	21.35	1.1659	28.22	1.0000

Note 1: The State-level wage rate was calculated based on the 16 percent sample of the 2000 Decennial Census.

Note 2: For update factor calculations, the State-level "baseline year" wage rate was calculated based on the provider (hospital)-level data reported to CMS for FY 1999 that were originally compiled to establish Medicare reimbursement rates for FY 2003.

Note 3: For update factor calculations , the State-level "most recent year" wage rate was calculated based on the provider (hospital)-level data for FY 2002 that were originally compiled to establish Medicare reimbursement rates for FY 2006.

Table E4. Calculation of Rental Subindex in SAPT BG Calculations (Scenario 1)

Used In:	Formula A5	Formula A5	Formula A5	Formula A5	Formula A5	Formula A5
State	**Number of Counties**	**Number of Sub-Counties**	$\sum_{j=1}^{N} POP_{ij}$	$\sum_{j=1}^{N} (POP_{ij} \times FMR_{ij})$	$\sum_{j=1}^{N} (POP_{ij} \times FMR_{ij}) / \sum_{j=1}^{N} POP_{ij}$	**Rental Subindex, R_i**
	Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col.6**
Alabama	67	0	4,530,182	3,485,284,401	769	0.64525
Alaska	27	0	655,435	970,836,364	1,481	1.24228
Arizona	15	0	5,743,834	7,287,921,204	1,269	1.06416
Arkansas	75	0	2,752,629	2,059,895,569	748	0.62763
California	58	0	35,893,799	65,715,543,856	1,831	1.53551
Colorado	64	0	4,601,403	6,284,570,688	1,366	1.14548
Connecticut	0	169	3,503,604	5,146,047,373	1,469	1.23186
Delaware	3	0	830,364	1,045,782,212	1,259	1.05627
District of Columbia	1	0	553,523	1,144,685,564	2,068	1.73442
Florida	67	0	17,397,161	21,009,525,213	1,208	1.01284
Georgia	159	0	8,829,383	8,554,974,937	969	0.81263
Hawaii	5	0	1,262,840	2,402,085,997	1,902	1.59531
Idaho	44	0	1,393,262	1,325,966,817	952	0.79819
Illinois	102	0	12,713,634	14,098,433,836	1,109	0.93005
Indiana	92	0	6,237,569	5,255,040,970	842	0.70659
Iowa	99	0	2,954,451	2,414,968,860	817	0.68555
Kansas	105	0	2,735,502	2,395,196,325	876	0.73436
Kentucky	120	0	4,145,922	3,156,485,601	761	0.63854
Louisiana	64	0	4,515,770	3,689,908,722	817	0.68531
Maine	0	531	1,317,253	1,280,100,416	972	0.81504
Maryland	25	0	5,558,058	9,328,320,743	1,678	1.40762
Massachusetts	0	351	6,416,505	9,638,006,044	1,502	1.25977
Michigan	83	0	10,112,620	9,475,347,636	937	0.78584
Minnesota	87	0	5,100,958	5,693,041,042	1,116	0.93604
Mississippi	82	0	2,902,966	2,155,714,192	743	0.62281
Missouri	116	0	5,754,618	5,049,991,427	878	0.73600
Montana	56	0	926,865	828,814,877	894	0.74997
Nebraska	93	0	1,747,214	1,490,255,957	853	0.71535
Nevada	17	0	2,334,771	3,336,000,836	1,429	1.19836
New Hampshire	0	259	1,299,500	1,715,544,127	1,320	1.10721
New Jersey	21	0	8,698,879	13,453,283,431	1,547	1.29709
New Mexico	33	0	1,903,289	1,922,621,780	1,010	0.84721
New York	62	0	19,227,088	26,585,592,287	1,383	1.15968
North Carolina	100	0	8,541,221	7,812,674,692	915	0.76716
North Dakota	53	0	634,366	524,038,765	826	0.69283
Ohio	88	0	11,459,011	10,045,207,480	877	0.73522
Oklahoma	77	0	3,523,553	2,852,694,537	810	0.67901
Oregon	36	0	3,594,586	4,084,192,248	1,136	0.95293
Pennsylvania	67	0	12,406,292	12,846,416,663	1,035	0.86845
Rhode Island	0	39	1,080,632	1,591,875,906	1,473	1.23548
South Carolina	46	0	4,198,068	3,448,944,558	822	0.68903

(continued)

Table E4. Calculation of Rental Subindex in SAPT BG Calculations (Scenario 1) (continued)

Used In:	Formula A5	Formula A5	Formula A5	Formula A5	Formula A5	Formula A5
State	**Number of Counties**	**Number of Sub-Counties**	$\sum_{j=1}^{N} POP_{ij}$	$\sum_{j=1}^{N} (POP_{ij} \times FMR_{ij})$	$\sum_{j=1}^{N} (POP_{ij} \times FMR_{ij}) / \sum_{j=1}^{N} POP_{ij}$	**Rental Subindex, R_i**
	Col. 1	**Col. 2**	**Col. 3**	**Col. 4**	**Col. 5**	**Col.6**
South Dakota	66	0	770,883	622,612,779	808	0.67738
Tennessee	95	0	5,900,962	4,753,287,546	806	0.67558
Texas	254	0	22,490,022	24,013,801,513	1,068	0.89552
Utah	29	0	2,389,039	2,679,457,802	1,122	0.94065
Vermont	0	255	621,394	671,928,109	1,081	0.90690
Virginia	135	0	7,459,827	10,369,511,696	1,390	1.16583
Washington	39	0	6,203,788	7,696,803,782	1,241	1.04054
West Virginia	55	0	1,815,354	1,317,172,129	726	0.60853
Wisconsin	72	0	5,509,026	4,967,243,228	902	0.75621
Wyoming	23	0	506,529	440,182,711	869	0.72884
Total (National)	3,077	1,604	293,655,404	350,133,835,448	1,192	1.00000

Table E5. Cost-of-Services Index in SAPT BG Allotment Calculations (Scenario 1)

Used In:	Formula A3	Formula A3
State	Unconstrained Cost-of-Services Index (C'_i)	Constrained Cost-of-Services Index (C_i)
Alabama	0.91268	0.91268
Alaska	1.00630	1.00630
Arizona	0.97760	0.97760
Arkansas	0.92989	0.92989
California	1.16966	1.10000
Colorado	0.94628	0.94628
Connecticut	1.13451	1.10000
Delaware	1.00666	1.00666
District of Columbia	1.18537	1.10000
Florida	1.04134	1.04134
Georgia	1.02927	1.02927
Hawaii	0.96756	0.96756
Idaho	0.94186	0.94186
Illinois	0.99712	0.99712
Indiana	0.93530	0.93530
Iowa	0.81435	0.90000
Kansas	0.83384	0.90000
Kentucky	0.91946	0.91946
Louisiana	0.95383	0.95383
Maine	0.86063	0.90000
Maryland	1.08023	1.08023
Massachusetts	1.01920	1.01920
Michigan	0.92223	0.92223
Minnesota	0.91579	0.91579
Mississippi	0.91691	0.91691
Missouri	0.88372	0.90000
Montana	0.79731	0.90000
Nebraska	0.79829	0.90000
Nevada	1.08594	1.08594
New Hampshire	0.93745	0.93745
New Jersey	1.17574	1.10000
New Mexico	0.82713	0.90000
New York	1.08851	1.08851
North Carolina	0.88210	0.90000
North Dakota	0.79201	0.90000
Ohio	0.92549	0.92549
Oklahoma	0.89091	0.90000
Oregon	0.90796	0.90796
Pennsylvania	0.92659	0.92659
Rhode Island	0.95017	0.95017
South Carolina	0.88680	0.90000
South Dakota	0.77870	0.90000
Tennessee	0.93258	0.93258
Texas	1.03472	1.03472
Utah	0.96045	0.96045

(continued)

Table E5. Cost-of-Services Index in SAPT BG Allotment Calculations (Scenario 1) (continued)

Used In:	Formula A3	Formula A3
State	**Unconstrained Cost-of-Services Index (C'_i)**	**Constrained Cost-of-Services Index (C_i)**
Vermont	0.81182	0.90000
Virginia	1.04906	1.04906
Washington	0.99734	0.99734
West Virginia	0.84904	0.90000
Wisconsin	0.90472	0.90472
Wyoming	0.88135	0.90000
Subtotal (50 States and District of Columbia)	1.00000	1.00000

Table E6. Total Taxable Resources (TTR) in SAPT Allotment Calculations (Scenario 1)

Used In:	Formula A6	Formula A6	Formula A6	Formula A6
State	$TTR_{i,\ 1998}$ ($)	$TTR_{i,\ 1999}$ ($)	$TTR_{i,\ 2000}$ ($)	Average ($\overline{TTR_i}$)
Alabama	123,662,000,000	129,534,000,000	135,895,000,000	129,697,000,000
Alaska	26,277,000,000	26,923,000,000	29,453,000,000	27,551,000,000
Arizona	151,796,000,000	163,553,000,000	177,231,000,000	164,193,333,333
Arkansas	70,093,000,000	73,506,000,000	77,221,000,000	73,606,666,667
California	1,245,027,000,000	1,364,729,000,000	1,519,416,000,000	1,376,390,666,667
Colorado	156,826,000,000	170,393,000,000	189,046,000,000	172,088,333,333
Connecticut	170,460,000,000	178,652,000,000	193,486,000,000	180,866,000,000
Delaware	36,792,000,000	38,992,000,000	41,156,000,000	38,980,000,000
District of Columbia	27,644,000,000	28,328,000,000	31,005,000,000	28,992,333,333
Florida	518,045,000,000	544,117,000,000	582,071,000,000	548,077,666,667
Georgia	278,379,000,000	300,194,000,000	323,595,000,000	300,722,666,667
Hawaii	42,859,000,000	44,440,000,000	46,812,000,000	44,703,666,667
Idaho	36,038,000,000	39,244,000,000	42,982,000,000	39,421,333,333
Illinois	481,370,000,000	500,107,000,000	533,464,000,000	504,980,333,333
Indiana	200,829,000,000	208,068,000,000	220,184,000,000	209,693,666,667
Iowa	95,685,000,000	97,501,000,000	102,910,000,000	98,698,666,667
Kansas	90,955,000,000	94,828,000,000	100,728,000,000	95,503,666,667
Kentucky	121,294,000,000	125,689,000,000	133,709,000,000	126,897,333,333
Louisiana	135,508,000,000	140,512,000,000	152,065,000,000	142,695,000,000
Maine	37,428,000,000	39,446,000,000	42,174,000,000	39,682,666,667
Maryland	207,879,000,000	220,254,000,000	238,127,000,000	222,086,666,667
Massachusetts	275,317,000,000	298,014,000,000	333,519,000,000	302,283,333,333
Michigan	327,915,000,000	345,144,000,000	363,879,000,000	345,646,000,000
Minnesota	184,286,000,000	193,264,000,000	209,555,000,000	195,701,666,667
Mississippi	70,692,000,000	73,974,000,000	77,535,000,000	74,067,000,000
Missouri	186,963,000,000	193,234,000,000	205,132,000,000	195,109,666,667
Montana	23,811,000,000	24,307,000,000	26,003,000,000	24,707,000,000
Nebraska	58,463,000,000	60,504,000,000	63,970,000,000	60,979,000,000
Nevada	74,982,000,000	80,143,000,000	87,389,000,000	80,838,000,000
New Hampshire	50,541,000,000	54,583,000,000	61,114,000,000	55,412,666,667
New Jersey	381,694,000,000	401,793,000,000	442,675,000,000	408,720,666,667
New Mexico	54,228,000,000	55,588,000,000	59,665,000,000	56,493,666,667
New York	813,260,000,000	850,756,000,000	908,582,000,000	857,532,666,667
North Carolina	266,932,000,000	286,211,000,000	309,944,000,000	287,695,666,667
North Dakota	19,559,000,000	19,566,000,000	21,115,000,000	20,080,000,000
Ohio	390,872,000,000	400,249,000,000	420,884,000,000	404,001,666,667
Oklahoma	93,634,000,000	97,313,000,000	104,550,000,000	98,499,000,000
Oregon	118,950,000,000	125,883,000,000	136,813,000,000	127,215,333,333
Pennsylvania	423,386,000,000	439,983,000,000	468,320,000,000	443,896,333,333
Rhode Island	37,314,000,000	38,788,000,000	44,210,000,000	40,104,000,000
South Carolina	115,195,000,000	121,234,000,000	129,052,000,000	121,827,000,000
South Dakota	23,872,000,000	25,324,000,000	26,989,000,000	25,395,000,000
Tennessee	177,607,000,000	185,674,000,000	195,480,000,000	186,253,666,667
Texas	697,199,000,000	739,424,000,000	804,936,000,000	747,186,333,333

(continued)

Table E6. Total Taxable Resources (TTR) in SAPT Allotment Calculations (Scenario 1) (continued)

Used In:	Formula A6	Formula A6	Formula A6	Formula A6
State	$TTR_{i,\ 1998}$ ($)	$TTR_{i,\ 1999}$ ($)	$TTR_{i,\ 2000}$ ($)	Average ($\overline{TTR_i}$)
Utah	64,678,000,000	68,382,000,000	74,797,000,000	69,285,666,667
Vermont	19,199,000,000	20,169,000,000	21,750,000,000	20,372,666,667
Virginia	267,594,000,000	282,142,000,000	307,001,000,000	285,579,000,000
Washington	219,525,000,000	239,207,000,000	252,401,000,000	237,044,333,333
West Virginia	46,937,000,000	48,459,000,000	50,897,000,000	48,764,333,333
Wisconsin	180,898,000,000	188,112,000,000	199,861,000,000	189,623,666,667
Wyoming	19,770,000,000	20,902,000,000	23,356,000,000	21,342,666,667
Subtotal (50 States and District of Columbia)	9,940,119,000,000	10,507,336,000,000	11,344,104,000,000	10,597,186,333,333

Table E7. Total Personal Income (TPI) in SAPT Allotment Calculations (Scenario 1)

Used In:	Formula A7	Formula A7	Formula A7	Formula A7
State	$TPI_{i,\ 1999}$ ($)	$TPI_{i,\ 2000}$ ($)	$TPI_{i,\ 2001}$ ($)	Average ($\overline{TPI_i}$)
Alabama	100,532,000,000	105,796,000,000	109,773,000,000	105,367,000,000
Alaska	17,570,000,000	18,773,000,000	19,641,000,000	18,661,333,333
Arizona	120,257,000,000	130,982,000,000	137,314,000,000	129,517,666,667
Arkansas	56,004,000,000	59,205,000,000	61,613,000,000	58,940,666,667
California	994,862,000,000	1,099,375,000,000	1,128,256,000,000	1,074,164,333,333
Colorado	128,192,000,000	142,752,000,000	147,860,000,000	139,601,333,333
Connecticut	130,762,000,000	141,151,000,000	145,341,000,000	139,084,666,667
Delaware	22,749,000,000	24,767,000,000	25,853,000,000	24,456,333,333
District of Columbia	20,501,000,000	22,158,000,000	22,959,000,000	21,872,666,667
Florida	424,726,000,000	454,106,000,000	474,626,000,000	451,152,666,667
Georgia	213,792,000,000	232,179,000,000	240,896,000,000	228,955,666,667
Hawaii	32,573,000,000	34,308,000,000	35,510,000,000	34,130,333,333
Idaho	28,931,000,000	31,314,000,000	32,525,000,000	30,923,333,333
Illinois	373,578,000,000	401,030,000,000	412,200,000,000	395,602,666,667
Indiana	154,919,000,000	165,815,000,000	169,885,000,000	163,539,666,667
Iowa	72,912,000,000	77,790,000,000	79,893,000,000	76,865,000,000
Kansas	69,960,000,000	74,124,000,000	76,973,000,000	73,685,666,667
Kentucky	91,093,000,000	98,125,000,000	101,326,000,000	96,848,000,000
Louisiana	99,047,000,000	103,824,000,000	109,560,000,000	104,143,666,667
Maine	30,640,000,000	32,793,000,000	34,384,000,000	32,605,666,667
Maryland	167,246,000,000	180,353,000,000	189,142,000,000	178,913,666,667
Massachusetts	216,822,000,000	241,318,000,000	248,202,000,000	235,447,333,333
Michigan	276,541,000,000	293,744,000,000	297,609,000,000	289,298,000,000
Minnesota	146,891,000,000	158,817,000,000	164,589,000,000	156,765,666,667
Mississippi	56,920,000,000	59,881,000,000	62,163,000,000	59,654,666,667
Missouri	143,858,000,000	153,830,000,000	158,906,000,000	152,198,000,000
Montana	19,380,000,000	20,678,000,000	21,673,000,000	20,577,000,000
Nebraska	45,274,000,000	47,534,000,000	49,489,000,000	47,432,333,333
Nevada	55,330,000,000	59,948,000,000	62,966,000,000	59,414,666,667
New Hampshire	37,253,000,000	41,630,000,000	42,986,000,000	40,623,000,000
New Jersey	288,812,000,000	317,346,000,000	326,723,000,000	310,960,333,333
New Mexico	37,772,000,000	39,772,000,000	42,354,000,000	39,966,000,000
New York	615,903,000,000	664,927,000,000	684,774,000,000	655,201,333,333
North Carolina	202,744,000,000	218,537,000,000	225,234,000,000	215,505,000,000
North Dakota	14,846,000,000	16,027,000,000	16,434,000,000	15,769,000,000
Ohio	304,515,000,000	320,377,000,000	327,745,000,000	317,545,666,667
Oklahoma	77,474,000,000	83,035,000,000	86,750,000,000	82,419,666,667
Oregon	89,084,000,000	95,406,000,000	97,814,000,000	94,101,333,333
Pennsylvania	342,452,000,000	364,953,000,000	377,461,000,000	361,622,000,000
Rhode Island	28,749,000,000	30,728,000,000	31,995,000,000	30,490,666,667
South Carolina	91,249,000,000	97,659,000,000	101,110,000,000	96,672,666,667
South Dakota	18,368,000,000	19,509,000,000	20,174,000,000	19,350,333,333
Tennessee	141,117,000,000	150,344,000,000	154,911,000,000	148,790,666,667
Texas	539,390,000,000	587,228,000,000	609,489,000,000	578,702,333,333
Utah	48,923,000,000	52,622,000,000	54,884,000,000	52,143,000,000

