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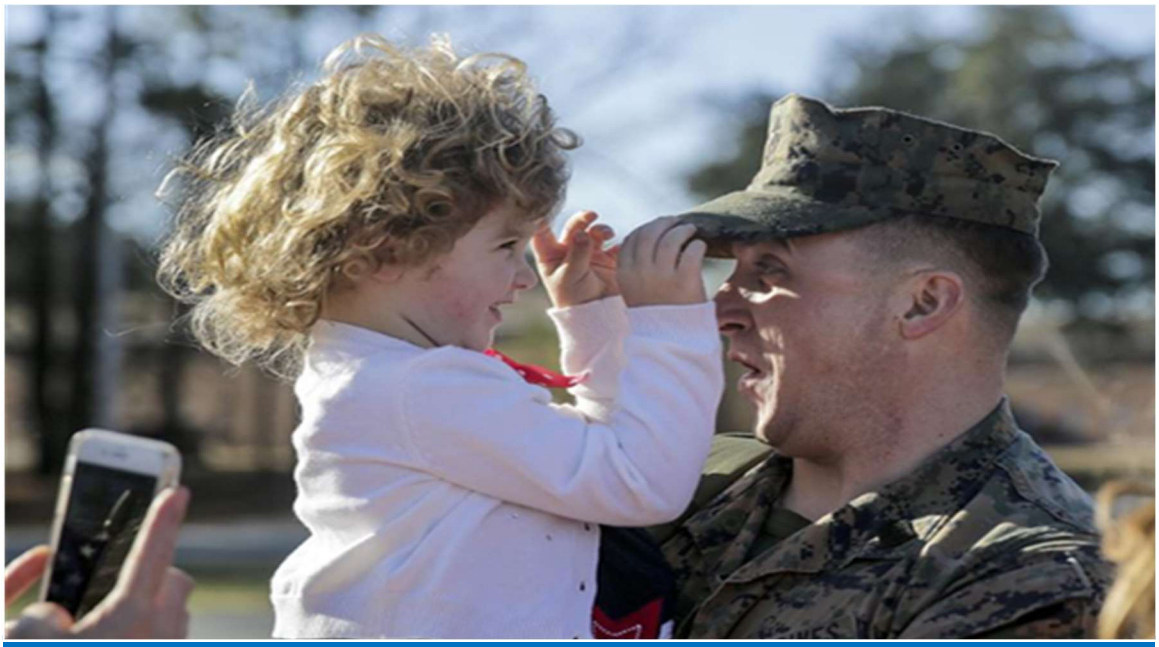

How a Single-Salary Compensation System Could Affect Privatized Military Housing

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Abstract

If the military moves to a single-salary system (SSS), it would combine basic pay and allowances into a single, taxable compensation, with no differences regarding whether servicemembers have dependents. An SSS would mostly raise salaries for single servicemembers and reduce them for families, unless Congress substantially increased personnel outlays. We estimate a reduction in total family pay between 5 to 14 percent. Most of that reduction would come from removing tax advantages for allowances.

The director of the Quadrennial Review of Military Compensation asked CNA to examine the potential effects of an SSS on the military's privatized housing. We found that an SSS would pose serious challenges to the military's privatized family housing projects because it would eliminate the Basic Allowance for Housing (BAH) and reduce incomes for active-duty residents. Without BAH, all the current housing privatization agreements would require renegotiation. With reduced family incomes, the housing projects would need to decrease rents to keep their current resident demographics. We estimate the reduced rents would create aggregated annual losses to privatized housing projects of between $80 million to $210 million.

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Executive Summary

The President tasked the Thirteenth Quadrennial Review of Military Compensation (QRMC) with examining whether the military should move to a single-salary system (SSS). An SSS would combine basic pay and allowances into a single, taxable compensation with no differences in the amounts paid to single and married servicemembers.[1]

An SSS would have profound effects on many aspects of military life, including the services' privatized family housing projects. These projects are typically complex, long-term contractual agreements between the military, private developers, and lenders. All of these agreements peg rents for active-duty servicemembers to their Basic Allowance for Housing (BAH). Under an SSS, BAH would no longer be calculated, so all of these privatization agreements would require renegotiation.

Legal ramifications

Representatives from the services' general counsel offices disagreed about the difficulty of these renegotiations. The Army expected it would be challenging but feasible. The critical stakeholders would be the lenders. The Army projects have a few large lenders and many smaller ones. If deals could be reached with the larger lenders, that could set a template for the others.

The Air Force representatives argued that all Military Housing Privatization Initiative (MHPI) stakeholders would demand to renegotiate all provisions of the agreements. These simultaneous renegotiations could overwhelm their resources. The views of the Navy and Marine Corps were in between those of the other two services.

Eliminating BAH would affect more than those currently in the military. As part of its educational benefits, the Post-9/11 GI Bill, administered through the Department of Veterans Affairs, provides a housing benefit to students based on BAH rates for E5s with dependents. Most program beneficiaries qualify for a housing allowance, which accounts for the largest portion of expenditures.

[1] To be more precise, there must be no pay differences between servicemembers with or without dependents. We use the terms *with dependents*, *married*, and *families* synonymously.

Reduction in rental revenues

Unless federal outlays for military personnel are substantially increased, an SSS will result in lower total compensation for military families. We generated two alternative estimates for family compensation changes under an SSS. One required a fixed-dollar reduction in current pre-tax compensation to military families based on paygrade. The other alternative reduced current pre-tax pay and allowances by 2.6 percent for all military families. Both alternatives removed the current tax preferences for allowances, and both satisfied all the rules set down for an SSS.

We designed these alternatives to minimize income reductions to military families, while keeping federal outlays constant. Nevertheless, these alternatives would result in 5 to 14 percent cuts in Regular Military Compensation[2] (RMC) for military families depending upon paygrade and assignment location. Most of this reduction would be due to the lost tax advantage for current allowances.

Military families are the intended customer base for the privatized housing projects. If they have less income, they will be able to afford less rent. If the military services want to keep the current paygrade mix of residents in the family housing, then rents will have to decrease. Otherwise, these families will be forced to choose lower priced, lower quality housing in the community, and the privatized housing likely will have more senior and single servicemembers, along with more non-military tenants.

The relationship between changes in household incomes and housing expenditures is the "income elasticity of housing demand." We examined the economic literature for appropriate estimates of this elasticity and used them to estimate the expected reductions in rent expenditures for military families under an SSS.

To enable current residents to continue to choose privatized housing, the rents likely will have to decrease by these amounts. For each privatization housing project, we calculated low, medium, and high estimates of the rental revenue losses necessary to keep the current tenant demographics. Military-wide, these revenue losses to privatized housing projects would be between $83 million and $210 million a year. This is a reduction of between 2 to 6 percent, respectively, for rental revenues paid by military families for privatized housing.

[2] RMC includes the current tax benefit of the BAH and Basic Allowance for Subsistence (BAS). Depending upon location and paygrade, this is often a substantial portion of total compensation.

Policy challenges

We spoke with housing subject matter experts (SMEs) at each of the services about the challenges they would face under an SSS. Regarding the elimination of BAH, all of the representatives brought up similar courses of action. The services could (1) allow the projects to charge market rents for the privatized housing, (2) require or provide some continued subsidies for junior paygrades and large or special needs families, or (3) negotiate an alternative algorithm or metric to replace BAH for setting rents.

These alternatives pose a dilemma to the services. On one hand, they want to maximize project revenues to ensure high-quality maintenance and financial stability. On the other hand they want to protect the most vulnerable servicemember families. The choices make the trade-offs between project revenues and resident subsidies very explicit.

The SMEs also were very concerned about the decreased rents required to attract the current paygrade mix. In some cases, funds can be added into these projects, but that is not a desired course of action. However, the SMEs would like to keep the homes affordable to junior, large, and special needs families.

Congress has a history of being very concerned about BAH rates and funding for the privatized housing. When BAH rates were decreased by 5 percent between 2015 and 2019, Congress legislated that the Department of Defense must reimburse the projects. It is likely that moving to an SSS might trigger a similar intervention.

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Contents

Introduction

Every four years, the Department of Defense (DOD) commissions the Quadrennial Review of Military Compensation (QRMC) to fully review the compensation principles and concepts of the armed forces. This Thirteenth QRMC has been tasked by the President to specifically:

> [D]etermine whether the structure of the current military compensation system, as a system of basic pay, housing, and subsistence allowances, remains appropriate, or whether an alternate compensation structure, such as a salary system, would enhance readiness and better enable the Department of Defense to recruit and retain tomorrow's military force. [1]

Combining pay and allowances into a single-salary system (SSS) will affect the military's privatized housing projects in two fundamental ways:

1. It will eliminate the explicit annual calculation of the Basic Allowance for Housing (BAH). All of the military's family housing privatization agreements peg rents charged to servicemembers to their BAH rates. If the BAH is eliminated, all of these projects will need to be adjusted and likely renegotiated.
2. An SSS will equalize compensation levels between servicemembers with and without dependents.[3] Currently, servicemembers with dependents receive higher compensations overall due to housing assignment and BAH policies. Unless the federal government is willing to increase total compensation outlays, an SSS will result in lower compensation for servicemembers with dependents. These servicemembers are the targeted tenant population for the privatized housing. If they have smaller incomes, they will be able to afford less rent, which will impact revenue streams for the projects.

The director of the QRMC asked CNA to examine the potential effects of an SSS on the privatized housing. This paper examines both effects in turn. We then discuss potential policy decisions. The paper ends with a conclusion and two appendices about our SSS compensation estimates and their ramifications for privatized housing.

[3] In this paper we use the terms *with dependents*, *married*, and *family* synonymously. We also use *single servicemember* to mean "without dependents."

The Effect of Eliminating the Basic Allowance for Housing

Eliminating BAH and incorporating allowances into basic pay formulas is much more than an accounting issue of combining multiple compensation accounts. Eliminating BAH will have important legal ramifications for all of the military's privatized housing agreements and for other government programs as well.

Since the Military Housing Privatization Initiative (MHPI) was adopted in 1996, the military has privatized almost all of its family housing in the US. Altogether, there are currently about 200,000 units of privatized housing in roughly 90 public-private partnership agreements with about 20 different companies [2].

All of these agreements contain provisions setting the maximum rents that can be charged to active-duty military families which are pegged to the servicemembers' BAH rates. Each of the agreements would need to be changed in response to an SSS.

Legal ramifications for the privatized housing agreements

We spoke with legal experts from all of the services about the challenges that an SSS would pose to the MHPI contracts. All of them agreed that these contracts would have to be renegotiated, but they disagreed about how difficult that would be.

Army

The Army general counsel thought that the renegotiation would be challenging but could be done in a reasonable period. The critical and most difficult stakeholders in the renegotiations will likely be the lenders because they have the largest financial stake in the projects and an SSS will affect their risk. We were told that the Army projects have a few very large "lead" lenders and many smaller ones. If a deal could be struck with the large lenders, it would probably serve as a template for the others.

Coming to an agreement with the privatization partners would probably not be as difficult. The partners have a smaller, long-term financial risk. The privatization contracts are written so that the partners receive most of their profits off gross revenues, not from the residual net

revenues. This differs from most private owners whose profit comes after all the other bills are paid. For MHPI agreements, the residual profits typically go into reinvestment accounts, not to the partners. The reinvestment accounts absorb the brunt of any shortfalls from an SSS, and those accounts are controlled by the military.

If an SSS does result in revenue shortfalls, the Army has mechanisms to inject additional funds into the projects if necessary. Additional equity can be added, and secondary financing is possible.[4] Also, the Army has limited capacity to move excess funds between projects. These are not desirable outcomes, but they are possible.

Air Force

The Air Force general counsel office had a very different view. They believed that a detailed renegotiation with all MHPI stakeholders would be necessary and that renegotiation would open up all provisions of the agreements.

They were concerned that their staff would be insufficient for such a widespread and detailed simultaneous renegotiation. The MHPI projects were rolled out slowly over many years. SSS renegotiations would likely take place all at once.

The Air Force's MHPI projects were often financed differently than the projects of the other services. The Air Force projects rely more on debt financing and loan subsidies. Because of this, Air Force officials expressed concern that their capacity to inject additional funds into most of their projects is limited, should that become necessary due to an SSS.

Navy and Marine Corps

The Navy and Marine Corps' position was somewhere in between the position of the Army and Air Force. They thought a renegotiation would be long and challenging, but not impossible.

The Navy and Marine Corps' MHPI contracts have a provision that if BAH is replaced by another housing allowance system, then the rents would automatically be pegged to the new system. However, an SSS is an elimination, not a replacement, of BAH, which means that renegotiation would be necessary

The Navy and Marine Corps' projects have mechanisms available to add funding should an SSS make that necessary, but they would be very reluctant to recommend that.

[4] The Army refers to this secondary lending as "mezzanine" loans.

Summation

Although the services disagreed on how difficult renegotiations would be, they all agreed that an SSS would require changes to all of the MHPI contracts. Each project consists of a series of very detailed contracts that could make renegotiations contentious and complicated.

Political sensitivity

There is a history of political sensitivity in Congress regarding BAH rates and the housing privatization agreements. In the National Defense Authorizations Acts for fiscal years 2015 and 2016 [3-4], Congress changed the BAH calculation so that it would cover only 95 percent of the rent and utility costs of the standard BAH housing units. The change was phased in over 5 years from 2015 to 2019. Servicemembers living in town would be expected to absorb out of pocket 5 percent of the national average cost of standardized units for their paygrades.

However, the MHPI agreements prevented the projects from charging active-duty families any out-of-pocket costs to compensate for the change. Those modest cuts to BAH produced a strong, negative response from the MHPI partners and from Congress. Congress ordered DOD to reimburse the privatization projects directly for the 5 percent reduction in BAH revenues from their military tenants.[5] An SSS may provoke a similarly strong response.

Effect on other programs

BAH does not just affect active-duty servicemembers and the privatized housing. It also affects other programs such as the Post-9/11 GI Bill, administered through the Department of Veterans Affairs.

As part of its educational benefits, the Post-9/11 GI Bill provides a housing allowance that is pegged to the E5 with-dependents BAH rate at the location where a student attends most of his or her classes. According to the Congressional Budget Office (CBO), 90 percent of Post-9/11 GI Bill beneficiaries attended programs more than half time, "which qualified them for part or all of the housing benefit" [6].

[5] See section 606 of the National Defense Authorization Act of 2019 [5].

CBO reported that from 2010 through 2016, the government provided $65 billion[6] to 1.6 million beneficiaries. In 2018, there were 700,000 beneficiaries. Housing is the largest portion of the program and accounts for about half the spending [6].

If BAH is eliminated from adopting an SSS, then a substitute metric will have to be found for Post-9/11 GI Bill beneficiaries as well.

[6] In 2018 dollars

The Effect of Changing Compensations

An SSS will eliminate compensation differences between service-members with and without dependents. Currently, those with dependents receive higher overall compensation levels than those without.

Servicemembers living in the US with dependents receive BAH to help pay housing costs for their families. Single servicemembers are either assigned to barracks or receive BAH at the lower, without-dependents rate.

An SSS would change this. In general, it would raise pre-tax compensation levels for single servicemembers to match the compensation levels of their with-dependents counterparts. Unless the federal government is willing to substantially increase its total expenditure on military personnel, an SSS would make it necessary to lower the compensation for servicemembers with dependents.

The QRMC specified that estimates of compensation changes made under an SSS should be cost neutral for the federal government. Therefore, the overall compensation levels for military families will decrease.[7]

Effect on privatized housing

Active-duty, military families are the intended customer base for privatized housing. Their rents are currently capped at their BAH rate.[8] They also receive priority over other potential tenants. Tenants who are not military families are considered "waterfall tenants" and have varying lower priority levels for housing depending upon their relationship to the Department of Defense (DOD).

[7] Under an SSS, single servicemembers who currently receive BAH will typically receive increases in their pre-tax compensation, but also decreases after taxes due to the elimination of the tax advantage for allowances. Single servicemembers who do not currently receive BAH will receive large increases in compensation both pre- and post-tax under an SSS.

[8] So long as the military family selects a unit that is sized to their entitlement level, they cannot be charged more than their BAH as rent. The size of the entitled unit is based on paygrade and the number of dependents. If the servicemember chooses a larger unit, they may have to pay some out-of-pocket costs. Although rents are typically capped at BAH, discounts may be offered to the servicemember, making the effective rent lower than their BAH.

An SSS will reduce incomes for military families, meaning that families will be forced to reduce their expenditures overall, including on housing.[9] Residents who would currently choose privatized housing will likely demand lower rents or choose to live in less-costly, lower-quality housing in the private sector.

The military services will have to decide whether to change policy to accommodate the reduced family incomes. If the services want to maintain the current demographic mix of servicemember families in their privatized housing projects, they will have to charge lower rents, which will reduce rental revenues to these MHPI projects.

Alternatively, the services could decide to keep the current rent levels, which would likely mean that the residents of privatized housing would be more senior paygrades, more single servicemembers, and more waterfall tenants.

Calculating potential revenue losses to privatized housing projects

If the services want to maintain the current tenant mix, rents for privatized housing will have to decline. This section estimates the necessary revenue loss each privatized housing project would experience to keep its current residents under an SSS.[10]

Our methodology for estimating revenue losses to the MHPI projects under an SSS consisted of three steps:

1. Estimate the effect on incomes to military families, the intended tenant base for MHPI housing
2. Estimate how changes to income affect housing expenditures
3. Quantify the potential revenue shortfalls to privatized housing projects, if the services want to keep the current demographic mix of tenants.

The next three sections describe and implement this methodology step by step. We then use this methodology to project the necessary revenue shortfalls that each of the military's privatized housing projects would experience to keep their current mix of tenants.

[9] Housing expenditures typically increase and decrease with household income, but not strictly proportionally [7].

[10] Based on our discussions with housing SMEs, each service expressed a desire to keep the current tenant mix in privatized housing. This is an underlying assumption of our revenue estimates.

Step 1: Estimate the effect on incomes to military families

Compensation estimates under an SSS must fulfill three basic rules set by the QRMC:

- Military basic pay and allowances must be combined into a single taxable amount for each servicemember.
- No pay differences should exist based on whether a servicemember has or does not have dependents.
- As a whole, total federal expenditures for military compensation should remain constant with current costs[11]

Many potential pay distributions will satisfy these rules. Therefore, additional assumptions must be developed regarding compensations between different paygrades and localities. Such assumptions are critical to the fairness and acceptability of an SSS.

We developed two alternative compensation distributions for an SSS to support our analysis of revenue changes to privatized housing.[12] We chose these alternatives because of their simplicity and fairness in terms of pre-tax compensations.

SSS distributions generally increase pre-tax compensation to single servicemembers, especially those not receiving BAH. They reduce compensation to servicemembers with dependents. We designed both our alternatives to minimize the pre-tax pay reductions to servicemembers with dependents while remaining consistent with the SSS rules.

Both alternatives start by providing the full with-dependents BAH rate to all servicemembers in the US[13], and then they use different formulas to reduce pay levels so federal outlays remain constant.[14]

[11] Currently, the Basic Allowance for Subsistence (BAS) and the BAH are tax exempt. The value of these tax exemptions are calculated and included in the baseline of current federal outlays for military compensation.