(continued)

Table E7. Total Personal Income (TPI) in SAPT Allotment Calculations (Scenario 1) (continued)

Used In:	Formula A7	Formula A7	Formula A7	Formula A7
State	**$TPI_{i,\ 1999}$ ($)**	**$TPI_{i,\ 2000}$ ($)**	**$TPI_{i,\ 2001}$ ($)**	**Average ($\overline{TPI_i}$)**
Vermont	15,544,000,000	16,691,000,000	17,531,000,000	16,588,666,667
Virginia	204,937,000,000	222,498,000,000	233,107,000,000	220,180,666,667
Washington	174,321,000,000	186,863,000,000	191,763,000,000	184,315,666,667
West Virginia	37,488,000,000	39,506,000,000	41,230,000,000	39,408,000,000
Wisconsin	143,855,000,000	152,953,000,000	158,116,000,000	151,641,333,333
Wyoming	12,855,000,000	13,717,000,000	14,544,000,000	13,705,333,333
Subtotal (50 States and District of Columbia)	7,779,513,000,000	8,398,798,000,000	8,678,256,000,000	8,285,522,333,333

Table E8. Components of Fiscal Capacity Index in SAPT BG Allotment Calculations (Scenario 1)

Used In:	Formula A6	Formula A6	Formula A7	Formula A7
State	$\frac{\overline{TTR_i}}{C_i}$	$\frac{\overline{TTR_i}}{C_i} \Big/ \sum_{i=1}^{51} \frac{\overline{TTR_i}}{C_i}$	$\frac{\overline{TPI_i}}{C_i}$	$\frac{\overline{TPI_i}}{C_i} \Big/ \sum_{i=1}^{51} \frac{\overline{TPI_i}}{C_i}$
Alabama	142,106,053,739	0.01337	115,448,225,975	0.01388
Alaska	27,378,632,882	0.00258	18,544,582,571	0.00223
Arizona	167,956,153,998	0.01580	132,485,824,646	0.01593
Arkansas	79,156,567,658	0.00745	63,384,759,562	0.00762
California	1,251,264,242,424	0.11771	976,513,030,303	0.11743
Colorado	181,857,465,249	0.01711	147,526,239,191	0.01774
Connecticut	164,423,636,364	0.01547	126,440,606,061	0.01521
Delaware	38,722,198,383	0.00364	24,294,586,738	0.00292
District of Columbia	26,356,666,667	0.00248	19,884,242,424	0.00239
Florida	526,318,625,579	0.04951	433,241,611,341	0.05210
Georgia	292,169,943,228	0.02749	222,444,037,469	0.02675
Hawaii	46,202,660,755	0.00435	35,274,784,599	0.00424
Idaho	41,854,850,591	0.00394	32,832,260,784	0.00395
Illinois	506,438,587,857	0.04764	396,745,066,361	0.04771
Indiana	224,199,468,991	0.02109	174,852,712,571	0.02103
Iowa	109,665,185,185	0.01032	85,405,555,556	0.01027
Kansas	106,115,185,185	0.00998	81,872,962,963	0.00985
Kentucky	138,012,469,581	0.01298	105,331,068,060	0.01267
Louisiana	149,602,891,215	0.01407	109,185,280,739	0.01313
Maine	44,091,851,852	0.00415	36,228,518,519	0.00436
Maryland	205,592,828,981	0.01934	165,626,182,902	0.01992
Massachusetts	296,589,535,288	0.02790	231,012,455,792	0.02778
Michigan	374,794,179,707	0.03526	313,694,376,909	0.03772
Minnesota	213,696,951,841	0.02010	171,180,683,796	0.02059
Mississippi	80,778,509,659	0.00760	65,060,216,662	0.00782
Missouri	216,788,518,519	0.02039	169,108,888,889	0.02034
Montana	27,452,222,222	0.00258	22,863,333,333	0.00275
Nebraska	67,754,444,444	0.00637	52,702,592,593	0.00634
Nevada	74,440,727,687	0.00700	54,712,771,493	0.00658
New Hampshire	59,110,311,567	0.00556	43,333,741,746	0.00521
New Jersey	371,564,242,424	0.03495	282,691,212,121	0.03399
New Mexico	62,770,740,741	0.00591	44,406,666,667	0.00534
New York	787,800,981,309	0.07411	601,922,554,579	0.07238
North Carolina	319,661,851,852	0.03007	239,450,000,000	0.02879
North Dakota	22,311,111,111	0.00210	17,521,111,111	0.00211
Ohio	436,525,670,282	0.04107	343,109,562,222	0.04126
Oklahoma	109,443,333,333	0.01030	91,577,407,407	0.01101
Oregon	140,110,993,506	0.01318	103,640,268,497	0.01246
Pennsylvania	479,063,645,724	0.04507	390,271,197,766	0.04693
Rhode Island	42,207,210,951	0.00397	32,089,716,738	0.00386
South Carolina	135,363,333,333	0.01273	107,414,074,074	0.01292

(continued)

Table E8. Components of Fiscal Capacity Index in SAPT BG Allotment Calculations (Scenario 1) (continued)

Used In:	Formula A6	Formula A6	Formula A7	Formula A7
State	$\frac{\overline{TTR_i}}{C_i}$	$\frac{\frac{\overline{TTR_i}}{C_i}}{\sum_{i=1}^{51}\frac{\overline{TTR_i}}{C_i}}$	$\frac{\overline{TPI_i}}{C_i}$	$\frac{\frac{\overline{TPI_i}}{C_i}}{\sum_{i=1}^{51}\frac{\overline{TPI_i}}{C_i}}$
South Dakota	28,216,666,667	0.00265	21,500,370,370	0.00259
Tennessee	199,718,218,464	0.01879	159,546,963,034	0.01919
Texas	722,116,097,877	0.06793	559,285,217,269	0.06726
Utah	72,138,696,377	0.00679	54,290,132,810	0.00653
Vermont	22,636,296,296	0.00213	18,431,851,852	0.00222
Virginia	272,223,426,171	0.02561	209,883,553,961	0.02524
Washington	237,676,182,281	0.02236	184,806,965,735	0.02222
West Virginia	54,182,592,593	0.00510	43,786,666,667	0.00527
Wisconsin	209,593,175,251	0.01972	167,610,874,272	0.02016
Wyoming	23,714,074,074	0.00223	15,228,148,148	0.00183
Subtotal (50 States and District of Columbia)	10,629,930,107,918	1.00000	8,315,695,715,848	1.00000

Table E9. Fiscal Capacity Index and Its Components in SAPT BG Allotment Calculations (Scenario 1)

Used In:	Formulas A6 and A7	Formulas A6 and A7
State	Unconstrained Fiscal Capacity Index (F_i)	Constrained Fiscal Capacity Index (F_i) *
Alabama	0.68690	0.68690
Alaska	0.57118	0.57118
Arizona	0.70599	0.70599
Arkansas	0.69297	0.69297
California	0.67990	0.67990
Colorado	0.63293	0.63293
Connecticut	0.53176	0.53176
Delaware	0.54851	0.54851
District of Columbia	0.68324	0.68324
Florida	0.68186	0.68186
Georgia	0.67669	0.67669
Hawaii	0.64812	0.64812
Idaho	0.68582	0.68582
Illinois	0.63287	0.63287
Indiana	0.65682	0.65682
Iowa	0.63060	0.63060
Kansas	0.60704	0.60704
Kentucky	0.66170	0.66170
Louisiana	0.68839	0.68839
Maine	0.62059	0.62059
Maryland	0.63785	0.63785
Massachusetts	0.58330	0.58330
Michigan	0.64377	0.64377
Minnesota	0.58058	0.58058
Mississippi	0.70573	0.70573
Missouri	0.62168	0.62168
Montana	0.67945	0.67945
Nebraska	0.61707	0.61707
Nevada	0.66552	0.66552
New Hampshire	0.50641	0.50641
New Jersey	0.58565	0.58565
New Mexico	0.65775	0.65775
New York	0.62405	0.62405
North Carolina	0.62580	0.62580

(continued)

Table E9. Fiscal Capacity Index and Its Components in SAPT BG Allotment Calculations (Scenario 1) (continued)

Used In:	Formulas A6 and A7	Formulas A6 and A7
State	Unconstrained Fiscal Capacity Index (F_i)	Constrained Fiscal Capacity Index (F_i) *
North Dakota	0.67532	0.67532
Ohio	0.62924	0.62924
Oklahoma	0.68970	0.68970
Oregon	0.61445	0.61445
Pennsylvania	0.61955	0.61955
Rhode Island	0.65719	0.65719
South Carolina	0.67597	0.67597
South Dakota	0.60105	0.60105
Tennessee	0.66553	0.66553
Texas	0.69394	0.69394
Utah	0.75496	0.75496
Vermont	0.60929	0.60929
Virginia	0.65274	0.65274
Washington	0.63204	0.63204
West Virginia	0.68995	0.68995
Wisconsin	0.62527	0.62527
Wyoming	0.49731	0.49731
Subtotal (50 States and District of Columbia)	0.65000	0.65000

Note 1: For the District of Columbia, the Fiscal Capacity Index calculation uses TPI instead of TTR.
*Note 2: The quantity in this column is calculated as the maximum of 0.4 and the quantity in the previous column.

Table E10. Formula Share, SAPT BG Baseline Allotments and Prior Fiscal Year Allotments (Scenario 1)

Used In:	Formula A1	Formula A1	Formula A1	Formula A8
State	$P_i \times C_i \times F_i$	Formula Share $\frac{P_i \times C_i \times F_i}{\sum_{i=1}^{51} P_i \times C_i \times F_i}$	$A_{i,\ RFY,\ Baseline}$ ($)	$A_{i,\ RFY-1}$ ($)
Alabama	0.00937	0.01443	24,031,005	23,950,492
Alaska	0.00121	0.00186	3,099,327	4,492,456
Arizona	0.01298	0.02000	33,299,214	30,548,743
Arkansas	0.00547	0.00843	14,030,927	12,638,833
California	0.09626	0.14831	246,911,275	251,851,368
Colorado	0.00977	0.01505	25,061,293	23,366,008
Connecticut	0.00676	0.01042	17,347,914	16,879,723
Delaware	0.00156	0.00240	3,999,549	6,577,245
District of Columbia	0.00199	0.00306	5,093,509	6,466,664
Florida	0.03868	0.05959	99,210,467	95,064,189
Georgia	0.02072	0.03193	53,159,927	47,462,679
Hawaii	0.00271	0.00418	6,953,990	7,201,410
Idaho	0.00283	0.00437	7,267,838	6,787,163
Illinois	0.02866	0.04416	73,519,311	67,994,327
Indiana	0.01321	0.02036	33,896,707	33,448,541
Iowa	0.00555	0.00855	14,230,216	12,915,707
Kansas	0.00486	0.00748	12,460,507	12,343,401
Kentucky	0.00817	0.01259	20,962,787	20,752,134
Louisiana	0.01038	0.01599	26,623,577	25,959,665
Maine	0.00214	0.00329	5,481,881	6,577,245
Maryland	0.01288	0.01984	33,036,833	32,114,739
Massachusetts	0.01393	0.02147	35,736,540	34,174,108
Michigan	0.02057	0.03169	52,756,016	58,143,061
Minnesota	0.00892	0.01374	22,329,329	21,783,707
Red Lake Indians	NA	NA	550,336	536,888
Mississippi	0.00585	0.00901	15,002,097	14,139,924
Missouri	0.01056	0.01627	27,078,890	26,268,668
Montana	0.00172	0.00266	4,423,015	6,577,245
Nebraska	0.00324	0.00498	8,298,984	7,926,182
Nevada	0.00530	0.00816	13,584,735	12,860,149
New Hampshire	0.00187	0.00288	4,801,551	6,577,245
New Jersey	0.01902	0.02931	48,789,749	47,139,236
New Mexico	0.00357	0.00551	9,169,577	8,614,912
New York	0.04687	0.07221	120,220,314	116,000,196
North Carolina	0.01584	0.02441	40,635,135	38,135,024
North Dakota	0.00138	0.00212	3,527,445	4,984,093
Ohio	0.02258	0.03478	57,908,345	66,942,269
Oklahoma	0.00721	0.01111	18,490,411	17,788,840
Oregon	0.00668	0.01029	17,123,281	16,098,174
Pennsylvania	0.02380	0.03667	61,052,379	59,336,807
Rhode Island	0.00253	0.00390	6,493,346	6,577,245

(continued)

Table E10. Formula Share, SAPT BG Baseline Allotments and Prior Fiscal Year Allotments (Scenario 1) (continued)

Used In:	Formula A1	Formula A1	Formula A1	Formula A8
State	$\mathbf{P_i \times C_i \times F_i}$	**Formula Share** $\frac{P_i \times C_i \times F_i}{\sum_{i=1}^{51} P_i \times C_i \times F_i}$	$\mathbf{A_{i,\ RFY,\ Baseline}}$ **($)**	$\mathbf{A_{i,\ RFY\text{-}1}}$ **($)**
South Carolina	0.00837	0.01289	21,464,725	20,661,633
South Dakota	0.00126	0.00194	3,231,254	4,608,895
Tennessee	0.01220	0.01880	31,300,433	29,391,224
Texas	0.05578	0.08594	143,082,155	133,331,132
Utah	0.00703	0.01083	18,028,931	16,914,130
Vermont	0.00105	0.00161	2,683,188	4,927,888
Virginia	0.01767	0.02723	45,336,816	42,526,592
Washington	0.01341	0.02066	34,387,881	35,125,673
West Virginia	0.00357	0.00550	9,164,871	8,678,554
Wisconsin	0.01042	0.01605	26,722,836	25,877,350
Wyoming	0.00070	0.00107	1,783,253	3,202,093
Subtotal (50 States and District of Columbia)	0.64904	1.00000	1,664,835,870	1,641,241,869

Table E11. SAPT BG Statutory Minimum Allotment Calculations (Scenario 1)