[12] We examined several compensation distributions for an SSS that had been developed by others. However, those estimates were either not detailed enough, were inconsistent in their pre-tax estimates with SSS rules, or produced variations between localities that were too dramatic for a reasonable analysis of housing demand and rental revenues. Therefore, we developed our own compensation estimates consistent with the basic SSS rules set by the QRMC.

[13] In our sample of 1.2 million servicemembers, providing the full with-dependents BAH rate to all singles (without other pay cuts) would raise federal outlays by $175 million per month. See Appendix A for additional details.

[14] Our estimate of federal outlays include the current foregone taxes from the exemption of allowances. Federal outlays after tax collection will remain constant.

Alternatives 1 and 2 are summarized below. Appendix A contains a more detailed discussion of both methodologies.

Alternative 1

Alternative 1 subtracts a fixed dollar amount from each married servicemember's current pre-tax compensation.[15] These pay subtractions help bring single servicemember pay rates up to their married counterparts. Alternative 1 is similar to the approach currently used to estimate BAH absorption rates—they are calculated so that a married servicemember assigned to any location in the US will have to absorb a specific absolute dollar amount of reduced pay under the SSS. Table 1 shows how this SSS distribution will affect servicemembers with dependents in each paygrade.

Currently, a servicemember's full compensation includes the tax advantage from the BAH and the Baisc Allowance for Subsistence (BAS). The value of this tax advantage varies in different locations because BAH rates vary. It also varies by family income. We estimate that the full compensation loss to military families, including the loss of the tax advantage, will range between 6 to 13 percent depending upon paygrade and assignment location.

The loss of this tax advantage for BAH and BAS is a larger component of a military family's full pay reduction under an SSS than the pre-tax pay difference. It accounts for about 70 percent of the full reduction in pay to military families due to an SSS.

The Alternative 1 SSS has a very different effect on single servicemembers. As a group, they will receive an average 28 percent pay raise. Single servicemembers not currently receiving BAH will receive an average pay raise of 55 percent under the SSS.[16] However, most of the single servicemembers currently receiving BAH will receive pay cuts, although these cuts will be smaller than those for families. On average, single servicemembers currently receiving BAH will experience a reduction of about 5 percent due to the lost tax advantage exceeding any increase to their pre-tax pay.

[15] Pre-tax compensation consists of basic pay, BAH, and BAS.

[16] One reason for this very large increase is that we do not include in current pay estimates any value for imputed rent that servicemembers may receive when they are assigned to barracks or deployed.

Table 1. SSS Alternative 1 effect on compensation to servicemember families within the US

Paygrade	Monthly dollar change in pay	Additional loss
E1	- $71.18	Loss of tax advantage from current Basic Allowance for Housing (BAH) and Basic Allowance for Subsistence (BAS)
E2	- $79.78	
E3	- $83.90	
E4	- $102.98	
E5	- $127.10	
E6	- $154.83	
E7	- $195.21	
E8	- $221.57	
E9	- $284.85	
W1	- $188.23	
W2	- $211.75	
W3	- $265.13	
W4	- $314.55	
W5	- $373.94	
O1	- $135.02	
O2	- $204.04	
O3	- $251.69	
O4	- $332.27	
O5	- $391.43	
O6	- $471.02	
O7	- $549.89	
O8	- $635.45	
O9	- $669.07	
O10	- $669.07	
O1E	- $194.98	
O2E	- $233.70	
O3E	- $303.74	

Source: CNA.

Alternative 2

Alternative 2 is similar to the previous alternative, because it also reduces the pre-tax compensation of military families and redistributes those funds to equalize the pay of single and married servicemembers. In Alternative 2, servicemember families receive a straight reduction of 2.6 percent of their current pre-tax pay and allowances. Because the current BAH rates vary throughout the country, the absolute pre-tax dollar reduction to servicemember families will vary.

The across-the-board 2.6 percent pay and allowance reduction to military families in Alternative 2 does not include the value of the lost tax advantage from current allowances. This tax advantage varies by location and family income. We estimate that the total reduction in pay, allowances, and the lost tax advantage will vary in Alternative 2 from between 5 to 14 percent for military families, depending upon location and paygrade.

As in Alternative 1, the lost tax advantage to military families is much more than the reduction in pre-tax pay. Under Alternative 2, it makes up about 73 percent of the full reduction in pay to military families.

Alternative 2 has a very similar effect on single servicemember compensations as Alternative 1. As a group, they will receive an average 28 percent pay raise. Single servicemembers not currently receiving BAH will receive an average pay raise of 54 percent under Alternative 2, but those currently receiving BAH will receive a 5 percent reduction due to the lost tax advantage.

Using Alternatives 1 and 2

Alternatives 1 and 2 will generate estimated pre-tax compensation levels for servicemembers in every paygrade and Military Housing Area (MHA) in the US. When compared to Regular Military Compensation (RMC)[17] levels, both alternatives provide an estimated percentage of the compensation change from an SSS for each paygrade and location.

The alternatives do not consider the loss of the state tax advantages from current allowances.[18] Therefore, they may somewhat underestimate the total burden of an SSS on servicemember families and singles currently receiving BAH.

[17] RMC includes basic pay, allowances, and the federal tax advantage from those allowances.

[18] Currently, BAH and BAS are not considered taxable under federal or state tax law. An SSS would make that income taxable in both entities. The QRMC rules adjust compensation for the increased federal taxes, but not for the increased state taxes.

Step 2: Estimate how changes to income affect housing expenditures

Economists consider housing to be a "normal good"[19] in the sense that as household income increases, housing expenditures usually increase. When income decreases, housing expenditures usually decrease.[20] However, the share of housing expenditures does not increase or decrease proportionally with income. For example, most economic estimates show that an increase or decrease in income of 10 percent will produce less than a 10 percent change in housing expenditures.

The "income elasticity of demand for housing" measures the percentage change in the demand for housing in response to a given percentage change in income. Economists treat the demand for housing as the expenditures on housing.

As part of this study, CNA commissioned a review of the economic literature on the income elasticities of housing. RCF Economic & Financial Consulting, Inc. which specializes in urban economics, conducted the review focusing on rental housing, because privatized military family housing is rental housing. We derived this elasticity discussion and estimates from that review [7].

General findings from the economic literature

Most economic studies find the income elasticity of housing to be between 0.2 and 0.5. This means that a 1 percent change in household income will result in a change in housing expenditures of between 0.2 percent and 0.5 percent. The best overall estimate of the income elasticity of housing is 0.35 [7].

Estimates of the income elasticity of housing in the economic literature increase as household income increases. However, other potential factors, such as family size, age, and geographic location, do not significantly affect the estimates of the income elasticity for housing [7].

Specific estimates of the income elasticity of housing

Table 2 shows low, average, and high estimates of the income elasticity of rental housing for different income levels.

[19] This is in contrast to an "inferior good" whose consumption increases with reduced incomes.

[20] Holding other potential economic effects constant.

Table 2. Income elasticity of demand for rental housing by household income level

Household income	Low elasticity estimate	Average elasticity estimate	High elasticity estimate
$ 30,000	0.15	0.25	0.36
$ 45,000	0.19	0.33	0.47
$ 60,000	0.22	0.38	0.54
$ 75,000	0.23	0.41	0.58
$ 90,000	0.24	0.43	0.61
$ 120,000	0.25	0.44	0.63
$ 150,000	0.25	0.44	0.63

Source: [7-8]

Reference [7] also fitted these elasticities to an explicit function of household income.[21] Equation (1) shows the formula for calculating the average income elasticity of rental housing based on household income.

$$Average\ Income\ Elasticity\ of\ Rental\ Housing = -0.255 + (0.6984 / (1 + exp(-0.0000437 * (Household\ Income - 7278)))) \quad (1)$$

Equations (2) and (3) show how to transform the average income elasticity estimate for rental housing into the low and high elasticity estimates, respectively [7].

$$Low\ Elasticity\ Estimate = \left(\frac{0.2}{0.35}\right) * Average\ Elasticity\ Estimate \quad (2)$$

$$High\ Elasticity\ Estimate = \left(\frac{0.5}{0.35}\right) * Average\ Elasticity\ Estimate \quad (3)$$

Using the housing elasticity estimates

We applied these estimates of the income elasticity of rental housing to project how servicemembers' demand for housing will change under an SSS. Multiplying the percentage

[21] These equations are based on Table III in [8] with incomes adjusted for inflation using the consumer price index. The elasticity at the mean income is 0.35.

change in household income by the elasticity will give the expected percentage change for rental housing expenditures, as described in equation (4).

$$Expected\ Percentage\ Change\ in\ Rental\ Expenditures = (Income\ Elasticity\ of\ Rental\ Housing) * (Percentage\ Change\ in\ Household\ Income) \quad (4)$$

Alternatives 1 and 2 provide estimates of the new compensation levels for servicemembers under an SSS based on the current pre-tax basic pay[22] and allowances for each paygrade at every MHA in the US.

We then calculated the percentage change from these SSS compensations comparing them to RMC, which includes the tax advantage of allowances being exempt from income tax.

Plugging this percentage change into equation (4) along with the elasticity appropriate to the servicemember's income level will estimate the percentage reduction in rent.

If we assume that residents of privatized housing are currently paying their full BAH in rent and utilities, then we can multiply BAH by that percentage reduction to estimate the dollar decrease in rental expenditures. Equation (5) summarizes this process.

$$Expected\ Dollar\ Change\ in\ Rental\ Expenditures = (Income\ Elasticity\ of\ Rental\ Housing) * (Percentage\ Change\ in\ Household\ Income) * (With\text{-}Dependents\ BAH\ Rate) \quad (5)$$

Spousal income considerations

If a servicemember's spouse earns income, then those earnings are part of the total household income and should be included in the elasticity and rental change calculations. We have limited information about the percentage of military spouses' employment and earnings.