Used In:	Formula A8	Formula A8	Formula A9
State	$A_{i,RFY-1} \times (1+0.3065r)$ ($)	$min\left(\begin{matrix}(0.00375 \times AP_{RFY}),\\ (A_{i,RFY-1} \times (1+3r))\end{matrix}\right)$ ($)	Statutory Minimum Allotment* ($)
Alabama	24,056,022	6,671,798	24,056,022
Alaska	4,512,250	4,686,203	4,686,203
Arizona	30,683,345	6,671,798	30,683,345
Arkansas	12,694,522	6,671,798	12,694,522
California	252,961,063	6,671,798	252,961,063
Colorado	23,468,962	6,671,798	23,468,962
Connecticut	16,954,098	6,671,798	16,954,098
Delaware	6,606,225	6,671,798	6,671,798
District of Columbia	6,495,157	6,671,798	6,671,798
Florida	95,483,056	6,671,798	95,483,056
Georgia	47,671,807	6,671,798	47,671,807
Hawaii	7,233,141	6,671,798	7,233,141
Idaho	6,817,068	6,671,798	6,817,068
Illinois	68,293,920	6,671,798	68,293,920
Indiana	33,595,920	6,671,798	33,595,920
Iowa	12,972,616	6,671,798	12,972,616
Kansas	12,397,788	6,671,798	12,397,788
Kentucky	20,843,571	6,671,798	20,843,571
Louisiana	26,074,047	6,671,798	26,074,047
Maine	6,606,225	6,671,798	6,671,798
Maryland	32,256,241	6,671,798	32,256,241
Massachusetts	34,324,684	6,671,798	34,324,684
Michigan	58,399,248	6,671,798	58,399,248
Minnesota	22,418,943	6,671,798	22,418,943
Mississippi	14,202,227	6,671,798	14,202,227
Missouri	26,384,412	6,671,798	26,384,412
Montana	6,606,225	6,671,798	6,671,798
Nebraska	7,961,106	6,671,798	7,961,106
Nevada	12,916,813	6,671,798	12,916,813
New Hampshire	6,606,225	6,671,798	6,671,798
New Jersey	47,346,939	6,671,798	47,346,939
New Mexico	8,652,871	6,671,798	8,652,871
New York	116,511,310	6,671,798	116,511,310
North Carolina	38,303,053	6,671,798	38,303,053
North Dakota	5,006,054	5,199,042	5,199,042
Ohio	67,237,227	6,671,798	67,237,227
Oklahoma	17,867,220	6,671,798	17,867,220
Oregon	16,169,105	6,671,798	16,169,105
Pennsylvania	59,598,254	6,671,798	59,598,254
Rhode Island	6,606,225	6,671,798	6,671,798
South Carolina	20,752,671	6,671,798	20,752,671
South Dakota	4,629,202	4,807,663	4,807,663
Tennessee	29,520,726	6,671,798	29,520,726
Texas	133,918,609	6,671,798	133,918,609
Utah	16,988,656	6,671,798	16,988,656

(continued)

Table E11. SAPT BG Statutory Minimum Allotment Calculations (Scenario 1) (continued)

Used In:	Formula A8	Formula A8	Formula A9
State	$A_{i,RFY-1} \times (1 + 0.3065r)$ **($)**	$min\begin{pmatrix}(0.00375 \times AP_{RFY}),\\(A_{i,RFY-1} \times (1+3r))\end{pmatrix}$ **($)**	**Statutory Minimum Allotment* ($)**
Vermont	4,949,601	5,140,414	5,140,414
Virginia	42,713,971	6,671,798	42,713,971
Washington	35,280,442	6,671,798	35,280,442
West Virginia	8,716,793	6,671,798	8,716,793
Wisconsin	25,991,370	6,671,798	25,991,370
Wyoming	3,216,202	3,340,190	3,340,190

*The quantity in this column is calculated as the maximum of the quantities in the previous two columns.

Table E12. Cycle 1-BESMA, ASMA, and Scaled ASMA in SAPT BG Calculations (Scenario 1)

Used In:	Formula A8	Formula A8	Formula A9
State	$A_{i\,(j=1),\,BESMA}$ ($)	$A_{i\,(j=1),\,ASMA}$ ($)	$A_{i\,(j=1),\,Scaled\ ASMA}$ ($)
Alabama	24,056,022	0	0
Alaska	4,686,203	0	0
Arizona	0	33,299,214	32,164,303
Arkansas	0	14,030,927	13,552,722
California	252,961,063	0	0
Colorado	0	25,061,293	24,207,149
Connecticut	0	17,347,914	16,756,659
Delaware	6,671,798	0	0
District of Columbia	6,671,798	0	0
Florida	0	99,210,467	95,829,155
Georgia	0	53,159,927	51,348,119
Hawaii	7,233,141	0	0
Idaho	0	7,267,838	7,020,134
Illinois	0	73,519,311	71,013,611
Indiana	0	33,896,707	32,741,432
Iowa	0	14,230,216	13,745,218
Kansas	0	12,460,507	12,035,825
Kentucky	0	20,962,787	20,248,328
Louisiana	0	26,623,577	25,716,187
Maine	6,671,798	0	0
Maryland	0	33,036,833	31,910,864
Massachusetts	0	35,736,540	34,518,560
Michigan	58,399,248	0	0
Minnesota	0	22,879,665	22,099,875
Mississippi	0	15,002,097	14,490,792
Missouri	0	27,078,890	26,155,981
Montana	6,671,798	0	0
Nebraska	0	8,298,984	8,016,136
Nevada	0	13,584,735	13,121,737
New Hampshire	6,671,798	0	0
New Jersey	0	48,789,749	47,126,886
New Mexico	0	9,169,577	8,857,058
New York	0	120,220,314	116,122,940
North Carolina	0	40,635,135	39,250,199
North Dakota	5,199,042	0	0
Ohio	67,237,227	0	0
Oklahoma	0	18,490,411	17,860,217
Oregon	0	17,123,281	16,539,682
Pennsylvania	0	61,052,379	58,971,579
Rhode Island	6,671,798	0	0
South Carolina	0	21,464,725	20,733,159
South Dakota	4,807,663	0	0

(continued)

Table E12. Cycle 1-BESMA, ASMA, and Scaled ASMA in SAPT BG Calculations (Scenario 1) (continued)

Used In:	Formula A8	Formula A8	Formula A9
State	$A_{i\,(j=1),\,BESMA}$ **($)**	$A_{i\,(j=1),\,ASMA}$ **($)**	$A_{i\,(j=1),\,Scaled\ ASMA}$ **($)**
Tennessee	0	31,300,433	30,233,645
Texas	0	143,082,155	138,205,599
Utah	0	18,028,931	17,414,466
Vermont	5,140,414	0	0
Virginia	0	45,336,816	43,791,637
Washington	35,280,442	0	0
West Virginia	0	9,164,871	8,852,512
Wisconsin	0	26,722,836	25,812,063
Wyoming	3,340,190	0	0
Subtotal (50 States and District of Columbia)	508,371,439	1,197,270,040	1,156,464,430

$$Scale\ Factor\ (Cycle\ j=1) = \frac{0.95 \times 0.985 \times AP_{RFY} - \sum A_{i\,(j=1),\,BESMA}}{\sum A_{i\,(j=1),\,ASMA}}$$

$$= \frac{1,664,835,869 - 508,371,439}{1,197,270,040} = \frac{1,156,464,430}{1,197,270,040} = 0.96592$$

Note 1: In this redistribution cycle, $A_{ij,\,BESMA}$ is set to 0 if the State does not fall into the BESMA (Below/Equal-to-the-Statutory Minimum Allotment) category because it is considered an ASMA (Above the Statutory Minimum Allotment) State.

Note 2: In this redistribution cycle, $A_{ij,\,ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 3: In this redistribution cycle, $A_{ij,\,Scaled\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 4: Some of the calculations may have minor rounding error.

Table E13. Cycle 2-BESMA, ASMA, and Scaled ASMA in SAPT BG Calculations (Scenario 1)

Used In:	Formula A8	Formula A8	Formulas A8 and A9
State	$A_{i\,(j=2),\,BESMA}$ ($)	$A_{i\,(j=2),\,ASMA}$ ($)	$A_{i\,(j=2),\,Scaled\ ASMA}$ ($)
Alabama	24,056,022	0	0
Alaska	4,686,203	0	0
Arizona	0	32,164,303	31,942,662
Arkansas	0	13,552,722	13,459,332
California	252,961,063	0	0
Colorado	0	24,207,149	24,040,340
Connecticut	16,954,098	0	0
Delaware	6,671,798	0	0
District of Columbia	6,671,798	0	0
Florida	0	95,829,155	95,168,805
Georgia	0	51,348,119	50,994,284
Hawaii	7,233,141	0	0
Idaho	0	7,020,134	6,971,759
Illinois	0	71,013,611	70,524,262
Indiana	33,595,920	0	0
Iowa	0	13,745,218	13,650,501
Kansas	12,397,788	0	0
Kentucky	20,843,571	0	0
Louisiana	26,074,047	0	0
Maine	6,671,798	0	0
Maryland	32,256,241	0	0
Massachusetts	0	34,518,560	34,280,696
Michigan	58,399,248	0	0
Minnesota	22,418,943	0	0
Mississippi	0	14,490,792	14,390,937
Missouri	26,384,412	0	0
Montana	6,671,798	0	0
Nebraska	0	8,016,136	7,960,898
Nevada	0	13,121,737	13,031,316
New Hampshire	6,671,798	0	0
New Jersey	47,346,939	0	0
New Mexico	0	8,857,058	8,796,024
New York	116,511,310	0	0
North Carolina	0	39,250,199	38,979,730
North Dakota	5,199,042	0	0
Ohio	67,237,227	0	0
Oklahoma	17,867,220	0	0
Oregon	0	16,539,682	16,425,708
Pennsylvania	59,598,254	0	0
Rhode Island	6,671,798	0	0
South Carolina	20,752,671	0	0
South Dakota	4,807,663	0	0
Tennessee	0	30,233,645	30,025,308

(continued)

Table E13. Cycle 2-BESMA, ASMA, and Scaled ASMA in SAPT BG Calculations (Scenario 1) (continued)

Used In:	Formula A8	Formula A8	Formulas A8 and A9
State	$A_{i\,(j=2),\,BESMA}$ ($)	$A_{i\,(j=2),\,ASMA}$ ($)	$A_{i\,(j=2),\,Scaled\ ASMA}$ ($)
Texas	0	138,205,599	137,253,237
Utah	0	17,414,466	17,294,464
Vermont	5,140,414	0	0
Virginia	0	43,791,637	43,489,873
Washington	35,280,442	0	0
West Virginia	0	8,852,512	8,791,510
Wisconsin	25,991,370	0	0
Wyoming	3,340,190	0	0
Subtotal (50 States and District of Columbia)	987,364,224	682,172,433	677,471,646

$$Scale\ Factor\ (Cycle\ j=2) = \frac{0.95 \times 0.985 \times AP_{RFY} - \sum A_{i(j=2),\,BESMA}}{\sum A_{i(j=2),\,ASMA}}$$

$$= \frac{1,664,835,869 - 987,364,224}{682,172,433} = \frac{677,471,646}{682,172,433} = 0.99931$$

Note 1: In this redistribution cycle, $A_{ij,\,BESMA}$ is set to 0 if the State does not fall into the BESMA (Below/Equal-to-the-Statutory Minimum Allotment) category because it is considered an ASMA (Above the Statutory Minimum Allotment) State.

Note 2: In this redistribution cycle, $A_{ij,\,ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 3: In this redistribution cycle, $A_{ij,\,Scaled\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 4: Some of the calculations in this table may have minor rounding errors.

Table E14. Cycle 3-BESMA, ASMA, and Scaled ASMA in SAPT BG Calculations (Scenario 1)

Used In:	Formula A8	Formula A8	Formulas A8 and A9
State	$A_{i(j=3),BESMA}$ ($)	$A_{i(j=3),ASMA}$ ($)	$A_{i(j=3),Scaled\ ASMA}$ ($)
Alabama	24,056,022	0	
Alaska	4,686,203	0	
Arizona	0	31,942,662	31,921,461
Arkansas	0	13,459,332	13,450,399
California	252,961,063	0	0
Colorado	0	24,040,340	24,024,384
Connecticut	16,954,098	0	0
Delaware	6,671,798	0	0
District of Columbia	6,671,798	0	0
Florida	95,483,056	0	0
Georgia	0	50,994,284	50,960,438
Hawaii	7,233,141	0	0
Idaho	0	6,971,759	6,967,132
Illinois	0	70,524,262	70,477,454
Indiana	33,595,920	0	0
Iowa	0	13,650,501	13,641,441
Kansas	12,397,788	0	0
Kentucky	20,843,571	0	0
Louisiana	26,074,047	0	0
Maine	6,671,798	0	0
Maryland	32,256,241	0	0
Massachusetts	34,324,684	0	0
Michigan	58,399,248	0	0
Minnesota	22,418,943	0	0
Mississippi	0	14,390,937	14,381,386
Missouri	26,384,412	0	0
Montana	6,671,798	0	0
Nebraska	7,961,106	0	0
Nevada	0	13,031,316	13,022,667
New Hampshire	6,671,798	0	0
New Jersey	47,346,939	0	0
New Mexico	0	8,796,024	8,790,186
New York	116,511,310	0	0
North Carolina	0	38,979,730	38,953,858
North Dakota	5,199,042	0	0
Ohio	67,237,227	0	0
Oklahoma	17,867,220	0	0
Oregon	0	16,425,708	16,414,806
Pennsylvania	59,598,254	0	0
Rhode Island	6,671,798	0	0
South Carolina	20,752,671	0	0
South Dakota	4,807,663	0	0

(continued)

Table E14. Cycle 3-BESMA, ASMA, and Scaled ASMA in SAPT BG Calculations (Scenario 1) (continued)

Used In:	Formula A8	Formula A8	Formulas A8 and A9
State	$A_{i(j=3),BESMA}$ **($)**	$A_{i(j=3),ASMA}$ **($)**	$A_{i(j=3),Scaled\ ASMA}$ **($)**
Tennessee	0	30,025,308	30,005,380
Texas	0	137,253,237	137,162,139
Utah	0	17,294,464	17,282,985
Vermont	5,140,414	0	0
Virginia	0	43,489,873	43,461,008
Washington	35,280,442	0	0
West Virginia	0	8,791,510	8,785,675
Wisconsin	25,991,370	0	0
Wyoming	3,340,190	0	0
Subtotal (50 States and District of Columbia)	1,125,133,070	540,061,248	539,702,799

$$Scale\ Factor\ (Cycle\ j=3) = \frac{0.95 \times 0.985 \times AP_{RFY} - \sum A_{i(j=3),BESMA}}{\sum A_{i(j=3),ASMA}}$$

$$= \frac{1,664,835,869 - 1,125,133,070}{540,061,248} = \frac{539,702,799}{540,061,248} = 0.99934$$

Note 1: In this redistribution cycle, $A_{ij,\ BESMA}$ is set to 0 if the State does not fall into the BESMA (Below/Equal-to-the-Statutory Minimum Allotment) category because it is considered an ASMA (Above the Statutory Minimum Allotment) State.

Note 2: In this redistribution cycle, $A_{ij,\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 3: In this redistribution cycle, $A_{ij,\ Scaled\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 4: Some of the calculations in this table may have minor rounding errors.

Table E15. Final SAPT BG Allotment Calculations for States (Scenario 1)

Used In:	Formulas A10 and A12	Formula 8		
State	**Reference Fiscal Year Final Allotments ($A_{i, RFY, Final}$) ($)**	**Prior Fiscal Year Final Allotments ($A_{i, RFY-1, Final}$) ($)**	**Absolute Difference in Allotments ($)**	**Percentage Difference in Allotments (Prior FY to Reference FY)**
Alabama	24,056,022	23,950,492	105,530	0.44%
Alaska	4,686,203	4,492,456	193,747	4.31%
Arizona	31,921,461	30,548,743	1,372,718	4.49%
Arkansas	13,450,399	12,638,833	811,566	6.42%
California	252,961,063	251,851,368	1,109,693	0.44%
Colorado	24,024,384	23,366,008	658,376	2.82%
Connecticut	16,954,098	16,879,723	74,375	0.44%
Delaware	6,671,798	6,577,245	94,553	1.44%
District of Columbia	6,671,798	6,466,664	205,134	3.17%
Florida	95,483,056	95,064,189	418,867	0.44%
Georgia	50,960,438	47,462,679	3,497,759	7.37%
Hawaii	7,233,141	7,201,410	31,731	0.44%
Idaho	6,967,132	6,787,163	179,969	2.65%
Illinois	70,477,454	67,994,327	2,483,127	3.65%
Indiana	33,595,920	33,448,541	147,379	0.44%
Iowa	13,641,441	12,915,707	725,734	5.62%
Kansas	12,397,788	12,343,401	54,387	0.44%
Kentucky	20,843,571	20,752,134	91,437	0.44%
Louisiana	26,074,047	25,959,665	114,382	0.44%
Maine	6,671,798	6,577,245	94,553	1.44%
Maryland	32,256,241	32,114,739	141,502	0.44%
Massachusetts	34,324,684	34,174,108	150,576	0.44%
Michigan	58,399,248	58,143,061	256,187	0.44%
Minnesota	21,879,689	21,783,707	95,982	0.44%
Red Lake Indians	539,254	536,888	2,366	0.44%
Mississippi	14,381,386	14,139,924	241,462	1.71%
Missouri	26,384,412	26,268,668	115,744	0.44%
Montana	6,671,798	6,577,245	94,553	1.44%
Nebraska	7,961,106	7,926,182	34,924	0.44%
Nevada	13,022,667	12,860,149	162,518	1.26%
New Hampshire	6,671,798	6,577,245	94,553	1.44%
New Jersey	47,346,939	47,139,236	207,703	0.44%
New Mexico	8,790,186	8,614,912	175,274	2.03%
New York	116,511,310	116,000,196	511,114	0.44%
North Carolina	38,953,858	38,135,024	818,834	2.15%
North Dakota	5,199,042	4,984,093	214,949	4.31%
Ohio	67,237,227	66,942,269	294,958	0.44%
Oklahoma	17,867,220	17,788,840	78,380	0.44%
Oregon	16,414,806	16,098,174	316,632	1.97%
Pennsylvania	59,598,254	59,336,807	261,447	0.44%
Rhode Island	6,671,798	6,577,245	94,553	1.44%
South Carolina	20,752,671	20,661,633	91,038	0.44%

(continued)

Table E15. Final SAPT BG Allotment Calculations for States (Scenario 1) (continued)

Used In:	Formulas A10 and A12	Formula 8		
State	**Reference Fiscal Year Final Allotments ($A_{i, RFY, Final}$) ($)**	**Prior Fiscal Year Final Allotments ($A_{i, RFY-1, Final}$) ($)**	**Absolute Difference in Allotments ($)**	**Percentage Difference in Allotments (Prior FY to Reference FY)**
South Dakota	4,807,663	4,608,895	198,768	4.31%
Tennessee	30,005,380	29,391,224	614,156	2.09%
Texas	137,162,139	133,331,132	3,831,007	2.87%
Utah	17,282,985	16,914,130	368,855	2.18%
Vermont	5,140,414	4,927,888	212,526	4.31%
Virginia	43,461,008	42,526,592	934,416	2.20%
Washington	35,280,442	35,125,673	154,769	0.44%
West Virginia	8,785,675	8,678,554	107,121	1.23%
Wisconsin	25,991,370	25,877,350	114,020	0.44%
Wyoming	3,340,190	3,202,093	138,097	4.31%
Subtotal (50 States and District of Columbia)	1,664,835,870	1,641,241,869	23,594,001	1.44%

Table E16. Population and Final SAPT BG Allotment Calculations for Territories (Scenarios 1 and 2)

Used In:	Formula A13	Formula A13	Formulas A13, A14, and A16
Territory	**Population (P_i)**	$\frac{P_i}{\sum_{i=1}^{8} P_i}$	**Final Allotments ($A_{i,\ RFY,\ Final}$) ($)**
American Samoa	57,291	0.01309	331,958
Guam	154,805	0.03538	896,979
Northern Marianas	69,221	0.01582	401,084
Puerto Rico	3,808,610	0.87044	22,068,035
Palau	19,129	0.00437	110,838
Marshall Islands	50,840	0.01162	294,580
Micronesia	107,008	0.02446	620,031
Virgin Islands	108,612	0.02482	629,325
Subtotal (Eight Territories)	4,375,516	1.00000	25,352,830

Table E17. SAPT BG Allotment Calculations (Scenario 2)

Used In:	Formula A11	Formula A11
State	Prior Fiscal Year Final Allotments ($)	Reference Fiscal Year Final Allotments ($)
Alabama	24,007,464	23,762,336
Alaska	4,676,744	4,628,992
Arizona	31,857,026	31,531,750
Arkansas	13,423,249	13,286,191
California	252,450,447	249,872,806
Colorado	23,975,890	23,731,085
Connecticut	16,919,875	16,747,115
Delaware	6,658,331	6,590,346
District of Columbia	6,658,331	6,590,346
Florida	95,290,319	94,317,359
Georgia	50,857,572	50,338,292
Hawaii	7,218,541	7,144,836
Idaho	6,953,069	6,882,075
Illinois	70,335,192	69,617,036
Indiana	33,528,105	33,185,767
Iowa	13,613,905	13,474,900
Kansas	12,372,763	12,246,431
Kentucky	20,801,497	20,589,104
Louisiana	26,021,415	25,755,724
Maine	6,658,331	6,590,346
Maryland	32,191,130	31,862,443
Massachusetts	34,255,398	33,905,634
Michigan	58,281,367	57,686,286
Minnesota	21,835,524	21,612,573
Red Lake Indians	538,165	532,670
Mississippi	14,352,357	14,205,812
Missouri	26,331,154	26,062,300
Montana	6,658,331	6,590,346
Nebraska	7,945,036	7,863,913
Nevada	12,996,380	12,863,681
New Hampshire	6,658,331	6,590,346
New Jersey	47,251,367	46,768,908
New Mexico	8,772,443	8,682,872
New York	116,276,127	115,088,891
North Carolina	38,875,228	38,478,293
North Dakota	5,188,548	5,135,570
Ohio	67,101,506	66,416,367
Oklahoma	17,831,154	17,649,089
Oregon	16,381,672	16,214,407
Pennsylvania	59,477,952	58,870,653
Rhode Island	6,658,331	6,590,346
South Carolina	20,710,781	20,499,314
South Dakota	4,797,959	4,748,970
Tennessee	29,944,813	29,639,062
Texas	136,885,271	135,487,606

(continued)

Table E17. SAPT BG Allotment Calculations (Scenario 2) (continued)

Used In:	Formula A11	Formula A11
State	Prior Fiscal Year Final Allotments ($)	Reference Fiscal Year Final Allotments ($)
Utah	17,248,099	17,071,988
Vermont	5,130,038	5,077,658
Virginia	43,373,280	42,930,418
Washington	35,209,227	34,849,724
West Virginia	8,767,941	8,678,416
Wisconsin	25,938,905	25,674,056
Wyoming	3,333,448	3,299,412
Subtotal (50 States and District of Columbia)	1,661,475,329	1,644,510,861

Note 1: Calculation procedures used to determine territory allotments are identical to those used for Scenario 1.

Note 2: Reference fiscal year allotments, relative to those for the prior fiscal year, were reduced by a factor of 0.98979. The calculation involved the appropriation amounts of 1,775,554,720 and 1,757,425,446 for the prior FY and reference FY, respectively.

Appendix F: MH BG Allotment Calculations in Spreadsheet—Examples

The tables contained in this appendix are hypothetical examples of the tables that are usually produced in MH BG allotment calculations. The example-tables are included here just to illustrate the calculation process. In these examples, we have specified the calendar or fiscal years to which the source data pertain. However, we deliberately avoided specifying the reference fiscal year for which the final allotment figures by State or territory were calculated. Furthermore, the appropriation used in the calculations is also hypothetical and does not necessarily represent the appropriation for any fiscal year. For States and territories, the final allotment figures shown here should also not be viewed as the actual allotment awards.

Table F1. Budget Appropriation, Technical Assistance, and Net Amount Available for MH BG for a Given Reference Fiscal Year

Appropriation (AP_{RFY}) ($)	427,958,945
Set-aside ($AP_{RFY} \times 0.05$) ($)	21,397,947
Available for Allotments for Fifty States, District of Columbia, and Eight Territories ($)	406,560,997.75
Available for Allotments for Fifty States and District of Columbia ($)	400,462,582.78
Available for Eight Territories ($)	6,098,414.97
Statutory Minimum Allotment for States and District of Columbia ($)	Shown in Table F8
Statutory Minimum Allotment for Territories ($)	50,000

Table F2. Population-at-Risk in MH BG Allotment Calculations

Used In:	Formula B2	Formula B2	Formula B2	Formula B2	Formula B2
State	**Population Aged 18-24 ($P_{i, 18-24}$)**	**Population Aged 25-44 ($P_{i, 25-44}$)**	**Population Aged 45-64 ($P_{i, 45-64}$)**	**Population Aged 65+ ($P_{i, 65+}$)**	**Weighted Population (Ages 18+) at Risk (P_i)**
Alabama	453,710	1,250,045	1,096,843	592,181	413,201
Alaska	69,574	186,651	162,706	40,598	57,865
Arizona	552,538	1,588,449	1,206,045	714,467	500,789
Arkansas	276,347	738,735	650,937	377,682	247,612
California	3,569,122	10,857,259	7,873,232	3,764,870	3,272,370
Colorado	454,558	1,434,235	1,067,773	441,371	428,623
Connecticut	303,176	990,277	883,855	470,689	322,924
Delaware	81,585	233,584	196,584	106,896	75,732
District of Columbia	64,273	193,928	129,877	67,845	57,490
Florida	1,493,632	4,628,768	4,075,162	2,897,383	1,569,221
Georgia	889,162	2,735,033	1,937,255	826,506	808,718
Hawaii	125,284	348,833	317,003	169,346	116,581
Idaho	153,101	369,744	315,808	155,652	121,788
Illinois	1,254,527	3,733,882	2,927,152	1,507,377	1,167,452
Indiana	634,269	1,732,833	1,461,581	763,059	562,784
Iowa	316,933	784,611	715,472	433,618	270,546
Kansas	295,852	745,605	633,384	353,585	247,126
Kentucky	411,637	1,185,390	1,014,237	512,381	383,245
Louisiana	500,616	1,243,397	1,050,418	524,348	406,958
Maine	120,783	353,190	356,624	188,385	122,307
Maryland	507,475	1,629,434	1,368,928	624,980	511,558
Massachusetts	596,934	1,934,675	1,557,713	856,982	609,514
Michigan	992,111	2,850,238	2,462,215	1,236,501	924,448
Minnesota	520,699	1,475,994	1,204,516	609,396	469,947
Mississippi	322,505	788,564	659,537	349,407	259,355
Missouri	577,581	1,588,018	1,371,563	759,980	523,515
Montana	96,129	233,247	247,311	125,160	83,752
Nebraska	188,391	473,721	403,952	232,387	157,843
Nevada	199,143	687,339	522,488	250,787	207,697
New Hampshire	119,503	369,279	338,500	154,174	120,241
New Jersey	726,145	2,547,551	2,109,241	1,123,842	801,561
New Mexico	198,398	497,042	451,874	225,266	166,945
New York	1,826,944	5,709,344	4,632,120	2,488,959	1,805,909
North Carolina	824,233	2,509,112	1,970,246	1,016,214	783,089
North Dakota	76,213	164,371	152,589	93,837	58,241
Ohio	1,119,732	3,173,996	2,810,010	1,516,771	1,049,261
Oklahoma	382,078	955,330	834,748	461,133	319,920
Oregon	347,267	1,012,770	896,819	453,568	331,255
Pennsylvania	1,180,592	3,334,509	3,117,896	1,901,764	1,144,468
Rhode Island	114,254	305,672	261,392	150,797	101,210
South Carolina	426,854	1,171,460	1,013,602	511,732	382,444
South Dakota	85,043	197,278	177,522	109,040	68,364
Tennessee	571,200	1,707,543	1,441,843	726,683	546,901

(continued)

Table F2. Population-at-Risk in MH BG Allotment Calculations (continued)

Used In:	Formula B2	Formula B2	Formula B2	Formula B2	Formula B2
State	**Population Aged 18-24 ($P_{i, 18-24}$)**	**Population Aged 25-44 ($P_{i, 25-44}$)**	**Population Aged 45-64 ($P_{i, 45-64}$)**	**Population Aged 65+ ($P_{i, 65+}$)**	**Weighted Population (Ages 18+) at Risk (P_i)**
Texas	2,351,723	6,602,345	4,749,023	2,175,256	1,996,148
Utah	313,689	670,146	421,698	203,007	203,204
Vermont	63,895	167,243	170,391	80,132	58,039
Virginia	735,711	2,199,587	1,818,838	833,427	692,258
Washington	618,757	1,810,196	1,515,328	690,583	573,345
West Virginia	174,583	478,611	489,039	277,220	169,277
Wisconsin	566,174	1,534,095	1,327,149	711,987	505,011
Wyoming	55,878	130,035	134,293	59,963	45,777
Subtotal (50 States and District of Columbia)	28,900,513	84,243,194	68,704,332	35,919,174	26,823,826

Note 1: Some of the calculations in this table may have minor rounding errors.

Table F3. Total Taxable Resources (TTR) in MH BG Allotment Calculations

Used In:	Formula B6	Formula B6	Formula B6	Formula B6
State	Total Taxable Resources 1999 ($TTR_{i,\ 1999}$) ($)	Total Taxable Resources 2000 ($TTR_{i,\ 2000}$) ($)	Total Taxable Resources 2001 ($TTR_{i,\ 2001}$) ($)	Average ($\overline{TTR_i}$) ($)
Alabama	129,179,658,000	134,998,545,000	135,878,267,000	33,352,156,667
Alaska	27,060,528,000	29,877,215,000	29,906,339,000	8,948,027,333
Arizona	163,693,781,000	174,458,421,000	178,779,756,000	72,310,652,667
Arkansas	73,358,364,000	76,049,576,000	76,609,758,000	5,339,232,667
California	1,355,366,913,000	1,506,293,389,000	1,477,876,330,000	1,446,512,210,667
Colorado	170,733,278,000	190,788,358,000	190,182,813,000	183,901,483,000
Connecticut	178,022,844,000	196,371,834,000	195,394,612,000	189,929,763,333
Delaware	38,687,331,000	41,900,461,000	44,636,176,000	41,741,322,667
District of Columbia	28,527,870,000	32,238,568,000	33,464,030,000	31,410,156,000
Florida	546,002,578,000	582,841,116,000	588,050,581,000	572,298,091,667
Georgia	300,017,925,000	322,347,123,000	322,604,576,000	314,989,874,667
Hawaii	44,660,571,000	47,068,827,000	47,777,082,000	46,502,160,000
Idaho	39,697,801,000	42,580,979,000	41,857,275,000	41,378,685,000
Illinois	498,887,673,000	533,051,331,000	530,671,501,000	520,870,168,333
Indiana	205,017,407,000	216,501,182,000	215,815,801,000	212,444,796,667
Iowa	97,868,422,000	102,928,715,000	103,308,415,000	101,368,517,333
Kansas	94,377,415,000	99,977,179,000	101,739,496,000	98,698,030,000
Kentucky	125,831,743,000	132,368,467,000	134,831,905,000	131,010,705,000
Louisiana	146,466,616,000	159,195,298,000	161,719,366,000	155,793,760,000
Maine	39,391,516,000	42,544,184,000	42,747,240,000	41,560,980,000
Maryland	219,979,929,000	237,633,079,000	243,724,327,000	233,779,111,667
Massachusetts	294,755,913,000	332,130,156,000	322,512,453,000	316,466,174,000
Michigan	345,557,467,000	361,322,628,000	353,256,125,000	353,378,740,000
Minnesota	193,134,959,000	211,039,753,000	208,989,717,000	204,388,143,000
Mississippi	73,293,284,000	76,110,339,000	76,944,616,000	75,449,413,000
Missouri	192,320,731,000	203,308,911,000	205,444,555,000	200,358,065,667
Montana	24,335,367,000	26,003,352,000	26,598,030,000	25,645,583,000
Nebraska	60,272,136,000	63,616,084,000	63,995,158,000	62,627,792,667
Nevada	80,324,180,000	88,395,729,000	89,409,360,000	86,043,089,667
New Hampshire	54,191,649,000	60,425,181,000	58,534,411,000	57,717,080,333
New Jersey	400,877,006,000	437,747,639,000	437,875,551,000	425,500,065,333
New Mexico	54,914,686,000	57,833,646,000	61,768,652,000	58,172,328,000
New York	845,352,435,000	908,549,803,000	923,671,931,000	892,524,723,000
North Carolina	286,141,476,000	300,371,993,000	299,144,600,000	295,219,356,333
North Dakota	19,672,709,000	21,382,068,000	21,713,994,000	20,922,923,667
Ohio	400,912,767,000	418,070,874,000	416,508,025,000	411,830,555,333
Oklahoma	96,894,853,000	103,594,878,000	105,490,752,000	101,993,494,333
Oregon	126,334,311,000	139,488,028,000	135,518,015,000	133,780,118,000
Pennsylvania	437,430,254,000	463,779,020,000	464,771,675,000	455,326,983,000
Rhode Island	38,540,787,000	43,857,455,000	43,894,720,000	42,097,654,000
South Carolina	120,642,666,000	127,657,691,000	129,697,189,000	125,999,182,000
South Dakota	25,387,421,000	27,223,284,000	27,833,715,000	26,814,806,667
Tennessee	185,976,053,000	194,123,777,000	197,398,055,000	192,499,295,000