Data from the American Community Surveys (ACS) by the US Census Bureau from 2010 through 2018[23] show that about 60 percent of respondents in the military had spouses

[22] We use paygrade and the average years of service for members within that paygrade to calculate basic pay levels.

[23] The Census ACS data were accessed through the Integrated Public Use Microdata Series (IPUMS-USA) website, compiled by the Minnesota Population Center of the University of Minnesota [9].

earning income. The median spousal earnings for those 60 percent of respondents was about $25,000 a year [9].

Those with earning spouses were more likely to live in owner-occupied housing, but other housing statistics looked very similar between those with earning and non-earning spouses. Servicemembers with earning spouses who rented tended to pay similar or even lower rents than those with non-earning spouses [9].

Commuting times for renters in both groups were very similar. Roughly half of the servicemembers who reported having commute times of 10 minutes or less between the years 2010 and 2018 had earning spouses [9].

We assumed that most of these servicemembers with very short commutes are living in privatized housing. Although we do not have direct evidence, these Census data suggest that about half of the residents in privatized housing probably have spouses earning income; this is a smaller proportion than the overall percentage of servicemembers with earning spouses.

To estimate the desired rent reductions from an SSS for those with earning spouses, we assumed that a spouse with earnings adds $25,000 to his or her household's incomes.

Step 3: Quantify the potential revenue shortfall to privatized housing projects

Steps 1 and 2 provide estimates for how an SSS will reduce incomes and the desired rent payments for military families. All of the military services provided us with 2019 occupancy data for their privatized housing projects by paygrade. If the military services want to keep these tenant demographics, they will have to reduce rents accordingly under an SSS.

Knowing the occupancy and the estimated rent changes for these occupants under an SSS allows us to straightforwardly estimate potential revenue shortfalls. For the military to keep these tenants, the overall revenue reduction would be the sum of the required rent change per resident multiplied by the number of residents in that paygrade.

Limitations of these estimates

These estimates are the maximum potential revenue shortfall due to an SSS.[24] The calculations assume that all military families are paying their full BAH in rent. In reality, many of them currently may be receiving discounts, which means the BAH factor in equation (5) would be too high. A more accurate estimate of effective current rents, incorporating the discounts, would produce a smaller expected reduction.

[24] Implemented with the corresponding Alternative 1 or Alternative 2 compensations.

This analysis is a static analysis, focused on inducing current residents of privatized housing to make the same choices under an SSS. A more dynamic analysis would take into account the changing choices of servicemembers living off base as well. An SSS could produce a different population choosing privatized housing. Depending upon the relative rents paid by these new residents versus current residents, total revenue changes to the projects could differ from our estimates.

For example, the reduced incomes to military families might induce more servicemembers to choose privatized housing. If this crowds out existing waterfall tenants, then the critical factor would be whether these waterfall tenants pay more or less in rent than active-duty tenants. A 2018 study of the effect of the 5 percent BAH reduction on Navy privatized housing revenues found that waterfall tenants appear to pay less than active-duty servicemembers [10].[25] If this is also the case military-wide, then crowding out waterfall tenants could mitigate some of the expected losses.

Another big factor would be the priorities of the military services. With an SSS, will they want to keep the current demographics and, if so, who would cover the costs?

Estimated maximum revenue losses to privatized housing projects

Using the three-step methodology, we estimated the revenue losses that would be necessary to retain the current tenant paygrade mix at the military's privatized housing projects.

Here we present tables estimating the revenue losses for each service's housing projects under the Alternative 1 SSS compensation distribution assumptions. Appendix B contains tables with the corresponding estimated revenue losses using the Alternative 2 SSS distribution assumptions.[26]

The estimation tables show low, medium, and high revenue loss predictions based on the different income elasticities for housing. They also show the estimated medium monthly revenue loss per unit of housing in the project.[27]

[25] This may be because the privatized housing is specifically located and provides amenities to benefit military families, who may find the housing more valuable than waterfall tenants.

[26] Alternatives 1 and 2 tend to have fairly similar overall effects on the predicted changes to privatized housing revenues. The Alternative 2 tables are presented in Appendix B for completeness.

[27] The estimated revenue losses per unit of housing can vary greatly, depending upon the proportion of waterfall tenants in the housing project. Rents charged to waterfall tenants presumably will not be affected by an SSS.

Since the available evidence suggests that about half the spouses in privatized housing have earned incomes, we averaged the predicted effects between servicemembers with earning and non-earning spouses.

Tables 3 through 6 show the predicted monthly revenue reductions for privatized housing projects for the Army, Navy, Marine Corps, and Air Force, respectively. These are the losses necessary to retain the current tenant demographic mix.

Table 3. Estimated monthly revenue losses to Army privatized housing projects under an SSS using the Alternative 1 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Aberdeen Proving Ground	775	$13,111	$22,945	$32,778	$30
Carlisle Barracks / Picatinny Arsenal	348	$15,513	$27,147	$38,782	$78
Fort Belvoir	2,094	$124,213	$217,373	$310,533	$104
Fort Benning	4,001	$99,070	$173,373	$247,675	$43
Fort Bliss / White Sands MR	4,586	$110,727	$193,773	$276,818	$42
Fort Bragg	5,959	$134,559	$235,478	$336,397	$40
Fort Campbell	4,452	$117,646	$205,881	$294,116	$46
Fort Carson	3,376	$111,401	$194,951	$278,501	$58
Fort Detrick / Walter Reed	585	$10,533	$18,432	$26,332	$32
Fort Drum	3,779	$111,829	$195,702	$279,574	$52
Fort Eustis / Story	1,126	$34,997	$61,244	$87,492	$54
Fort Gordon	1,068	$21,975	$38,457	$54,939	$36
Fort Hamilton	221	$11,292	$19,761	$28,230	$89
Fort Hood[a] (including Liberty Village)	5,397	$108,463	$189,810	$271,157	$35

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Fort Huachuca / Yuma PG	1,264	$23,445	$41,029	$58,613	$32
Fort Irwin / Moffett / Parks[b]	2,879	$92,654	$162,144	$231,634	$56
Fort Jackson	850	$22,115	$38,701	$55,287	$46
Fort Knox	2,379	$41,103	$71,930	$102,757	$30
Fort Leavenworth	1,680	$41,168	$72,044	$102,920	$43
Fort Lee	1,485	$43,416	$75,977	$108,539	$51
Fort Leonard Wood	1,802	$29,048	$50,835	$72,621	$28
Fort Lewis / McChord AFB	5,098	$208,620	$365,085	$521,550	$72
Fort Meade	2,615	$93,957	$164,424	$234,892	$63
Fort Polk	3,639	$64,764	$113,337	$161,910	$31
Fort Riley	3,820	$82,001	$143,501	$205,002	$38
Fort Rucker	1,401	$26,874	$47,030	$67,185	$34
Fort Sam Houston	912	$29,717	$52,004	$74,292	$57
Fort Shafter[c]	7,704	$559,799	$979,648	$1,399,496	$127
Fort Sill	1,808	$34,766	$60,840	$86,915	$34
Fort Stewart[d]	3,238	$80,105	$140,183	$200,261	$43
Fort Wainwright[e]	1,926	$76,835	$134,461	$192,087	$70
Presidio of Monterey[f]	2,355	$99,290	$173,758	$248,225	$74
Redstone Arsenal	354	$1,994	$3,490	$4,986	$10
West Point	812	$46,305	$81,034	$115,762	$100
Total	**85,788**	**$2,723,304**	**$4,765,781**	**$6,808,259**	**$56**

Sources: [11-12] and CNA.

[a] It was not clear from [12] whether the number of units available at Fort Hood housing included Liberty Village, so the number of homes in this entry may be an undercount. However, the estimated monthly losses do include the residents of Liberty Village.
[b] Reference [12] grouped Fort Irwin with Moffett Field and Camp Parks. Reference [11] provided data on occupants from Fort Irwin, but we were unable to distinguish between occupants from Moffett Field and Camp Parks. Since Moffett Field and Camp Parks have different BAH rates, we used averages to estimate revenue losses for Moffett Field and Camp Parks.
[c] Although reference [11] lists its occupancy numbers as only being for homes at Fort Shafter, additional data, including reference [12], suggest these numbers are more consistent with Army privatized housing throughout Hawaii. Therefore, we believe the monthly loss estimates likely include all Army housing in Hawaii.
[d] Monthly loss estimates for Fort Stewart may also include Hunter Army Air Field. The number of homes listed includes both installations.
[e] Monthly loss estimates for Fort Wainwright may also include Fort Greely. The number of homes listed includes both installations.
[f] Reference [12] listed the Presidio of Monterey combined with the Naval Postgraduate School, so the "number of homes" may be overstated. However, we calculated the estimate of monthly losses for the Presidio of Monterey itself.

Table 4. Estimated monthly revenue losses to Navy privatized housing projects under an SSS using the Alternative 1 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Anacostia	217	$11,602	$20,303	$29,004	$94
Annapolis	253	$10,875	$19,032	$27,188	$75
Charleston	877	$24,760	$43,329	$61,899	$49
China Lake	192	$3,984	$6,971	$9,959	$36
Colts Neck	84	$4,387	$7,677	$10,967	$91
Corpus Christi	257	$7,050	$12,338	$17,625	$48
Dahlgren	184	$4,519	$7,909	$11,298	$43
El Centro	98	$1,930	$3,377	$4,824	$34
Everett	141	$7,694	$13,465	$19,235	$95
Fallon	188	$3,082	$5,393	$7,704	$29
Ft Worth	82	$3,066	$5,366	$7,666	$65
Great Lakes	1,141	$44,250	$77,438	$110,625	$68
Gulfport	550	$10,056	$17,598	$25,140	$32
Hampton Roads	4,208	$145,357	$254,376	$363,394	$60
Indian Head	136	$5,280	$9,239	$13,199	$68
Ingleside	104	$87	$152	$217	$1
Jacksonville	302	$11,077	$19,384	$27,692	$64
Crane	11	$291	$509	$727	$46
Kauai	54	$2,021	$3,536	$5,052	$65
Key West	715	$34,879	$61,038	$87,197	$85
Kings Bay	431	$9,409	$16,466	$23,523	$38
Kingsville	102	$1,864	$3,262	$4,660	$32
Kitsap	1,699	$67,241	$117,672	$168,103	$69

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Lakehurst	98	$2,790	$4,882	$6,974	$50
Lemoore	1,628	$42,509	$74,392	$106,274	$46
Mayport	829	$27,633	$48,357	$69,082	$58
Mechanicsburg	31	$1,298	$2,271	$3,245	$73
Meridian	161	$2,829	$4,951	$7,073	$31
Midsouth	280	$7,921	$13,861	$19,802	$50
Mitchel	189	$11,497	$20,119	$28,742	$106
New London	1,297	$39,239	$68,669	$98,099	$53
New Orleans	834	$20,168	$35,294	$50,420	$42
Newport	644	$31,864	$55,762	$79,660	$87
Oahu	4,392	$323,180	$565,565	$807,949	$129
Panama City	49	$1,701	$2,977	$4,253	$61
Patuxent River	735	$20,544	$35,952	$51,361	$49
Pensacola	538	$11,906	$20,835	$29,765	$39
Portsmouth, NH	210	$9,674	$16,929	$24,185	$81
San Diego	9,096	$653,394	$1,143,439	$1,633,484	$126
Saratoga	150	$2,954	$5,170	$7,385	$34
Seal Beach	185	$14,222	$24,889	$35,555	$135
Ventura	1,223	$78,230	$136,903	$195,576	$112
Whidbey Island	1,493	$64,048	$112,084	$160,120	$75
Whiting Field	207	$2,293	$4,012	$5,732	$19
Totals	**36,295**	**$1,784,653**	**$3,123,142**	**$4,461,631**	**$86**

Sources: [13] and CNA.

Table 5. Estimated monthly revenue losses to Marine Corps privatized housing projects under an SSS using the Alternative 1 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Albany	110	$1,969	$3,446	$4,922	$31
Beaufort	1,450	$45,052	$78,841	$112,630	$54
Bridgeport	111	$2,715	$4,751	$6,787	$43
Lejeune	4,933	$103,770	$181,597	$259,424	$37
Pendleton	7,718	$487,465	$853,064	$1,218,662	$111
Cherry Point	1,450	$26,052	$45,592	$65,131	$31
Chicopee	124	$3,945	$6,903	$9,861	$56
Kansas City	76	$2,077	$3,635	$5,193	$48
Hawaii	2,522	$202,310	$354,043	$505,775	$140
Quantico	1,137	$49,614	$86,824	$124,035	$76
San Diego	5	$339	$594	$848	$119
Stewart	171	$4,053	$7,093	$10,132	$41
Twentynine Palms	2,200	$41,247	$72,182	$103,117	$33
Totals	**22,007**	**$970,607**	**$1,698,563**	**$2,426,518**	**$77**

Sources: [13] and CNA.

Table 6. Estimated monthly revenue losses to Air Force privatized housing projects under an SSS using the Alternative 1 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Academy	663	$8,725	$15,268	$21,811	$23
Altus	529	$6,169	$10,796	$15,424	$20
Andrews	1,091	$40,000	$70,000	$100,000	$64
Arnold	22	$498	$872	$1,246	$40
Barksdale	1,090	$19,945	$34,903	$49,862	$32
Beale	509	$23,034	$40,310	$57,586	$79
Bolling	815	$41,567	$72,742	$103,918	$89
Buckley	351	$16,583	$29,021	$41,459	$83
Cannon	1,038	$20,423	$35,740	$51,057	$34
Cavalier	14	$341	$597	$853	$43
Charleston	559	$16,797	$29,395	$41,993	$53
Columbus	453	$7,267	$12,717	$18,167	$28
Davis-Monthan	1,173	$25,542	$44,699	$63,856	$38
Dover	982	$22,243	$38,925	$55,607	$40
Dyess	402	$1,907	$3,338	$4,768	$8
Dyess (ACC III)	674	$14,288	$25,005	$35,721	$37
Edwards	735	$29,706	$51,986	$74,265	$71
Eglin	853	$24,458	$42,802	$61,145	$50
Eielson	901	$29,912	$52,346	$74,780	$58
Ellsworth	500	$12,205	$21,358	$30,511	$43
Fairchild	641	$17,133	$29,983	$42,833	$47
FE Warren	748	$15,461	$27,058	$38,654	$36
Goodfellow	241	$6,402	$11,203	$16,004	$46

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Grand Forks	547	$14,020	$24,536	$35,051	$45
Hanscom	1,462	$49,940	$87,395	$124,850	$60
Hickam	2,485	$172,978	$302,712	$432,445	$122
Hill	1,089	$27,516	$48,152	$68,789	$44
Holloman	1,061	$16,909	$29,591	$42,273	$28
Hurlburt	379	$11,862	$20,758	$29,654	$55
JBER I	828	$21,487	$37,603	$53,718	$45
JBER II	1,194	$40,414	$70,724	$101,035	$59
JBER III	1,240	$49,654	$86,895	$124,136	$70
Keesler Main	841	$16,398	$28,696	$40,995	$34
Keesler NDSU	325	$2,368	$4,143	$5,919	$13
Kirtland	1,301	$23,451	$41,039	$58,628	$32
Lackland	874	$25,838	$45,217	$64,596	$52
Langley	1,430	$48,921	$85,611	$122,302	$60
Laughlin	451	$6,591	$11,534	$16,477	$26
Little Rock	989	$12,164	$21,286	$30,409	$22
Los Angeles	615	$24,934	$43,635	$62,336	$71
Luke	550	$16,381	$28,668	$40,954	$52
MacDill	549	$24,117	$42,206	$60,294	$77
Malmstrom	1,116	$19,629	$34,350	$49,072	$31
Maxwell	511	$10,574	$18,505	$26,435	$36
McConnell	381	$8,618	$15,082	$21,545	$40
Minot	1,438	$32,724	$57,266	$81,809	$40
Moody	287	$5,193	$9,088	$12,983	$32

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Moody (ACC III)	101	$2,326	$4,070	$5,814	$40
Mt. Home	844	$17,576	$30,759	$43,941	$36
Nellis	1,180	$36,979	$64,713	$92,447	$55
Offutt	1,867	$23,874	$41,780	$59,685	$22
Patrick	616	$11,653	$20,393	$29,134	$33
Peterson	669	$23,525	$41,169	$58,813	$62
Randolph	317	$10,019	$17,533	$25,047	$55
Robins I[a]	672	$2,105	$3,683	$5,262	$5
Robins II[a]	254	$5,976	$10,458	$14,940	$41
Schriever	242	$7,896	$13,818	$19,741	$57
Scott	1,593	$33,819	$59,182	$84,546	$37
Seymour Johnson	686	$14,018	$24,532	$35,045	$36
Shaw	632	$13,381	$23,416	$33,452	$37
Sheppard	708	$11,300	$19,776	$28,251	$28
Tinker	642	$8,757	$15,324	$21,891	$24
Travis	1,260	$75,609	$132,317	$189,024	$105
Tyndall[b]	N/A	N/A	N/A	N/A	N/A
Vance	242	$4,025	$7,043	$10,062	$29
Vandenberg	991	$38,071	$66,624	$95,178	$67
Whiteman	890	$16,335	$28,586	$40,838	$32
Wright-Patterson	1,464	$16,848	$29,483	$42,119	$20
Totals	**52,797**	**1,457,382**	**2,550,418**	**3,643,454**	**$48**

Sources: [14-15] and CNA.

[a]The large differences in the estimated losses and losses per housing unit between Robins I and II are due to the large differences in the numbers of current waterfall tenants in the two projects.

[b] Tyndall housing does not appear to be in use currently due to the effects of Hurricane Michael in 2018.

Interpretation and summary estimates

Tables 3 through 6 are our best estimates of the revenue losses that each privatized housing project would experience for the services to keep the current tenant demographic mix. We calculated these estimates using our Alternative 1 assumptions about compensations under an SSS; we chose this alternative because its straightforward redistribution minimizes compensation losses to current servicemembers with dependents. Other redistribution strategies are possible while keeping federal outlays constant, but they will likely result in more uneven effects on servicemember families.

We also assumed that half the current residents have earning spouses and averaged the estimated housing cost preferences for servicemembers with and without earning spouses.

Comparison to the costs of the 5-percent BAH reduction

These estimates differ in their intent from the payments that Congress required DOD to pay the MHPI projects in compensation for the 5-percent BAH reduction. By not having to pay rents above their new BAH rates, servicemembers choosing base housing were being fully compensated for the effective cut in allowances. In contrast, the estimates in this paper calculate the rent reduction required to attract the same paygrades to privatized housing as present. These reductions will not fully compensate servicemember families for the total reduction in pay due to an SSS.

Summary results

Table 7 shows the total annual revenue loss by military service from their privatized housing projects under an SSS. DOD-wide, our medium estimate for keeping the current tenant mix will require a revenue loss of $146 million dollars a year. That comes out to $740 per unit of privatized housing. Our low estimate is $83 million and our high estimate is $208 million per year.