(continued)

Table F3. Total Taxable Resources (TTR) in MH BG Allotment Calculations (continued)

Used In:	Formula B6	Formula B6	Formula B6	Formula B6
State	**Total Taxable Resources 1999 ($TTR_{i, 1999}$) ($)**	**Total Taxable Resources 2000 ($TTR_{i, 2000}$) ($)**	**Total Taxable Resources 2001 ($TTR_{i, 2001}$) ($)**	**Average ($\overline{TTR_i}$) ($)**
Texas	733,456,956,000	800,429,515,000	810,718,419,000	781,534,963,333
Utah	68,255,268,000	74,603,354,000	75,400,458,000	72,753,026,667
Vermont	20,147,207,000	21,517,326,000	22,002,484,000	21,222,339,000
Virginia	282,825,233,000	305,778,100,000	313,860,032,000	300,821,121,667
Washington	238,171,156,000	250,491,809,000	248,225,514,000	245,629,493,000
West Virginia	48,343,331,000	49,474,371,000	50,732,787,000	49,516,829,667
Wisconsin	187,196,819,000	198,969,372,000	200,158,654,000	195,441,615,000
Wyoming	20,537,900,000	23,282,132,000	23,908,372,000	22,576,134,667
Subtotal (50 States and District of Columbia)	10,479,027,143,000	11,292,592,115,000	11,313,553,665,000	11,028,390,974,333

Table F4. Total Personal Income (TPI) in MH BG Allotment Calculations

Used In:	Formula B7	Formula B7	Formula B7	Formula B7
State	$TPI_{i,\ 2001}$ ($)	$TPI_{i,\ 2002}$ ($)	$TPI_{i,\ 2003}$ ($)	Average ($\overline{TPI_i}$) ($)
Alabama	110,612,000,000	113,647,000,000	118,260,000,000	114,173,000,000
Alaska	20,162,000,000	20,899,000,000	21,576,000,000	20,879,000,000
Arizona	138,741,000,000	143,680,000,000	150,295,000,000	144,238,666,667
Arkansas	62,233,000,000	63,505,000,000	66,224,000,000	63,987,333,333
California	1,134,884,000,000	1,149,144,000,000	1,185,302,000,000	1,156,443,333,333
Colorado	152,713,000,000	153,593,000,000	157,043,000,000	154,449,666,667
Connecticut	147,323,000,000	147,856,000,000	150,801,000,000	148,660,000,000
Delaware	25,423,000,000	26,183,000,000	27,240,000,000	26,282,000,000
District of Columbia	25,618,000,000	26,125,000,000	26,651,000,000	26,131,333,333
Florida	478,656,000,000	492,218,000,000	510,090,000,000	493,654,666,667
Georgia	241,128,000,000	246,781,000,000	254,104,000,000	247,337,666,667
Hawaii	35,039,000,000	36,759,000,000	38,470,000,000	36,756,000,000
Idaho	33,090,000,000	33,963,000,000	34,954,000,000	34,002,333,333
Illinois	407,965,000,000	412,262,000,000	420,156,000,000	413,461,000,000
Indiana	168,431,000,000	171,841,000,000	178,415,000,000	172,895,666,667
Iowa	79,692,000,000	81,925,000,000	83,604,000,000	81,740,333,333
Kansas	77,399,000,000	78,290,000,000	80,466,000,000	78,718,333,333
Kentucky	101,419,000,000	104,055,000,000	108,515,000,000	104,663,000,000
Louisiana	110,407,000,000	113,277,000,000	117,074,000,000	113,586,000,000
Maine	35,102,000,000	36,295,000,000	37,781,000,000	36,392,666,667
Maryland	191,257,000,000	198,544,000,000	206,166,000,000	198,655,666,667
Massachusetts	249,238,000,000	249,889,000,000	253,528,000,000	250,885,000,000
Michigan	299,284,000,000	302,019,000,000	314,460,000,000	305,254,333,333
Minnesota	162,751,000,000	166,718,000,000	172,217,000,000	167,228,666,667
Mississippi	62,892,000,000	64,328,000,000	67,258,000,000	64,826,000,000
Missouri	157,235,000,000	160,962,000,000	165,967,000,000	161,388,000,000
Montana	22,281,000,000	22,526,000,000	23,651,000,000	22,819,333,333
Nebraska	49,300,000,000	49,872,000,000	52,755,000,000	50,642,333,333
Nevada	64,727,000,000	66,534,000,000	70,567,000,000	67,276,000,000
New Hampshire	42,707,000,000	43,468,000,000	44,686,000,000	43,620,333,333
New Jersey	332,700,000,000	337,853,000,000	345,557,000,000	338,703,333,333
New Mexico	44,083,000,000	45,801,000,000	47,807,000,000	45,897,000,000
New York	678,874,000,000	680,182,000,000	696,531,000,000	685,195,666,667
North Carolina	225,742,000,000	230,696,000,000	237,931,000,000	231,456,333,333
North Dakota	16,470,000,000	16,780,000,000	18,078,000,000	17,109,333,333
Ohio	325,719,000,000	331,968,000,000	342,533,000,000	333,406,666,667
Oklahoma	90,198,000,000	90,077,000,000	93,290,000,000	91,188,333,333
Oregon	98,800,000,000	100,434,000,000	102,538,000,000	100,590,666,667
Pennsylvania	371,897,000,000	380,162,000,000	392,058,000,000	381,372,333,333
Rhode Island	32,229,000,000	33,156,000,000	34,369,000,000	33,251,333,333
South Carolina	101,681,000,000	104,540,000,000	108,398,000,000	104,873,000,000
South Dakota	20,355,000,000	20,261,000,000	21,629,000,000	20,748,333,333
Tennessee	154,439,000,000	159,833,000,000	166,867,000,000	160,379,666,667
Texas	619,483,000,000	623,697,000,000	643,129,000,000	628,769,666,667
Utah	56,332,000,000	57,732,000,000	59,327,000,000	57,797,000,000

(continued)

Table F4. Total Personal Income (TPI) in MH BG Allotment Calculations (continued)

Used In:	Formula B7	Formula B7	Formula B7	Formula B7
State	**$TPI_{i,\ 2001}$ ($)**	**$TPI_{i,\ 2002}$ ($)**	**$TPI_{i,\ 2003}$ ($)**	**Average ($\overline{TPI_i}$) ($)**
Vermont	17,790,000,000	18,247,000,000	18,904,000,000	18,313,666,667
Virginia	233,639,000,000	239,480,000,000	248,554,000,000	240,557,666,667
Washington	194,420,000,000	198,367,000,000	203,956,000,000	198,914,333,333
West Virginia	41,893,000,000	43,305,000,000	44,665,000,000	43,287,666,667
Wisconsin	158,654,000,000	163,118,000,000	168,128,000,000	163,300,000,000
Wyoming	15,060,000,000	15,410,000,000	16,157,000,000	15,542,333,333
Subtotal (50 States and District of Columbia)	8,718,167,000,000	8,868,257,000,000	9,148,682,000,000	8,911,702,000,000

Table F5. Fiscal Capacity Index and Its Components in MH BG Allotment Calculations

Used In:	Formula B6	Formula B6	Formulas B6 and B7	Formulas B6 and B7
State	$\frac{\overline{TTR_i}}{C_i}$	$\frac{\overline{TPI_i}}{C_i}$	$1-0.35\times\left(\frac{\frac{\overline{TTR_i}}{C_i}}{\sum_{i=1}^{51}\frac{\overline{TTR_i}}{C_i}}\Big/\frac{P_i}{\sum_{i=1}^{51}P_i}\right)$ Unconstrained Fiscal Capacity Index (F_i)	Constrained Fiscal Capacity Index (F_i)**
Alabama	146,110,925,785	125,096,759,937	0.69975	0.69975
Alaska	28,766,920,003	20,748,374,866	0.57788	0.57788
Arizona	176,259,498,039	147,544,185,987	0.70115	0.70115
Arkansas	81,019,768,153	68,811,942,038	0.72217	0.72217
California	1,315,011,100,606	1,051,312,121,212	0.65878	0.65878
Colorado	194,341,225,266	163,217,484,559	0.61501	0.61501
Connecticut	172,663,421,212	135,145,454,545	0.54599	0.54599
Delaware	41,465,258,519	26,108,179,013	0.53509	0.53509
District of Columbia*	28,554,687,273	23,755,757,576	0.57826	0.56621
Florida	549,577,483,899	474,056,254,200	0.70262	0.70262
Georgia	306,031,383,730	240,303,242,949	0.67868	0.67869
Hawaii	48,061,460,795	37,988,494,577	0.64995	0.64995
Idaho	43,933,031,481	36,101,330,450	0.69370	0.69370
Illinois	522,374,308,652	414,654,970,010	0.62007	0.62007
Indiana	227,140,911,596	184,855,924,710	0.65730	0.65730
Iowa	112,631,685,926	90,822,592,593	0.64651	0.64651
Kansas	109,664,477,778	87,464,814,815	0.62320	0.62320
Kentucky	142,486,137,916	113,830,596,154	0.68431	0.68431
Louisiana	163,335,764,598	119,084,719,167	0.65920	0.65920
Maine	46,178,866,667	40,436,296,296	0.67941	0.67941
Maryland	216,416,904,471	183,901,992,480	0.64078	0.64078
Massachusetts	310,505,228,476	246,159,339,122	0.56744	0.56744
Michigan	383,179,018,372	330,996,301,024	0.64805	0.64805
Minnesota	223,182,172,618	182,605,784,283	0.59675	0.59675
Mississippi	82,286,188,677	70,700,145,370	0.73060	0.73060
Missouri	222,620,072,963	179,320,000,000	0.63893	0.63893
Montana	28,495,092,222	25,354,814,815	0.71111	0.71111
Nebraska	69,586,436,296	56,269,259,259	0.62566	0.62566
Nevada	79,233,902,462	61,951,982,927	0.67608	0.67608
New Hampshire	61,568,496,997	46,531,084,842	0.56522	0.56522
New Jersey	386,818,241,212	307,912,121,212	0.59024	0.59024
New Mexico	64,635,920,000	50,996,666,667	0.67125	0.67125
New York	819,947,600,778	629,477,849,149	0.61447	0.61447
North Carolina	328,021,507,037	257,173,703,704	0.64433	0.64433
North Dakota	23,247,692,963	19,010,370,370	0.66107	0.66107

(continued)

Table F5. Fiscal Capacity Index and Its Components in MH BG Allotment Calculations (continued)

Used In:	Formula B6	Formula B6	Formulas B6 and B7	Formulas B6 and B7
State	$\frac{\overline{TTR_i}}{C_i}$	$\frac{\overline{TPI_i}}{C_i}$	$1 - 0.35 \times \left(\frac{\frac{\overline{TTR_i}}{C_i}}{\sum_{i=1}^{51} \frac{\overline{TTR_i}}{C_i}} \Big/ \frac{P_i}{\sum_{i=1}^{51} P_i} \right)$ Unconstrained Fiscal Capacity Index (F_i)	Constrained Fiscal Capacity Index (F_i) **
Ohio	444,984,820,713	360,247,446,116	0.63990	0.63990
Oklahoma	113,326,104,815	101,320,370,370	0.69922	0.69922
Oregon	147,341,242,232	110,787,417,482	0.62232	0.62232
Pennsylvania	491,399,878,963	411,586,234,590	0.63542	0.63542
Rhode Island	44,305,419,981	34,995,163,585	0.62830	0.62830
South Carolina	139,999,091,111	116,525,555,556	0.68917	0.68917
South Dakota	29,794,229,630	23,053,703,704	0.62994	0.62994
Tennessee	206,415,352,465	171,973,748,908	0.67952	0.67952
Texas	755,312,233,240	607,672,648,576	0.67871	0.67871
Utah	75,748,834,552	60,176,951,959	0.68348	0.68348
Vermont	23,580,376,667	20,348,518,519	0.65502	0.65502
Virginia	286,752,724,832	229,307,589,885	0.64828	0.64828
Washington	246,284,225,955	199,444,545,596	0.63526	0.63526
West Virginia	55,018,699,630	48,097,407,407	0.72402	0.72402
Wisconsin	216,023,819,094	180,497,329,896	0.63679	0.63679
Wyoming	25,084,594,074	17,269,259,259	0.53471	0.53471
Subtotal (50 States and District of Columbia)	11,056,724,441,392	8,943,004,802,285	0.65000	0.65000

Note 1: Some of the calculations in this table may have rounding errors.
*Note 2: For the District of Columbia, the Fiscal Capacity Index calculation uses TPI instead of TTR.
**Note 3: The quantity in this column is calculated as the maximum of 0.4 and the quantity in the previous column.

Table F6. Formula Share and MH BG Allotment Calculations

Used In:	Formula B1	Formula B1	Formula B1	Formula B10
State	$\mathbf{P_i \times C_i \times F_i}$	$\frac{P_i \times C_i \times F_i}{\sum_{i=1}^{51} P_i \times C_i \times F_i}$	$\mathbf{A_{i,\ RFY,\ Baseline}}$ **($)**	$\mathbf{A_{i,\ RFY,\ Baseline}}$ **(Rounded) ($)**
Alabama	263,889	0.015200242	6,087,128	6,087,128
Alaska	33,650	0.001938257	776,199	776,199
Arizona	343,259	0.019772053	7,917,967	7,917,967
Arkansas	166,280	0.009577882	3,835,583	3,835,583
California	2,371,364	0.136592788	54,700,301	54,700,302
Colorado	249,446	0.014368303	5,753,968	5,753,968
Connecticut	193,946	0.011171454	4,473,749	4,473,749
Delaware	40,793	0.002349726	940,977	940,977
District of Columbia	35,807	0.002062506	825,956	825,956
Florida	1,148,153	0.066134687	26,484,468	26,484,468
Georgia	564,931	0.032540565	13,031,279	13,031,279
Hawaii	73,314	0.004222937	1,691,128	1,691,128
Idaho	79,572	0.004583415	1,835,486	1,835,486
Illinois	721,816	0.041577264	16,650,139	16,650,139
Indiana	345,984	0.019928985	7,980,813	7,980,813
Iowa	157,418	0.009067447	3,631,173	3,631,173
Kansas	138,608	0.007983942	3,197,270	3,197,270
Kentucky	241,137	0.013889722	5,562,314	5,562,314
Louisiana	255,881	0.014738984	5,902,412	5,902,412
Maine	74,786	0.00430776	1,725,097	1,725,097
Maryland	354,095	0.020396192	8,167,912	8,167,912
Massachusetts	352,502	0.020304429	8,131,164	8,131,164
Michigan	552,496	0.031824292	12,744,438	12,744,438
Minnesota	256,826	0.014793419	5,924,211	5,924,211
Mississippi	173,742	0.0100077	4,007,709	4,007,709
Missouri	301,038	0.01734009	6,944,057	6,944,057
Montana	53,601	0.003087451	1,236,408	1,236,408
Nebraska	88,881	0.005119604	2,050,210	2,050,210
Nevada	152,487	0.008783377	3,517,414	3,517,414
New Hampshire	63,711	0.003669829	1,469,629	1,469,629
New Jersey	520,422	0.029976793	12,004,584	12,004,584
New Mexico	100,856	0.005809393	2,326,445	2,326,445
New York	1,207,909	0.069576669	27,862,852	27,862,852
North Carolina	454,108	0.02615703	10,474,912	10,474,912
North Dakota	34,651	0.001995953	799,304	799,304
Ohio	621,396	0.03579299	14,333,753	14,333,753
Oklahoma	201,325	0.011596491	4,643,961	4,643,961
Oregon	187,173	0.010781345	4,317,525	4,317,525
Pennsylvania	673,833	0.038813431	15,543,327	15,543,327
Rhode Island	60,421	0.003480314	1,393,736	1,393,736
South Carolina	237,213	0.0136637	5,471,801	5,471,801
South Dakota	38,759	0.002232538	894,048	894,048
Tennessee	346,578	0.0199632	7,994,515	7,994,515
Texas	1,401,843	0.080747468	32,336,339	32,336,339

(continued)

Table F6. Formula Share and MH BG Allotment Calculations (continued)

Used In:	Formula B1	Formula B1	Formula B1	Formula B10
State	$\mathbf{P_i \times C_i \times F_i}$	$\frac{P_i \times C_i \times F_i}{\sum_{i=1}^{51} P_i \times C_i \times F_i}$	$\mathbf{A_{i,\ RFY,\ Baseline}}$ **($)**	$\mathbf{A_{i,\ RFY,\ Baseline}}$ **(Rounded) ($)**
Utah	133,392	0.007683504	3,076,956	3,076,956
Vermont	34,215	0.001970801	789,232	789,232
Virginia	470,792	0.02711807	10,859,772	10,859,772
Washington	363,255	0.020923824	8,379,209	8,379,209
West Virginia	110,304	0.006353611	2,544,384	2,544,384
Wisconsin	290,944	0.016758652	6,711,213	6,711,213
Wyoming	22,030	0.00126892	508,155	508,155
Subtotal (50 States and District of Columbia)	17,360,830	1.00000	400,462,583	400,462,583

Note 1: Some of the calculations in this table may have minor rounding errors.