Assuming that all the active-duty residents of the privatized housing projects are paying their full with-dependents BAH as rent, the annual rental revenues of the projects would be about $3.64 billion. That means that the estimated revenue losses would be 2 percent, 4 percent, and 6 percent for the low, medium, and high estimates, respectively.

Table 7. Summary of annual revenue losses by service to attract current demographics to privatized housing under an SSS with the Alternative 1 compensations

Service	Number of homes	Low annual loss estimate	Medium annual loss estimate	High annual loss estimate	Medium estimate loss per home
Army	85,788	$32,679,642	$57,189,375	$81,699,107	$667
Navy	36,295	$21,415,830	$37,477,703	$53,539,576	$1,033
Marine Corps	22,007	$11,647,286	$20,382,750	$29,118,215	$926
Air Force	52,797	$17,488,580	$30,605,015	$43,721,450	$580
Totals	**196,887**	**$83,231,340**	**$145,654,844**	**$208,078,349**	**$740**

Source: CNA.

Potential Policy Actions in Response to an SSS

Akin to the legal and financial challenges previously discussed, an SSS will pose corresponding policy challenges in both of these areas:

- What should be the new mechanism for setting servicemember rents in privatized housing?
- If the services want to keep the current tenant demographics in their privatized housing projects, how will the expected revenue shortfalls be handled?

We met with subject matter experts (SMEs) from all of the services for general discussions on these issues.

Possible mechanisms for setting rents in the absence of BAH

We met separately with each service's housing SMEs. When the potential elimination of BAH under an SSS was mentioned, all of them immediately brought up three fundamental possibilities:

- Allow the projects to charge market rents for the housing
- Provide some continued subsidies for junior paygrades and large or special needs families
- Create an algorithm or metric to replace BAH for setting rents

We will briefly discuss these three potential strategies.

Charge market rents

Permitting the partners to charge market rents for the privatized housing will maximize project revenues.

When the BAH rent cap is binding, it means that the servicemembers are effectively receiving a subsidy by choosing the privatized housing. The subsidy can be especially valuable for large, junior paygrade, and special needs families, because they receive larger homes than

their BAH could rent in the civilian community.[28] Without the BAH rent cap, the projects could charge more in rent for these units.

In some cases, the projects provide discounts to servicemembers, effectively renting the units below their full BAH rates. In these cases, the BAH is effectively above market rents and the project is forced to lower rents to attract tenants. The rent paid by these tenants is the market rent. For waterfall tenants, who have no BAH cap, all rents are market rents.

We do not know how many privatized housing units are rented at discounts, and we do not know the rents paid by waterfall tenants. Without that data, we cannot assess the effects of allowing the projects to charge market rents.

Although all the SMEs brought up this alternative, they were all torn by it. They would like to maximize the revenues to the projects to ensure high-quality maintenance and financial stability. However, they also want to protect the most vulnerable servicemember families. This option makes that tradeoff explicit.

Provide continued support for junior paygrade, large, and special needs families

Because all the SMEs are concerned about vulnerable servicemember families, they all brought up mechanisms for continuing to provide targeted rent subsidies. The suggested possibilities included capping rents for these families, as part of the renegotiated project agreements or providing another subsidy mechanism.

One such mechanism would be to use rent-differential payments to subsidize rents for vulnerable families. Rent-differential payments are one of the authorities within the MHPI enabling legislation. These payments could be funded within individual projects, by the projects as a group, or outside the projects.

Again, the SMEs were torn by the potential tradeoff between project revenues and subsidies to protect servicemembers.

[28] When choosing privatized housing, servicemembers are entitled to homes that are sized for their families. In other words, larger families can rent larger homes in privatized housing, but the rent is still capped at their BAH rates.

Create another algorithm for setting rents

All of the SMEs also suggested creating an algorithm or rent-setting metric as an alternative to BAH. The SMEs didn't necessarily want to replicate BAH; rather, they wanted to come up with an alternative mechanism for ensuring affordable rents.

Making up for revenue losses from an SSS

All of the SMEs were concerned that trying to keep the current tenant demographics under an SSS would result in lower rental revenues.

They were reluctant to accept changes to the current demographics. They brought up potential mechanisms for making up for revenue shortfalls including adding equity, additional loan subsidies and forgiveness, and service-funded rent-differential payments. However, adding funding to the MHPI projects may become a necessity under an SSS, but it is not a desired approach.

Conclusion

An SSS will pose special challenges for the military's housing privatization projects, including the elimination of BAH, reduced compensation to military families, reduced rent affordability by military families, and potential revenue losses to MHPI housing projects.

Elimination of BAH

The elimination of BAH under an SSS will require all of the MHPI agreements to be renegotiated. The services differed on their assessments of how difficult these renegotiations would be. Based on its past history of concern about the MHPI projects and BAH, Congress will likely become involved in these renegotiations as well.

Eliminating BAH will affect other government programs, such as the Post-9/11 GI Bill, administered through the Department of Veterans Affairs. Those education benefits include a housing allowance set to the E5 with-dependents BAH rate, which accounts for about half of the benefits paid.

Reduced compensation to military families

An SSS requires that servicemembers receive the same pay and allowances whether or not they have dependents. Currently, servicemembers with dependents receive higher allowances than those without dependents. The QRMC requires that SSS compensation estimates be cost neutral to the federal government. This condition means that under an SSS, single servicemembers will receive an increase in pay, while those with dependents will receive a decrease in pay.

We generated two alternative distributions of compensation under an SSS that meet these requirements. Alternative 1 estimates a fixed-dollar reduction in pre-tax compensation based on paygrade for servicemembers with dependents regardless of location. Alternative 2 estimates a 2.6 percent cut in basic pay and allowances for servicemembers with dependents.

In addition, both alternatives eliminate the current tax advantage to BAH and BAS. Taking the loss of the tax advantage into account, our estimates show a reduction in compensation to servicemember families of between 5 to 14 percent depending upon paygrade and location.

About 70 percent of the full pay reduction to military families in an SSS comes from the loss of this tax advantage.

Reduced rent affordability by military families

The reduced compensation to military families under an SSS means they would be unable to pay as much in rent. The relationship between changes in income and changes in desired rent payments is the "income elasticity of housing."

The economic literature estimates that, on average, this elasticity is 0.35. However, the elasticity does increase with household income.

The 0.35 elasticity means that if a family receives a 10 percent reduction in income, their desired rental costs will decrease by 3.5 percent.

Potential revenue losses to MHPI housing projects

Military families are the intended tenant population for the MHPI projects. For those families to continue to choose privatized housing under an SSS, their rents will need to decrease. Otherwise, their lower compensation will force them to choose lower cost and lower quality housing in the community.

If the military wants their privatized housing projects to keep the current paygrade demographic mix, they will have to reduce rents. This will result in revenue losses for the projects. Our midrange estimate for these losses to DOD as a whole is $146 million per year. This is about 4 percent of the total BAH amounts being paid in rental revenues to the privatized housing projects by military families.

Based on the differing estimates of the income elasticity of housing, those losses to the MHPI projects could be between $83 million and $208 million per year, which are 2 and 6 percent of the BAH rental revenues, respectively.

These potential losses will pose serious policy challenges to the services if they want to continue using privatized housing as a way to help junior, large, and special needs military families.

Appendix A: Methodologies for Estimating SSS Compensation Redistributions

This appendix details the methodology and assumptions used to create the Alternative 1 and Alternative 2 compensation redistributions for an SSS.

Data source and strategy

We used Defense Manpower Data Center (DMDC) data from December 2019 which contained aggregated counts of the numbers of servicemembers by paygrade and their BAH ZIP codes in the US. The data contained counts of single and married servicemembers and whether they were receiving BAH [16].

We did not directly use expenditure data. This is because DMDC expenditure data provide an incomplete picture. Many locations will show compensation levels that do not match allowance levels or basic pay levels. Presumably, servicemembers are being paid their full salary and allowances, but it may be recorded in multiple locations, especially if the servicemember was in a Permanent Change of Station (PCS) move at the time. During PCS moves, it may take a few months for pay records to catch up with servicemembers.

Instead, we used the DMDC data as a snapshot of where servicemembers are located. We then generated current compensation estimates by calculating pay and allowances as if the servicemembers were at that location and paid for the full month.[29] We calculated the servicemembers' full RMC including an estimate of the tax benefit from their allowances. This became our baseline of federal outlays that could be redistributed by an SSS.

[29] When the DMDC data indicated that servicemembers qualified for BAH, we calculated their appropriate BAH rates depending upon whether they were listed as being single or married.

Alternatives 1 and 2 redistribute this baseline of compensation among the same set of servicemembers. As long as our sample of servicemembers is representative of the military, this methodology should produce an accurate estimate of the effects of an SSS.[30]

Data concerns

We were concerned that some of the BAH ZIP codes were not US ZIP codes—they were Air/Army Post Office (APO), Diplomatic Post Office (DPO), and Fleet Post Office (FPO) ZIP codes. Because we could not match a US location with these servicemembers, we were forced to assume they were deployed and had to drop them from our data set.

The original DMDC file showed a total personnel count within the US of 1.3 million active-duty servicemembers. We matched 1.2 million or about 90 percent of those servicemembers to valid BAH MHAs. Since we used the same set of servicemembers to generate both the baseline compensation and the SSS redistributions, the results are statistically valid.

Basic methodology

An SSS requires that single and married servicemembers receive the same pre-tax pay. The first step in our methodology was to assign all single servicemembers the full with-dependents BAH rates for their paygrade and location. Doing so reveals how much federal outlays would have to increase if an SSS created equity at current levels. We found that the difference in monthly costs was $175 million per month more than our total RMC baseline.[31]

However, an SSS requires that federal outlays be cost neutral. Therefore, the aggregate pay of the 1.2 million servicemembers in that first SSS estimate would need to be reduced by $175 million. Alternatives 1 and 2 take different approaches to achieve that reduction.