Table F7. Comparison of MH BG Allotments (FY 1998 vs. Reference Fiscal Year)

Used In:	Formula B8	Formula B8	Formula B8
State	FY 1998 Actual Allotments* ($)	Absolute Difference in Allotments (Reference FY vs. FY 1998) ($)	Percentage Difference in Allotments (Reference FY vs. FY 1998) ($)
Alabama	3,875,371	2,211,757	57.1%
Alaska	429,159	347,040	80.9%
Arizona	3,870,297	4,047,670	104.6%
Arkansas	2,232,840	1,602,743	71.8%
California	34,513,517	20,186,785	58.5%
Colorado	3,750,325	2,003,643	53.4%
Connecticut	3,241,039	1,232,710	38.0%
Delaware	730,894	210,083	28.7%
District of Columbia	596,523	229,433	38.5%
Florida	12,239,345	14,245,123	116.4%
Georgia	6,194,485	6,836,794	110.4%
Hawaii	1,243,596	447,532	36.0%
Idaho	1,070,863	764,623	71.4%
Illinois	11,194,433	5,455,706	48.7%
Indiana	6,332,808	1,648,005	26.0%
Iowa	2,740,750	890,423	32.5%
Kansas	2,374,949	822,321	34.6%
Kentucky	3,670,758	1,891,556	51.5%
Louisiana	4,376,363	1,526,049	34.9%
Maine	1,265,584	459,513	36.3%
Maryland	5,707,845	2,460,067	43.1%
Massachusetts	6,360,517	1,770,647	27.8%
Michigan	10,771,969	1,972,469	18.3%
Minnesota	4,438,360	1,485,851	33.5%
Mississippi	2,456,254	1,551,455	63.2%
Missouri	4,797,839	2,146,218	44.7%
Montana	873,926	362,482	41.5%
Nebraska	1,300,783	749,427	57.6%
Nevada	1,450,044	2,067,370	142.6%
New Hampshire	1,154,144	315,485	27.3%
New Jersey	8,090,233	3,914,351	48.4%
New Mexico	1,426,307	900,138	63.1%
New York	17,669,287	10,193,565	57.7%
North Carolina	6,238,341	4,236,571	67.9%
North Dakota	548,729	250,575	45.7%
Ohio	12,772,348	1,561,405	12.2%
Oklahoma	3,049,628	1,594,333	52.3%
Oregon	3,228,481	1,089,044	33.7%
Pennsylvania	12,024,336	3,518,991	29.3%
Rhode Island	895,462	498,274	55.6%
South Carolina	3,386,545	2,085,256	61.6%

(continued)

Table F7. Comparison of MH BG Allotments (FY 1998 vs. Reference Fiscal Year) (continued)

Used In:	Formula B8	Formula B8	Formula B8
State	FY 1998 Actual Allotments* ($)	Absolute Difference in Allotments (Reference FY vs. FY 1998) ($)	Percentage Difference in Allotments (Reference FY vs. FY 1998) ($)
South Dakota	579,888	314,160	54.2%
Tennessee	4,613,933	3,380,582	73.3%
Texas	16,264,840	16,071,499	98.8%
Utah	1,579,290	1,497,666	94.8%
Vermont	611,017	178,215	29.2%
Virginia	6,162,479	4,697,293	76.2%
Washington	6,001,118	2,378,091	39.6%
West Virginia	1,941,957	602,427	31.0%
Wisconsin	5,001,980	1,709,233	34.2%
Wyoming	382,485	125,670	32.9%
Subtotal (50 States and District of Columbia)	257,724,264	142,738,319	55.4%

Note 1: Some of the calculations in this table may have minor rounding errors.
* Note 2: Statutory Minimum Allotment for States including the District of Columbia.

Table F8. Final MH BG Allotment Calculations for Territories

Used In:	Formula B11	Formula B11	Formula B11	Formulas B12 and B13	Formula B14
Territory	**Population (Pi)**	$\frac{P_i}{\sum_{i=1}^{8} P_i}$	**Formula Allotments ($)**	**BESMA and Scaled ASMA ($)**	**Final Allotments (Rounded) ($A_{i,\ RFY,\ Final}$) ($)**
American Samoa	57,291	0.01309	79,850	79,543	79,543
Guam	154,805	0.03538	215,761	214,932	214,932
Northern Marianas	69,221	0.01582	96,477	96,107	96,107
Puerto Rico	3,808,610	0.87044	5,308,285	5,287,880	5,287,880
Palau*	19,129	0.00437	26,661	50,000	50,000
Marshall Islands	50,840	0.01162	70,859	70,586	70,586
Micronesia	107,008	0.02446	149,143	148,570	148,570
Virgin Islands	108,612	0.02482	151,379	150,797	150,797
Subtotal (Eight Territories)	4,375,516	1.00000	6,098,415	6,098,415	6,098,415

Appendix G: PAIMI FG Allotment Calculations in Spreadsheet—Examples

The tables contained in this appendix are hypothetical examples of the tables that are usually produced in PAIMI FG allotment calculations. The example-tables are included here just to illustrate the calculation process. In these examples, we have specified the calendar or fiscal years to which the source data pertain. However, we deliberately avoided specifying the reference fiscal year for which the final allotment figures by Domain were calculated. Furthermore, the appropriation used in the calculations is also hypothetical and does not necessarily represent the appropriation for any fiscal year. The final allotment figures shown here should also not be viewed as the actual allotment awards.

Table G1. Budget Appropriation, Technical Assistance, Statutory Minimum Allotments and Net Amount Available for PAIMI FG for a Given Reference Fiscal Year

Appropriation (AP_{RFY}) ($)	34,000,000
Set-aside 2% (AP_{RFY} ×0.02) ($)	680,000
Available for Allotments ($)	33,320,000
FY 1995 Appropriation	21,957,000
Change in Appropriation from FY 1995 to Reference FY (%)	54.8
FY 1995 Statutory Minimum for 50 States, District of Columbia, and Puerto Rico ($)	260,000
FY 1995 Statutory Minimum for the Remaining Domains ($)	139,300
Reference FY Statutory Minimum for 50 States, District of Columbia, and Puerto Rico ($)	402,700
Reference FY Statutory Minimum for the Remaining Domains ($)	215,800

Table G2. Population-Based PAIMI FG Allotment Calculations (57 Domains), Using 50 Percent of the Funding Available

Used In:	Formula C1	Formula C1	Formula C1
Domain	**Population (P_i)**	$\frac{P_i}{\sum_{i=1}^{57} P_i}$	**Part 1 Baseline Allotment** $0.98 \times 0.50 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{57} P_i}$ **($)**
Alabama	4,500,752	0.015238259764456	253,869
Alaska	648,818	0.002196712288048	36,597
Arizona	5,580,811	0.018895030811370	314,791
Arkansas	2,725,714	0.009228488478284	153,747
California	35,484,453	0.120140214882678	2,001,536
Colorado	4,550,688	0.015407328786610	256,686
Connecticut	3,483,372	0.011793701895202	196,483
Delaware	817,491	0.002767790852085	46,111
District of Columbia	563,384	0.001907457184741	31,778
Florida	17,019,068	0.057621699469988	959,978
Georgia	8,684,715	0.029403962526767	489,870
Hawaii	1,257,608	0.004257901209811	70,937
Idaho	1,366,332	0.004626009595838	77,069
Illinois	12,653,544	0.042841283059582	713,736
Indiana	6,195,643	0.020976676218071	349,471
Iowa	2,944,062	0.009967752393081	166,063
Kansas	2,723,507	0.009221016207139	153,622
Kentucky	4,117,827	0.013941785170810	232,270
Louisiana	4,496,334	0.015223301679310	253,620
Maine	1,305,728	0.004420821775055	73,651
Maryland	5,508,909	0.018651591192039	310,736
Massachusetts	6,433,422	0.021781727944656	362,884
Michigan	10,079,985	0.034127947918886	568,572
Minnesota	5,059,375	0.017129597564095	285,379
Mississippi	2,881,281	0.009755193872578	162,522
Missouri	5,704,484	0.019313752238334	321,767
Montana	917,621	0.003106802410646	51,759
Nebraska	1,739,291	0.005888742162194	98,106
Nevada	2,241,154	0.007587906826270	126,415
New Hampshire	1,287,687	0.004359740105945	72,633
New Jersey	8,638,396	0.029247139632719	487,257
New Mexico	1,874,614	0.006346907159090	105,739
New York	19,190,115	0.064972244033839	1,082,438
North Carolina	8,407,248	0.028464538576710	474,219
North Dakota	633,837	0.002145990904259	35,752
Ohio	11,435,798	0.038718343187505	645,048
Oklahoma	3,511,532	0.011889043605869	198,071
Oregon	3,559,596	0.012051774571121	200,783
Pennsylvania	12,365,455	0.041865896053747	697,486
Rhode Island	1,076,164	0.003643583690271	60,702
South Carolina	4,147,152	0.014041071238470	233,924
South Dakota	764,309	0.002587731801777	43,112

(continued)

Table G2. Population-Based PAIMI FG Allotment Calculations (57 Domains), Using 50 Percent of the Funding Available (continued)

Used In:	Formula C1	Formula C1	Formula C1
Domain	**Population (P_i)**	$\frac{P_i}{\sum_{i=1}^{57} P_i}$	**Part 1 Baseline Allotment** $0.98 \times 0.50 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{57} P_i}$ **($)**
Tennessee	5,841,748	0.019778488906408	329,510
Texas	22,118,509	0.074886949057505	1,247,617
Utah	2,351,467	0.007961395112094	132,637
Vermont	619,107	0.002096119334723	34,921
Virginia	7,386,330	0.025008002050768	416,633
Washington	6,131,445	0.020759320140607	345,850
West Virginia	1,810,354	0.006129341167348	102,115
Wisconsin	5,472,299	0.018527640196744	308,670
Wyoming	501,242	0.001697062135584	28,273
Puerto Rico	3,878,532	0.013131600701562	218,772
Subtotal	294,688,309		
American Samoa	57,291	0.000193970949780	3,232
Guam	154,805	0.000524125480106	8,732
American Indian Consortium	280,423	0.000949432121105	15,818
Northern Mariana Islands	69,221	0.000234362519676	3,904
Virgin Islands	108,612	0.000367729186042	6,126
Total	295,358,661	1.000000000000000	16,660,000

Table G3. Population-Based PAIMI FG Allotment Calculations Weighted by Per Capita Income (52 Domains), Using 50 Percent of the Funding Available

Used In:	Formula C1	Formula C1	Formula C1	Formula C1
Domain	**Per Capita Income 2003 (PCI_i) ($)**	$PCI_i \times P_i$	$\frac{\sum_{i=1}^{52}(PCI_i \times P_i) \Big/ \sum_{i=i}^{52} P_i}{PCI_i}$	**Unadjusted Part 2 Baseline Allotment** $\left(0.98 \times 0.50 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{57} P_i}\right) \times \frac{\sum_{i=1}^{52}(PCI_i \times P_i) \Big/ \sum_{i=i}^{52} P_i}{PCI_i}$ **($)**
Alabama	26,276	118,261,759,552	1.187227	301,400
Alaska	33,254	21,575,793,772	0.938100	34,332
Arizona	26,931	150,296,821,041	1.158352	364,639
Arkansas	24,296	66,223,947,344	1.283979	197,407
California	33,403	1,185,287,183,559	0.933915	1,869,265
Colorado	34,510	157,044,242,880	0.903957	232,033
Connecticut	43,292	150,802,140,624	0.720585	141,583
Delaware	33,321	27,239,617,611	0.936213	43,170
District of Columbia	47,305	26,650,880,120	0.659456	20,956
Florida	29,972	510,095,506,096	1.040824	999,167
Georgia	29,259	254,106,076,185	1.066187	522,293
Hawaii	30,589	38,468,971,112	1.019829	72,343
Idaho	25,583	34,954,871,556	1.219386	93,977
Illinois	33,205	420,160,928,520	0.939484	670,543
Indiana	28,797	178,415,931,471	1.083292	378,580
Iowa	28,398	83,605,472,676	1.098513	182,422
Kansas	29,545	80,466,014,315	1.055866	162,204
Kentucky	26,352	108,512,977,104	1.183803	274,962
Louisiana	26,038	117,075,544,692	1.198078	303,857
Maine	28,935	37,781,239,680	1.078126	79,405
Maryland	37,424	206,165,410,416	0.833571	259,020
Massachusetts	39,408	253,528,294,176	0.791605	287,260
Michigan	31,196	314,455,212,060	0.999986	568,564
Minnesota	34,039	172,216,065,625	0.916465	261,540
Mississippi	23,343	67,257,742,383	1.336399	217,194
Missouri	29,094	165,966,257,496	1.072234	345,010
Montana	25,775	23,651,681,275	1.210303	62,644
Nebraska	30,331	52,754,435,321	1.028504	100,903
Nevada	31,487	70,567,215,998	0.990744	125,244
New Hampshire	34,703	44,686,601,961	0.898930	65,292
New Jersey	40,002	345,553,116,792	0.779850	379,988
New Mexico	25,502	47,806,406,228	1.223260	129,347
New York	36,296	696,524,414,040	0.859477	930,330
North Carolina	28,301	237,933,525,648	1.102278	522,721

(continued)

Table G3. Population-Based PAIMI FG Allotment Calculations Weighted by Per Capita Income (52 Domains), Using 50 Percent of the Funding Available (continued)

Used In:	Formula C1	Formula C1	Formula C1	Formula C1
Domain	**Per Capita Income 2003 (PCI_i) ($)**	$PCI_i \times P_i$	$\frac{\sum_{i=1}^{52}(PCI_i \times P_i) \Big/ \sum_{i=i}^{52} P_i}{PCI_i}$	**Unadjusted Part 2 Baseline Allotment** $\left(0.98 \times 0.50 \times AP_{RFY} \times \frac{P_i}{\sum_{i=1}^{57} P_i}\right) \times \frac{\sum_{i=1}^{52}(PCI_i \times P_i) \Big/ \sum_{i=i}^{52} P_i}{PCI_i}$ **($)**
North Dakota	28,521	18,077,665,077	1.093775	39,105
Ohio	29,953	342,536,457,494	1.041484	671,807
Oklahoma	26,567	93,290,870,644	1.174222	232,580
Oregon	28,806	102,537,722,376	1.082954	217,438
Pennsylvania	31,706	392,059,116,230	0.983901	686,257
Rhode Island	31,937	34,369,449,668	0.976784	59,293
South Carolina	26,138	108,398,258,976	1.193495	279,187
South Dakota	28,299	21,629,180,391	1.102356	47,524
Tennessee	28,565	166,869,531,620	1.092090	359,854
Texas	29,076	643,117,767,684	1.072897	1,338,565
Utah	25,230	59,327,512,410	1.236447	163,998
Vermont	30,534	18,903,813,138	1.021666	35,678
Virginia	33,651	248,557,390,830	0.927032	386,233
Washington	33,264	203,956,386,480	0.937818	324,344
West Virginia	24,672	44,665,053,888	1.264412	129,115
Wisconsin	30,723	168,125,442,177	1.015381	313,418
Wyoming	32,235	16,157,535,870	0.967754	27,361
Puerto Rico	11,421	44,296,713,972	2.731421	597,560
American Samoa	NA	NA	1.000000	3,232
Guam	NA	NA	1.000000	8,732
American Indian Consortium	NA	NA	1.000000	15,818
Northern Mariana Islands	NA	NA	1.000000	3,904
Virgin Islands	NA	NA	1.000000	6,126
Total	31,1196*	9,192,968,168,254	1.000000	17,146,727

*The quantity is an average of PCIs of the 50 States, DC, and Puerto Rico weighted by the respective population, and calculated as follows:

$$\text{Weighted Average PCI (52 Domains)} = \frac{\sum_{i=i}^{52}(PCI_i \times P_i)}{\sum_{i=i}^{52} P_i} = \frac{9,192,968,168,254}{294,688,309} = \$31,196$$

Note 1: Some of the calculations in this table may have minor rounding errors.

Table G4. PAIMI FG Baseline Allotment Calculations (57 Domains)

Used In:	Formula C1	Formula C1	Formula C2
Domain	**Adjusted Part 2 Baseline Allotments** $\left(0.98\times 0.50\times AP_{RFY}\times \frac{P_i}{\sum_{i=1}^{57} P_i}\right) \times \frac{\sum_{i=1}^{52}(PCI_i\times P_i)\Big/\sum_{i=i}^{52} P_i}{PCI_i} \times AF$ **($)**	**(Parts 1 and 2 Combined) Baseline Allotments ($A_{i,\ RFY,\ Baseline}$) ($)**	**Statutory Minimum Allotment ($)**
Alabama	292,845	546,714	402,700
Alaska	33,357	69,955	402,700
Arizona	354,288	669,079	402,700
Arkansas	191,804	345,551	402,700
California	1,816,204	3,817,740	402,700
Colorado	225,447	482,133	402,700
Connecticut	137,564	334,047	402,700
Delaware	41,945	88,056	402,700
District of Columbia	20,361	52,140	402,700
Florida	970,805	1,930,782	402,700
Georgia	507,467	997,337	402,700
Hawaii	70,290	141,226	402,700
Idaho	91,310	168,379	402,700
Illinois	651,509	1,365,245	402,700
Indiana	367,833	717,305	402,700
Iowa	177,244	343,307	402,700
Kansas	157,600	311,222	402,700
Kentucky	267,157	499,427	402,700
Louisiana	295,232	548,852	402,700
Maine	77,151	150,802	402,700
Maryland	251,668	562,403	402,700
Massachusetts	279,106	641,990	402,700
Michigan	552,424	1,120,996	402,700
Minnesota	254,116	539,495	402,700
Mississippi	211,028	373,550	402,700
Missouri	335,216	656,983	402,700
Montana	60,866	112,626	402,700
Nebraska	98,039	196,145	402,700
Nevada	121,689	248,104	402,700
New Hampshire	63,439	136,072	402,700
New Jersey	369,201	856,459	402,700
New Mexico	125,675	231,415	402,700
New York	903,921	1,986,359	402,700
North Carolina	507,883	982,103	402,700

(continued)

Table G4. PAIMI FG Baseline Allotment Calculations (57 Domains) (continued)

Used In:	Formula C1	Formula C1	Formula C2
	Part 2 Baseline Allotments $\left(0.98\times0.50\times AP_{RFY}\times\frac{P_i}{\sum_{i=1}^{57}P_i}\right)\times\frac{\sum_{i=1}^{52}(PCI_i\times P_i)\Big/\sum_{i=i}^{52}P_i}{PCI_i}\times AF$	**(Parts 1 and 2 Combined) Baseline Allotments ($A_{i,\ RFY,\ Baseline}$)**	**Statutory Minimum Allotment**
Domain	**($)**	**($)**	**($)**
North Dakota	37,995	73,747	402,700
Ohio	652,737	1,297,784	402,700
Oklahoma	225,978	424,049	402,700
Oregon	211,266	412,049	402,700
Pennsylvania	666,777	1,364,263	402,700
Rhode Island	57,610	118,312	402,700
South Carolina	271,262	505,187	402,700
South Dakota	46,175	89,287	402,700
Tennessee	349,639	679,149	402,700
Texas	1,300,568	2,548,185	402,700
Utah	159,343	291,980	402,700
Vermont	34,665	69,587	402,700
Virginia	375,269	791,902	402,700
Washington	315,138	660,988	402,700
West Virginia	125,450	227,565	402,700
Wisconsin	304,522	613,192	402,700
Wyoming	26,585	54,858	402,700
Puerto Rico	580,597	799,370	402,700
American Samoa	3,140	6,371	215,800
Guam	8,484	17,216	215,800
American Indian Consortium	15,369	31,186	215,800
Northern Mariana Islands	3,794	7,698	215,800
Virgin Islands	5,952	12,079	215,800
Total	16,660,000	33,320,000	22,019,400

Note 1: The Adjustment Factor, AF, is calculated as follows:

$$AF = \frac{16,660,000}{17,146,727} = 0.971614$$

Table G5. Cycles 1 and 2-BESMA, ASMA, and Scaled ASMA in PAIMI FG Allotment Calculations

Used In:	Formula C2	Formula C2	Formula C3	Formula C2	Formula C2	Formula C3
Domain	$A_{i\,(j=1),\,BESMA}$ **($)**	$A_{i\,(j=1),\,ASMA}$ **($)**	$A_{i\,(j=1),\,Scaled\ ASMA}$ **($)**	$A_{i\,(j=2),\,BESMA}$ **($)**	$A_{i\,(j=2),\,ASMA}$ **($)**	$A_{i\,(j=2),\,Scaled\ ASMA}$ **($)**
Alabama	0	546,714	432,942	0	432,942	429,377
Alaska	402,700	0	0	402,700	0	0
Arizona	0	669,079	529,842	0	529,842	525,480
Arkansas	402,700	0	0	402,700	0	0
California	0	3,817,740	3,023,258	0	3,023,258	2,998,367
Colorado	0	482,133	381,800	402,700	0	0
Connecticut	402,700	0	0	402,700	0	0
Delaware	402,700	0	0	402,700	0	0
District of Columbia	402,700	0	0	402,700	0	0
Florida	0	1,930,782	1,528,982	0	1,528,982	1,516,393
Georgia	0	997,337	789,789	0	789,789	783,286
Hawaii	402,700	0	0	402,700	0	0
Idaho	402,700	0	0	402,700	0	0
Illinois	0	1,365,245	1,081,134	0	1,081,134	1,072,233
Indiana	0	717,305	568,032	0	568,032	563,355
Iowa	402,700	0	0	402,700	0	0
Kansas	402,700	0	0	402,700	0	0
Kentucky	0	499,427	395,495	402,700	0	0
Louisiana	0	548,852	434,634	0	434,634	431,056
Maine	402,700	0	0	402,700	0	0
Maryland	0	562,403	445,366	0	445,366	441,699
Massachusetts	0	641,990	508,390	0	508,390	504,204
Michigan	0	1,120,996	887,714	0	887,714	880,405
Minnesota	0	539,495	427,225	0	427,225	423,707
Mississippi	402,700	0	0	402,700	0	0
Missouri	0	656,983	520,263	0	520,263	515,980
Montana	402,700	0	0	402,700	0	0
Nebraska	402,700	0	0	402,700	0	0
Nevada	402,700	0	0	402,700	0	0
New Hampshire	402,700	0	0	402,700	0	0
New Jersey	0	856,459	678,227	0	678,227	672,643
New Mexico	402,700	0	0	402,700	0	0
New York	0	1,986,359	1,572,993	0	1,572,993	1,560,042
North Carolina	0	982,103	777,725	0	777,725	771,321
North Dakota	402,700	0	0	402,700	0	0
Ohio	0	1,297,784	1,027,712	0	1,027,712	1,019,251
Oklahoma	0	424,049	335,804	402,700	0	0
Oregon	0	412,049	326,300	402,700	0	0
Pennsylvania	0	1,364,263	1,080,356	0	1,080,356	1,071,461
Rhode Island	402,700	0	0	402,700	0	0
South Carolina	0	505,187	400,056	402,700	0	0
South Dakota	402,700	0	0	402,700	0	0
Tennessee	0	679,149	537,816	0	537,816	533,389

(continued)

Table G5. Cycles 1 and 2-BESMA, ASMA, and Scaled ASMA in PAIMI FG Allotment Calculations (continued)

Used In:	Formula C2	Formula C2	Formula C3	Formula C2	Formula C2	Formula C3
Domain	$A_{i\,(j=1),\,BESMA}$ **($)**	$A_{i\,(j=1),\,ASMA}$ **($)**	$A_{i\,(j=1),\,Scaled\ ASMA}$ **($)**	$A_{i\,(j=2),\,BESMA}$ **($)**	$A_{i\,(j=2),\,ASMA}$ **($)**	$A_{i\,(j=2),\,Scaled\ ASMA}$ **($)**
Texas	0	2,548,185	2,017,901	0	2,017,901	2,001,287
Utah	402,700	0	0	402,700	0	0
Vermont	402,700	0	0	402,700	0	0
Virginia	0	791,902	627,105	0	627,105	621,942
Washington	0	660,988	523,435	0	523,435	519,125
West Virginia	402,700	0	0	402,700	0	0
Wisconsin	0	613,192	485,585	0	485,585	481,587
Wyoming	402,700	0	0	402,700	0	0
Puerto Rico	0	799,370	633,019	0	633,019	627,807
American Samoa	215,800	0	0	215,800	0	0
Guam	215,800	0	0	215,800	0	0
American Indian Consortium	215,800	0	0	215,800	0	0
Northern Mariana Islands	215,800	0	0	215,800	0	0
Virgin Islands	215,800	0	0	215,800	0	0
Total	10,341,100	29,017,520	22,978,900	12,354,600	21,139,445	20,965,400

$$Scale\ Factor\ (Cycle\ j=1) = \frac{0.98 \times AP_{RFY} - \sum A_{i\,(j=1),\,BESMA}}{\sum A_{i\,(j=1),\,ASMA}}$$

$$= \frac{33,320,000 - 10,341,000}{29,017,520} = \frac{22,978,900}{29,017,520} = 0.7919$$

$$Scale\ Factor\ (Cycle\ j=2) = \frac{0.98 \times AP_{RFY} - \sum A_{i\,(j=2),\,BESMA}}{\sum A_{i\,(j=2),\,ASMA}}$$

$$= \frac{33,320,000 - 12,354,600}{21,139,445} = \frac{20,965,400}{21,139,445} = 0.9918$$

Note 1: In this redistribution cycle, $A_{ij,\,BESMA}$ is set to 0 if the State does not fall into the BESMA (Below/Equal-to-the-Statutory Minimum Allotment) category because it is considered an ASMA (Above the Statutory Minimum Allotment) State.

Note 2: In this redistribution cycle, $A_{ij,\,ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 3: In this redistribution cycle, $A_{ij,\,Scaled\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 4: Some of the calculations in this table may have minor rounding errors.

Table G6. Cycle 3-BESMA, ASMA, and Scaled ASMA and Final Allotments (PAIMI FG Allotment Calculations)

Used In:	Formula C2	Formula C2	Formula C3	Formulas C2 and C3	Formula C4
Domain	$A_{i\,(j=3),\,BESMA}$ **($)**	$A_{i\,(j=3),\,ASMA}$ **($)**	$A_{i\,(j=3),\,Scaled\ ASMA}$ **($)**	**Scaled ASMA, and BESMA ($)**	**Final Allotment* ($)**
Alabama	0	429,377	429,377	429,377	429,377
Alaska	402,700	0	0	402,700	402,700
Arizona	0	525,480	525,480	525,480	525,480
Arkansas	402,700	0	0	402,700	402,700
California	0	2,998,367	2,998,367	2,998,367	2,998,370
Colorado	402,700	0	0	402,700	402,700
Connecticut	402,700	0	0	402,700	402,700
Delaware	402,700	0	0	402,700	402,700
District of Columbia	402,700	0	0	402,700	402,700
Florida	0	1,516,393	1,516,393	1,516,393	1,516,393
Georgia	0	783,286	783,286	783,286	783,286
Hawaii	402,700	0	0	402,700	402,700
Idaho	402,700	0	0	402,700	402,700
Illinois	0	1,072,233	1,072,233	1,072,233	1,072,233
Indiana	0	563,355	563,355	563,355	563,355
Iowa	402,700	0	0	402,700	402,700
Kansas	402,700	0	0	402,700	402,700
Kentucky	402,700	0	0	402,700	402,700
Louisiana	0	431,056	431,056	431,056	431,056
Maine	402,700	0	0	402,700	402,700
Maryland	0	441,699	441,699	441,699	441,699
Massachusetts	0	504,204	504,204	504,204	504,204
Michigan	0	880,405	880,405	880,405	880,405
Minnesota	0	423,707	423,707	423,707	423,707
Mississippi	402,700	0	0	402,700	402,700
Missouri	0	515,980	515,980	515,980	515,980
Montana	402,700	0	0	402,700	402,700
Nebraska	402,700	0	0	402,700	402,700
Nevada	402,700	0	0	402,700	402,700
New Hampshire	402,700	0	0	402,700	402,700
New Jersey	0	672,643	672,643	672,643	672,643
New Mexico	402,700	0	0	402,700	402,700
New York	0	1,560,042	1,560,042	1,560,042	1,560,042
North Carolina	0	771,321	771,321	771,321	771,321
North Dakota	402,700	0	0	402,700	402,700
Ohio	0	1,019,251	1,019,251	1,019,251	1,019,251
Oklahoma	402,700	0	0	402,700	402,700
Oregon	402,700	0	0	402,700	402,700
Pennsylvania	0	1,071,461	1,071,461	1,071,461	1,071,461
Rhode Island	402,700	0	0	402,700	402,700
South Carolina	402,700	0	0	402,700	402,700
South Dakota	402,700	0	0	402,700	402,700

(continued)

Table G6. Cycle 3-BESMA, ASMA, and Scaled ASMA and Final Allotments (PAIMI FG Allotment Calculations (continued)

Used In:	Formula C2	Formula C2	Formula C3	Formulas C2 and C3	Formula C4
Domain	$A_{i\,(j=3),\,BESMA}$ **($)**	$A_{i\,(j=3),\,ASMA}$ **($)**	$A_{i\,(j=3),\,Scaled\ ASMA}$ **($)**	**Scaled ASMA, and BESMA ($)**	**Final Allotment * ($)**
Tennessee	0	533,389	533,389	533,389	533,389
Texas	0	2,001,287	2,001,287	2,001,287	2,001,287
Utah	402,700	0	0	402,700	402,700
Vermont	402,700	0	0	402,700	402,700
Virginia	0	621,942	621,942	621,942	621,942
Washington	0	519,125	519,125	519,125	519,125
West Virginia	402,700	0	0	402,700	402,700
Wisconsin	0	481,587	481,587	481,587	481,587
Wyoming	402,700	0	0	402,700	402,700
Puerto Rico	0	627,807	627,807	627,807	627,807
American Samoa	215,800	0	0	215,800	215,800
Guam	215,800	0	0	215,800	215,800
American Indian Consortium	215,800	0	0	215,800	215,800
Northern Mariana Islands	215,800	0	0	215,800	215,800
Virgin Islands	215,800	0	0	215,800	215,800
Total	12,354,600	20,965,400	20,965,400	33,319,997	33,320,000

$$Scale\ Factor\ (Cycle\ j=3) = \frac{0.98 \times AP_{RFY} - \sum A_{i\,(j=3),\,BESMA}}{\sum A_{i\,(j=3),\,ASMA}}$$

$$= \frac{33,320,000 - 12,354,600}{20,965,400} = \frac{20,965,400}{20,965,400} = 1.0000$$

Note1: In this redistribution cycle, $A_{ij,\,BESMA}$ is set to 0 if the State does not fall into the BESMA (Below/Equal-to-the-Statutory Minimum Allotment) category because it is considered an ASMA (Above the Statutory Minimum Allotment) State.

Note 2: In this redistribution cycle, $A_{ij,\,ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 3: In this redistribution cycle, $A_{ij,\,Scaled\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 4: Because the totals of these two columns are the same, no further scaling of ASMA is needed.

Note 5: Some of the calculations in this table may have minor rounding errors.

*Note 6: The allotment figures in the last column are the same as the figures in the previous column for all Domains except California, which is given an extra $3 to compensate for rounding errors.

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Appendix H: PATH FG Allotment Calculations in Spreadsheet—Examples

The tables contained in this appendix are hypothetical examples of the tables that are usually produced in PATH FG allotment calculations. The example-tables are included here just to illustrate the calculation process. In these examples, we have specified the calendar or fiscal years to which the source data pertain. However, we deliberately avoided specifying the reference fiscal year for which the final allotment figures by Domain were calculated. Furthermore, the appropriation used in the calculations is also hypothetical and does not necessarily represent the appropriation for any fiscal year. The final allotment figures shown here should also not be viewed as the actual allotment awards.