Alternative 1 distribution

For Alternative 1, we reduced each servicemember's compensation by a fixed dollar amount weighted by the basic pay level for that servicemember's paygrade. This approach ensured that higher paygrades would take proportionately higher pre-tax cuts to make up for the

[30] We did not include servicemembers stationed abroad. We did not have data for them or their corresponding Overseas Housing Allowance (OHA) costs. It was also not clear how an SSS would handle OHA. Other researchers who are generating SSS estimates for the QRMC are also not including servicemembers stationed abroad, so our methodology and assumptions are consistent with theirs in this area.

[31] We made no adjustments for the value of in-kind housing received by servicemembers assigned to barracks. Our estimates assume that those imputed rents cannot be forcibly charged to servicemembers.

$175 million. However, the effects of the lost tax advantage for allowances is greater than the reduction in pre-tax pay amounts. The loss of the tax advantage accounts for about 70 percent of the overall reduction in RMC to military families and will vary by paygrade and location.

The fixed pre-tax pay cut for servicemember families allows for a straightforward summary of the effects of Alternative 1 as was expressed in Table 1.

Most single servicemembers would receive an increase in pre-tax compensation under this version of the SSS. Single servicemembers, not currently receiving BAH, will receive very large compensation increases. However, most single servicemembers, who do receive BAH, will usually find that the lost tax advantage is larger than the nominal pay increase.

Alternative 2 distribution

Instead of reducing each servicemember's compensation by a fixed dollar amount, Alternative 2 takes a fixed percentage to make up for the $175 million. Alternative 2 subtracts 2.64 percent of the pre-tax pay and allowances from all of the 1.2 million servicemembers in our sample. As a result, federal outlays come out neutral; however, married servicemembers in high-cost areas would receive a higher absolute dollar reduction in compensation from the Alternative 2 SSS redistribution.

Underlying assumptions

Both Alternatives 1 and 2 make an underlying assumption that should be noted. They implicitly assume that the current BAH rates are appropriate adjustments for the different costs of living at locations within the US.

In the SSS analytical effort, there were discussions about using other locality cost metrics, including the Office of Personnel Management (OPM) Locality Pay. Using the OPM Locality Pay adjustments would produce radically varying impacts on servicemember pay and privatized housing revenues because the OPM Locality Pay is not a cost-of-living adjustment, but a cost-of-hiring adjustment. It measures how much it costs the government to hire a local employee and can produce very different results from the current BAH rates.

For example, Hawaii has one of the highest housing costs and BAH rates in the US (the E5 with-dependents monthly BAH rate is $2,913 in Honolulu County). However, its OPM Locality Pay adjustment is only 19.56 percent compared with 15.95 percent for OPM's "Rest of United States" adjustment. Houston, Texas, which has relatively inexpensive housing (the E5 with-dependents BAH rate is $1,692), has an OPM Locality Pay adjustment of 33.32 percent [17-18].

We chose to use current BAH rates as our implicit cost-of-living metric because it is consistent with current DOD practices. If we had used the OPM Locality Pay adjustments, it would have produced unrealistically severe effects on privatized housing revenues at many locations.

Value of in-kind barracks housing

Both alternatives also assume that no rent can be forcibly charged to single servicemembers assigned to barracks. Matching their compensation levels with those receiving BAH means that they will receive large pay increases under an SSS.

Appendix B: Estimates of Revenue Losses under Alternative 2

Tables 8 through 12 contain estimates of the revenue losses to privatized housing using the Alternative 2 compensation distributions for an SSS. Both Alternatives 1 and 2 satisfy the QRMC's rules for an SSS, but they meet these requirements differently. Alternative 2 reduces the pre-tax basic pay and allowances for military families by a straight 2.64 percent regardless of paygrade or location. Alternative 1 reduces pre-tax basic pay allowances by a fixed absolute dollar amount based only on paygrade. Both Alternatives 1 and 2 eliminate the current tax advantages of servicemember allowances.

These tables correlate with Tables 3 through 7 in the main text, except that they use the Alternative 2 assumptions. As we did in those previous tables, we include low, medium, and high estimates of revenue losses, depending on the predominant range of estimates of the income elasticity for housing in the economic literature. Elasticity estimates also depend on household incomes. We averaged the expected reductions among servicemembers with and without earning spouses.

Tables 8 through 11 show the predicted monthly revenue reductions for privatized housing projects for the Army, Navy, Marine Corps, and Air Force, respectively. These are estimated losses necessary to retain the current tenant demographic mix under an SSS.

Table 12 provides estimates of the annual revenue losses by service and military-wide.

Table 8. Estimated monthly revenue losses to Army privatized housing projects under an SSS using the Alternative 2 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Aberdeen Proving Ground	775	$12,825	$22,443	$32,061	$29
Carlisle Barracks / Picatinny Arsenal	348	$14,785	$25,873	$36,961	$74
Fort Belvoir	2,094	$125,262	$219,208	$313,154	$105

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Fort Benning	4,001	$96,058	$168,101	$240,144	$42
Fort Bliss / White Sands MR	4,586	$108,049	$189,085	$270,122	$41
Fort Bragg	5,959	$131,630	$230,352	$329,074	$39
Fort Campbell	4,452	$116,337	$203,590	$290,843	$46
Fort Carson	3,376	$111,312	$194,797	$278,281	$58
Fort Detrick / Walter Reed	585	$10,584	$18,523	$26,461	$32
Fort Drum	3,779	$109,945	$192,405	$274,864	$51
Fort Eustis / Story	1,126	$34,791	$60,884	$86,977	$54
Fort Gordon	1,068	$21,451	$37,540	$53,628	$35
Fort Hamilton	221	$11,644	$20,377	$29,109	$92
Fort Hood[a] (including Liberty Village)	5,397	$105,415	$184,476	$263,537	$34
Fort Huachuca / Yuma PG	1,264	$22,062	$38,609	$55,156	$31
Fort Irwin / Moffett / Parks[b]	2,879	$91,667	$160,417	$229,167	$56
Fort Jackson	850	$21,607	$37,813	$54,019	$44
Fort Knox	2,379	$38,354	$67,120	$95,886	$28
Fort Leavenworth	1,680	$38,300	$67,025	$95,750	$40
Fort Lee	1,485	$42,056	$73,598	$105,140	$50
Fort Leonard Wood	1,802	$27,315	$47,802	$68,289	$27
Fort Lewis / McChord AFB	5,098	$211,613	$370,323	$529,032	$73
Fort Meade	2,615	$95,368	$166,894	$238,420	$64

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Fort Polk	3,639	$62,225	$108,894	$155,563	$30
Fort Riley	3,820	$79,501	$139,126	$198,752	$36
Fort Rucker	1,401	$25,216	$44,128	$63,040	$31
Fort Sam Houston	912	$28,763	$50,335	$71,908	$55
Fort Shafter[c]	7,704	$580,964	$1,016,687	$1,452,409	$132
Fort Sill	1,808	$33,069	$57,871	$82,673	$32
Fort Stewart[d]	3,238	$79,508	$139,140	$198,771	$43
Fort Wainwright[e]	1,926	$77,643	$135,876	$194,108	$71
Presidio of Monterey[f]	2,355	$101,286	$177,251	$253,216	$75
Redstone Arsenal	354	$1,825	$3,194	$4,563	$9
West Point	812	$45,257	$79,200	$113,142	$98
Total	**85,788**	**$2,700,864**	**$4,748,954**	**$6,784,220**	**$55**

Sources: [11-12] and CNA.

[a] It was not clear from [12] whether the number of units available at Fort Hood housing included Liberty Village, so the number of homes in this entry may be an undercount. However, the estimated monthly losses do include the residents of Liberty Village.

[b] Reference [12] grouped Fort Irwin with Moffett Field and Camp Parks. Reference [11] provided data on occupants from Fort Irwin, but we were unable to distinguish between occupants from Moffett Field and Camp Parks. Since Moffett Field and Camp Parks have different BAH rates, we used averages to estimate revenue losses for Moffett Field and Camp Parks.

[c] Although reference [11] lists its occupancy numbers as being for homes at Fort Shafter only, additional data, including reference [12], suggest that these numbers most likely include Army privatized housing occupancy throughout Hawaii. Therefore, we believe the monthly loss estimates likely include all Army housing in Hawaii.

[d] Monthly loss estimates for Fort Stewart may also include Hunter Army Air Field. The number of homes listed includes both installations.

[e] Monthly loss estimates for Fort Wainwright may also include Fort Greely. The number of homes listed includes both installations.

[f] Reference [12] listed the Presidio of Monterey combined with the Naval Postgraduate School, so the "number of homes" may be overstated. However we calculated the estimate of monthly losses for the Presidio of Monterey itself.