Table H1. Budget Appropriation, Technical Assistance, and Net Amount Available for PATH FG for a Given Reference Fiscal Year

Appropriation (AP_{RFY}) ($)	54,223,237
Set-aside ($0.044 \times AP_{RFY}$)* ($)	2,386,000
Available for Allotments ($)	51,837,237
Minimum Allotment for States, District of Columbia, and Puerto Rico ($)	300,000
Minimum Allotment for Four Territories ($)	50,000

*Although the calculated set-aside amount is 2,385,822.40, we used 2,386,000 as instructed by the Budget Office.

Table H2. Urbanized Area Population-Based PATH FG Baseline Allotment Calculations

Used In:	Formula D1	Formula D1	Formula D1
State	**Population Living in Urbanized Areas in 2000 (UP_i)**	$\frac{UP_i}{\sum_{i=1}^{56} UP_i}$	**Baseline Allotments ($A_{i,\ RFY,\ Baseline}$) ($)**
Alabama	1,941,208	0.0099	513,925
Alaska	277,670	0.0014	73,512
Arizona	3,908,163	0.0200	1,034,667
Arkansas	860,747	0.0044	227,879
California	29,950,008	0.1530	7,929,119
Colorado	3,212,849	0.0164	850,586
Connecticut	2,848,497	0.0145	754,126
Delaware	531,032	0.0027	140,588
District of Columbia	572,059	0.0029	151,450
Florida	13,470,104	0.0688	3,566,145
Georgia	5,010,117	0.0256	1,326,404
Hawaii	835,912	0.0043	221,304
Idaho	603,808	0.0031	159,855
Illinois	9,737,473	0.0497	2,577,949
Indiana	3,410,932	0.0174	903,028
Iowa	1,114,790	0.0057	295,135
Kansas	1,207,832	0.0062	319,768
Kentucky	1,566,760	0.0080	414,792
Louisiana	2,535,614	0.0129	671,292
Maine	313,952	0.0016	83,117
Maryland	4,247,989	0.0217	1,124,634
Massachusetts	5,635,129	0.0288	1,491,873
Michigan	6,578,451	0.0336	1,741,613
Minnesota	2,711,750	0.0138	717,923
Mississippi	679,928	0.0035	180,008
Missouri	3,090,644	0.0158	818,233
Montana	234,195	0.0012	62,002
Nebraska	805,111	0.0041	213,149
Nevada	1,676,309	0.0086	443,795
New Hampshire	551,828	0.0028	146,094
New Jersey	7,753,792	0.0396	2,052,779
New Mexico	862,344	0.0044	228,301
New York	15,504,619	0.0792	4,104,773
North Carolina	3,760,871	0.0192	995,672
North Dakota	230,797	0.0012	61,102
Ohio	7,311,293	0.0373	1,935,629
Oklahoma	1,483,638	0.0076	392,786
Oregon	1,976,124	0.0101	523,169
Pennsylvania	8,210,985	0.0419	2,173,818
Rhode Island	928,119	0.0047	245,715
South Carolina	1,873,821	0.0096	496,085
South Dakota	194,584	0.0010	51,515
Tennessee	2,964,722	0.0151	784,896
Texas	14,795,862	0.0756	3,917,133

(continued)

Table H2. Urbanized Area Population-Based PATH FG Baseline Allotment Calculations (continued)

Used In:	Formula D1	Formula D1	Formula D1
State	**Population Living in Urbanized Areas in 2000 (UP_i)**	$\frac{UP_i}{\sum_{i=1}^{56} UP_i}$	**Baseline Allotments ($A_{i,\ RFY,\ Baseline}$) ($)**
Utah	1,748,080	0.0089	462,796
Vermont	105,365	0.0005	27,895
Virginia	4,713,302	0.0241	1,247,824
Washington	4,303,803	0.0220	1,139,411
West Virginia	512,427	0.0026	135,663
Wisconsin	2,842,494	0.0145	752,537
Wyoming	125,921	0.0006	33,337
Puerto Rico	3,476,691	0.0178	920,437
Guam*	0	0.0000	0
Virgin Islands*	0	0.0000	0
Am. Samoa*	0	0.0000	0
N. Mariana Island*	0	0.0000	0
Total	195,800,515	1.0000	51,837,237

*The population count for urbanized areas is not available for these Domains.

Table H3. Cycles 1 and 2-BESMA, ASMA, and Scaled ASMA in PATH FG Allotment Calculations

Used In:	Formula D2	Formula D2	Formula D3	Formula D2	Formula D2	Formula D3
Domain	$A_{i\,(j=1),\,BESMA}$ **($)**	$A_{i\,(j=1),\,ASMA}$ **($)**	$A_{i\,(j=1),\,Scaled\ ASMA}$ **($)**	$A_{i\,(j=2),\,BESMA}$ **($)**	$A_{i\,(j=2),\,ASMA}$ **($)**	$A_{i\,(j=2),\,Scaled\ ASMA}$ **($)**
Alabama	0	513,925	480,825	0	480,825	480,816
Alaska	300,000	0	0	300,000	0	0
Arizona	0	1,034,667	968,027	0	968,027	968,009
Arkansas	300,000	0	0	300,000	0	0
California	0	7,929,119	7,418,425	0	7,418,425	7,418,291
Colorado	0	850,586	795,802	0	795,802	795,788
Connecticut	0	754,126	705,554	0	705,554	705,542
Delaware	300,000	0	0	300,000	0	0
District of Columbia	300,000	0	0	300,000	0	0
Florida	0	3,566,145	3,336,459	0	3,336,459	3,336,398
Georgia	0	1,326,404	1,240,974	0	1,240,974	1,240,951
Hawaii	300,000	0	0	300,000	0	0
Idaho	300,000	0	0	300,000	0	0
Illinois	0	2,577,949	2,411,910	0	2,411,910	2,411,866
Indiana	0	903,028	844,866	0	844,866	844,851
Iowa	300,000	0	0	300,000	0	0
Kansas	0	319,768	299,172	300,000	0	0
Kentucky	0	414,792	388,076	0	388,076	388,069
Louisiana	0	671,292	628,055	0	628,055	628,044
Maine	300,000	0	0	300,000	0	0
Maryland	0	1,124,634	1,052,200	0	1,052,200	1,052,181
Massachusetts	0	1,491,873	1,395,785	0	1,395,785	1,395,760
Michigan	0	1,741,613	1,629,440	0	1,629,440	1,629,411
Minnesota	0	717,923	671,683	0	671,683	671,671
Mississippi	300,000	0	0	300,000	0	0
Missouri	0	818,233	765,533	0	765,533	765,519
Montana	300,000	0	0	300,000	0	0
Nebraska	300,000	0	0	300,000	0	0
Nevada	0	443,795	415,211	0	415,211	415,203
New Hampshire	300,000	0	0	300,000	0	0
New Jersey	0	2,052,779	1,920,565	0	1,920,565	1,920,530
New Mexico	300,000	0	0	300,000	0	0
New York	0	4,104,773	3,840,395	0	3,840,395	3,840,325
North Carolina	0	995,672	931,544	0	931,544	931,527
North Dakota	300,000	0	0	300,000	0	0
Ohio	0	1,935,629	1,810,960	0	1,810,960	1,810,928
Oklahoma	0	392,786	367,488	0	367,488	367,481
Oregon	0	523,169	489,473	0	489,473	489,464
Pennsylvania	0	2,173,818	2,033,808	0	2,033,808	2,033,772
Rhode Island	300,000	0	0	300,000	0	0
South Carolina	0	496,085	464,133	0	464,133	464,125

(continued)

Table H3. Cycles 1 and 2-BESMA, ASMA, and Scaled ASMA in PATH FG Allotment Calculations (continued)

Used In:	Formula D2	Formula D2	Formula D3	Formula D2	Formula D2	Formula D3
Domain	$A_{i\,(j=1),\,BESMA}$ **($)**	$A_{i\,(j=1),\,ASMA}$ **($)**	$A_{i\,(j=1),\,Scaled\ ASMA}$ **($)**	$A_{i\,(j=2),\,BESMA}$ **($)**	$A_{i\,(j=2),\,ASMA}$ **($)**	$A_{i\,(j=2),\,Scaled\ ASMA}$ **($)**
South Dakota	300,000	0	0	300,000	0	0
Tennessee	0	784,896	734,343	0	734,343	734,329
Texas	0	3,917,133	3,664,840	0	3,664,840	3,664,774
Utah	0	462,796	432,988	0	432,988	432,980
Vermont	300,000	0	0	300,000	0	0
Virginia	0	1,247,824	1,167,455	0	1,167,455	1,167,434
Washington	0	1,139,411	1,066,024	0	1,066,024	1,066,005
West Virginia	300,000	0	0	300,000	0	0
Wisconsin	0	752,537	704,068	0	704,068	704,055
Wyoming	300,000	0	0	300,000	0	0
Puerto Rico	0	920,437	861,154	0	861,154	861,138
Guam	50,000	0	0	50,000	0	0
Virgin Islands	50,000	0	0	50,000	0	0
Am. Samoa	50,000	0	0	50,000	0	0
N. Mariana Isl.	50,000	0	0	50,000	0	0
Total	5,900,000	49,099,616	45,937,235	6,200,000	45,638,065	45,637,237

$$Scale\ Factor\ (Cycle\ j=1) = \frac{0.956 \times AP_{RFY} - \sum A_{i(j=1),\ BESMA}}{\sum A_{i(j=1),\ ASMA}}$$

$$= \frac{51,837,237 - 5,900,000}{49,099,616} = \frac{45,937,237}{49,099,616} = 0.93559$$

$$Scale\ Factor\ (Cycle\ j=2) = \frac{0.956 \times AP_{RFY} - \sum A_{i(j=2),\ BESMA}}{\sum A_{i(j=2),\ ASMA}}$$

$$= \frac{51,837,237 - 6,200,000}{49,099,616} = \frac{45,637,237}{45,638,065} = 0.99998$$

Note 1: In this redistribution cycle, $A_{ij,\ BESMA}$ is set to 0 if the State does not fall into the BESMA (Below/Equal-to-the-Statutory Minimum Allotment) category because it is considered an ASMA (Above the Statutory Minimum Allotment) State.

Note 2: In this redistribution cycle, $A_{ij,\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 3: In this redistribution cycle, $A_{ij,\ Scaled\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 4: Some of the calculations in this table may have minor rounding errors.

Table H4. Cycle 3-BESMA, ASMA, and Scaled ASMA in Final PATH FG Allotment Calculations

Used In:	Formula D2	Formula D2	Formula D3	Formulas D2 and D3	Formula D5	Formula D5
State	$A_{i\,(j=3),\,BESMA}$ ($)	$A_{i\,(j=3),\,ASMA}$ ($)	$A_{i\,(j=3),\,Scaled\ ASMA}$ ($)	BESMA and Scaled ASMA ($)	Allotment Rounded to the 1,000s ($)	Final Allotment* ($)
Alabama	0	480,816	480,816	480,816	481,000	481,000
Alaska	300,000	0	0	300,000	300,000	300,000
Arizona	0	968,009	968,009	968,009	968,000	968,000
Arkansas	300,000	0	0	300,000	300,000	300,000
California	0	7,418,291	7,418,291	7,418,291	7,418,000	7,418,000
Colorado	0	795,788	795,788	795,788	796,000	796,000
Connecticut	0	705,542	705,542	705,542	706,000	706,000
Delaware	300,000	0	0	300,000	300,000	300,000
District of Columbia	300,000	0	0	300,000	300,000	300,000
Florida	0	3,336,398	3,336,398	3,336,398	3,336,000	3,336,000
Georgia	0	1,240,951	1,240,951	1,240,951	1,241,000	1,241,000
Hawaii	300,000	0	0	300,000	300,000	300,000
Idaho	300,000	0	0	300,000	300,000	300,000
Illinois	0	2,411,866	2,411,866	2,411,866	2,412,000	2,412,000
Indiana	0	844,851	844,851	844,851	845,000	845,000
Iowa	300,000	0	0	300,000	300,000	300,000
Kansas	300,000	0	0	300,000	300,000	300,000
Kentucky	0	388,069	388,069	388,069	388,000	388,000
Louisiana	0	628,044	628,044	628,044	628,000	628,000
Maine	300,000	0	0	300,000	300,000	300,000
Maryland	0	1,052,181	1,052,181	1,052,181	1,052,000	1,052,000
Massachusetts	0	1,395,760	1,395,760	1,395,760	1,396,000	1,396,000
Michigan	0	1,629,411	1,629,411	1,629,411	1,629,000	1,629,000
Minnesota	0	671,671	671,671	671,671	672,000	672,000
Mississippi	300,000	0	0	300,000	300,000	300,000
Missouri	0	765,519	765,519	765,519	766,000	766,000
Montana	300,000	0	0	300,000	300,000	300,000
Nebraska	300,000	0	0	300,000	300,000	300,000
Nevada	0	415,203	415,203	415,203	415,000	415,000
New Hampshire	300,000	0	0	300,000	300,000	300,000
New Jersey	0	1,920,530	1,920,530	1,920,530	1,921,000	1,921,000
New Mexico	300,000	0	0	300,000	300,000	300,000
New York	0	3,840,325	3,840,325	3,840,325	3,840,000	3,840,000
North Carolina	0	931,527	931,527	931,527	932,000	932,000
North Dakota	300,000	0	0	300,000	300,000	300,000
Ohio	0	1,810,928	1,810,928	1,810,928	1,811,000	1,811,000
Oklahoma	0	367,481	367,481	367,481	367,000	367,000
Oregon	0	489,464	489,464	489,464	489,000	489,000
Pennsylvania	0	2,033,772	2,033,772	2,033,772	2,034,000	2,034,000

(continued)

Table H4. Cycle 3-BESMA, ASMA, and Scaled ASMA in Final PATH FG Allotment Calculations (continued)

Used In:	Formula D2	Formula D2	Formula D3	Formulas D2 and D3	Formula D5	Formula D5
State	$A_{i\,(j=3),\,BESMA}$ ($)	$A_{i\,(j=3),\,ASMA}$ ($)	$A_{i\,(j=3),\,Scaled\ ASMA}$ ($)	BESMA and Scaled ASMA ($)	Allotment Rounded to the 1,000s ($)	Final Allotment* ($)
Rhode Island	300,000	0	0	300,000	300,000	300,000
South Carolina	0	464,125	464,125	464,125	464,000	464,000
South Dakota	300,000	0	0	300,000	300,000	300,000
Tennessee	0	734,329	734,329	734,329	734,000	734,000
Texas	0	3,664,774	3,664,774	3,664,774	3,665,000	3,665,000
Utah	0	432,980	432,980	432,980	433,000	433,000
Vermont	300,000	0	0	300,000	300,000	300,000
Virginia	0	1,167,434	1,167,434	1,167,434	1,167,000	1,167,000
Washington	0	1,066,005	1,066,005	1,066,005	1,066,000	1,066,000
West Virginia	300,000	0	0	300,000	300,000	300,000
Wisconsin	0	704,055	704,055	704,055	704,000	704,000
Wyoming	300,000	0	0	300,000	300,000	300,000
Puerto Rico	0	861,138	861,138	861,138	861,000	861,000
Guam	50,000	0	0	50,000	50,000	50,000
Virgin Islands	50,000	0	0	50,000	50,000	50,000
Am. Samoa	50,000	0	0	50,000	50,000	50,000
N. Mariana Island	50,000	0	0	50,000	50,000	50,000
Total	6,200,000	45,637,237	45,637,237	51,837,237	51,837,000	51,837,000

$$Scale\ Factor\ (Cycle\ \ j=3) = \frac{0.956 \times AP_{RFY} - \sum A_{i(j=3),\,BESMA}}{\sum A_{i(j=3),\,ASMA}}$$

$$= \frac{51,837,237 - 6,200,000}{45,637,237} = \frac{45,637,237}{45,637,237} = 1.0000$$

Note 1: In this redistribution cycle, $A_{ij,\,BESMA}$ is set to 0 if the State does not fall into the BESMA (Below/Equal-to-the-Statutory Minimum Allotment) category because it is considered an ASMA (Above the Statutory Minimum Allotment) State.

Note 2: In this redistribution cycle, $A_{ij,\,ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 3: In this redistribution cycle, $A_{ij,\,Scaled\ ASMA}$ is set to 0 if the State does not fall into the ASMA (Above the Statutory Minimum Allotment) category because it is considered a BESMA (Below/Equal-to-the-Statutory Minimum Allotment) State.

Note 4: Some of the calculations in this table may have minor rounding errors.

Note 5: Because the totals of columns 4 and 5 are the same, no further scaling of ASMA is needed.

*Note 6: Because the allotments have been rounded to the nearest thousand dollars, there is an excess amount of $237, which has been added to the SAMHSA set-aside amount.

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