Table 9. Estimated monthly revenue losses to Navy privatized housing projects under an SSS using the Alternative 2 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Anacostia	217	$11,846	$20,730	$29,615	$96
Annapolis	253	$10,716	$18,752	$26,789	$74
Charleston	877	$25,132	$43,981	$62,830	$50
China Lake	192	$3,785	$6,624	$9,463	$35
Colts Neck	84	$4,480	$7,840	$11,199	$93
Corpus Christi	257	$7,018	$12,281	$17,544	$48
Dahlgren	184	$4,506	$7,885	$11,264	$43
El Centro	98	$1,890	$3,308	$4,726	$34
Everett	141	$7,780	$13,615	$19,449	$97
Fallon	188	$2,980	$5,215	$7,450	$28
Ft Worth	82	$3,080	$5,389	$7,699	$66
Great Lakes	1,141	$44,622	$78,089	$111,556	$68
Gulfport	550	$9,865	$17,263	$24,662	$31
Hampton Roads	4,208	$146,531	$256,430	$366,328	$61
Indian Head	136	$5,440	$9,520	$13,600	$70
Ingleside	104	$86	$151	$215	$1
Jacksonville	302	$11,160	$19,530	$27,900	$65
Crane	11	$270	$473	$676	$43
Kauai	54	$2,041	$3,572	$5,103	$66
Key West	715	$35,933	$62,883	$89,833	$88
Kings Bay	431	$9,313	$16,298	$23,283	$38
Kingsville	102	$1,856	$3,248	$4,640	$32
Kitsap	1,699	$68,476	$119,833	$171,190	$71

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Lakehurst	98	$2,830	$4,953	$7,075	$51
Lemoore	1,628	$41,984	$73,472	$104,961	$45
Mayport	829	$27,711	$48,495	$69,278	$58
Mechanicsburg	31	$1,240	$2,170	$3,099	$70
Meridian	161	$2,686	$4,700	$6,715	$29
Midsouth	280	$7,699	$13,473	$19,248	$48
Mitchel	189	$11,968	$20,944	$29,919	$111
New London	1,297	$39,318	$68,806	$98,294	$53
New Orleans	834	$19,898	$34,821	$49,745	$42
Newport	644	$31,431	$55,005	$78,578	$85
Oahu	4,392	$334,885	$586,050	$837,214	$133
Panama City	49	$1,676	$2,934	$4,191	$60
Patuxent River	735	$20,345	$35,604	$50,863	$48
Pensacola	538	$11,672	$20,425	$29,179	$38
Portsmouth, NH	210	$9,842	$17,224	$24,606	$82
San Diego	9,096	$680,279	$1,190,489	$1,700,699	$131
Saratoga	150	$3,009	$5,266	$7,523	$35
Seal Beach	185	$14,837	$25,965	$37,094	$140
Ventura	1,223	$81,572	$142,752	$203,931	$117
Whidbey Island	1,493	$65,074	$113,879	$162,685	$76
Whiting Field	207	$2,256	$3,947	$5,639	$19
Totals	**36,295**	**$1,831,019**	**$3,204,284**	**$4,577,548**	**$88**

Sources: [13] and CNA.

Table 10. Estimated monthly revenue losses to Marine Corps privatized housing projects under an SSS using the Alternative 2 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Albany	110	$1,864	$3,262	$4,659	$30
Beaufort	1,450	$45,578	$79,762	$113,945	$55
Bridgeport	111	$2,645	$4,629	$6,614	$42
Lejeune	4,933	$101,149	$177,010	$252,871	$36
Pendleton	7,718	$509,305	$891,283	$1,273,262	$115
Cherry Point	1,450	$26,009	$45,515	$65,022	$31
Chicopee	124	$3,946	$6,906	$9,866	$56
Kansas City	76	$2,041	$3,572	$5,103	$47
Hawaii	2,522	$210,903	$369,081	$527,258	$146
Quantico	1,137	$48,963	$85,685	$122,406	$75
San Diego	5	$321	$563	$804	$113
Stewart	171	$3,932	$6,881	$9,829	$40
Twentynine Palms	2,200	$39,937	$69,889	$99,842	$32
Totals	**22,007**	**$996,592**	**$1,744,037**	**$2,491,481**	**$79**

Sources: [13] and CNA.

Table 11. Estimated monthly revenue losses to Air Force privatized housing projects under an SSS using the Alternative 2 compensation distributions

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Academy	663	$8,462	$14,809	$21,156	$22
Altus	529	$5,828	$10,199	$14,570	$19
Andrews	1,091	$40,733	$71,283	$101,833	$65
Arnold	22	$461	$807	$1,154	$37
Barksdale	1,090	$19,565	$34,239	$48,913	$31
Beale	509	$23,299	$40,773	$58,247	$80
Bolling	815	$41,526	$72,671	$103,815	$89
Buckley	351	$16,927	$29,623	$42,319	$84
Cannon	1,038	$19,630	$34,353	$49,076	$33
Cavalier	14	$324	$566	$809	$40
Charleston	559	$16,938	$29,641	$42,345	$53
Columbus	453	$6,834	$11,959	$17,084	$26
Davis-Monthan	1,173	$25,111	$43,945	$62,778	$37
Dover	982	$22,296	$39,017	$55,739	$40
Dyess	402	$1,893	$3,312	$4,732	$8
Dyess (ACC III)	674	$13,829	$24,201	$34,573	$36
Edwards	735	$29,376	$51,408	$73,440	$70
Eglin	853	$24,198	$42,346	$60,494	$50
Eielson	901	$30,186	$52,825	$75,465	$59
Ellsworth	500	$11,926	$20,870	$29,814	$42
Fairchild	641	$16,848	$29,484	$42,120	$46
FE Warren	748	$14,938	$26,142	$37,346	$35
Goodfellow	241	$6,212	$10,872	$15,531	$45

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Grand Forks	547	$13,687	$23,953	$34,219	$44
Hanscom	1,462	$50,852	$88,992	$127,131	$61
Hickam	2,485	$176,944	$309,651	$442,359	$125
Hill	1,089	$26,972	$47,200	$67,429	$43
Holloman	1,061	$16,214	$28,375	$40,536	$27
Hurlburt	379	$11,758	$20,577	$29,396	$54
JBER I	828	$22,011	$38,520	$55,029	$47
JBER II	1,194	$41,064	$71,862	$102,660	$60
JBER III	1,240	$49,527	$86,672	$123,816	$70
Keesler Main	841	$15,659	$27,403	$39,147	$33
Keesler NDSU	325	$2,317	$4,054	$5,792	$12
Kirtland	1,301	$22,764	$39,838	$56,911	$31
Lackland	874	$25,405	$44,459	$63,513	$51
Langley	1,430	$48,044	$84,077	$120,109	$59
Laughlin	451	$6,214	$10,875	$15,536	$24
Little Rock	989	$11,874	$20,779	$29,684	$21
Los Angeles	615	$25,441	$44,522	$63,603	$72
Luke	550	$16,482	$28,844	$41,205	$52
MacDill	549	$23,791	$41,634	$59,478	$76
Malmstrom	1,116	$18,662	$32,659	$46,656	$29
Maxwell	511	$9,854	$17,244	$24,634	$34
McConnell	381	$8,388	$14,679	$20,970	$39
Minot	1,438	$31,938	$55,892	$79,846	$39
Moody	287	$5,079	$8,888	$12,696	$31

Installation	Number of homes	Low monthly loss estimate	Medium monthly loss estimate	High monthly loss estimate	Medium estimate loss per home
Moody (ACC III)	101	$2,219	$3,884	$5,549	$38
Mt. Home	844	$17,010	$29,768	$42,525	$35
Nellis	1,180	$36,604	$64,057	$91,510	$54
Offutt	1,867	$23,566	$41,240	$58,915	$22
Patrick	616	$11,570	$20,248	$28,926	$33
Peterson	669	$22,847	$39,982	$57,117	$60
Randolph	317	$9,484	$16,597	$23,710	$52
Robins I[a]	672	$2,091	$3,659	$5,228	$5
Robins II[a]	254	$5,722	$10,013	$14,305	$39
Schriever	242	$7,769	$13,595	$19,422	$56
Scott	1,593	$32,222	$56,388	$80,555	$35
Seymour Johnson	686	$13,508	$23,639	$33,769	$34
Shaw	632	$12,905	$22,583	$32,261	$36
Sheppard	708	$10,817	$18,929	$27,042	$27
Tinker	642	$8,524	$14,917	$21,310	$23
Travis	1,260	$77,814	$136,175	$194,536	$108
Tyndall[b]	N/A	N/A	N/A	N/A	N/A
Vance	242	$3,811	$6,670	$9,529	$28
Vandenberg	991	$38,090	$66,658	$95,226	$67
Whiteman	890	$15,793	$27,638	$39,483	$31
Wright-Patterson	1,464	$16,417	$28,730	$41,043	$20
Totals	**52,797**	**$1,447,066**	**$2,532,366**	**$3,617,666**	**$48**

Sources: [14-15] and CNA.

[a]The large differences in the estimated losses and losses per housing unit between Robins I and II are due to the large differences in the numbers of current waterfall tenants in the two projects.

[b] Tyndall housing does not appear to be in use currently due to the effects of Hurricane Michael in 2018.

Table 12. Summary of annual revenue losses by service to attract current demographics to privatized housing under an SSS with the Alternative 2 compensations

Service	Number of homes	Low annual loss estimate	Medium annual loss estimate	High annual loss estimate	Medium estimate loss per home
Army	85,788	$32,564,256	$56,987,448	$81,410,640	$664
Navy	36,295	$21,972,231	$38,451,404	$54,930,578	$1,059
Marine Corps	22,007	$11,959,110	$20,928,442	$29,897,775	$951
Air Force	52,797	$17,364,792	$30,388,392	$43,411,992	$576
Totals	**196,887**	**$83,860,389**	**$146,755,687**	**$209,650,984**	**$745**

Source: CNA.

Tables

Abbreviations

APO	Air/Army Post Office
BAH	Basic Allowance for Housing
BAS	Basic Allowance for Subsistence
CBO	Congressional Budget Office
DMDC	Defense Manpower Data Center
DOD	Department of Defense
DPO	Diplomatic Post Office
MHA	Military Housing Area
MHPI	Military Housing Privatization Initiative
OHA	Overseas Housing Allowance
QRMC	Quadrennial Review of Military Compensation
RMC	Regular Military Compensation
SME	Subject Matter Expert
SSS	Single-Salary System
VA	Department of Veterans Affairs

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