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MEMORANDUM

To: Jon Reiner, Town of Groton, CT
 From: Camoin Associates
 Date: 4/17/2018
 Re: **Impact of Naval Submarine Base New London on Town of Groton Demographics**

Camoin Associates has been engaged to assist the Town of Groton in understanding the impact of the presence of Naval Submarine Base New London on the Town’s demographic and socioeconomic profile. The significant presence of active duty military personnel in the Town affects demographic data, such as population, household income, consumer spending, and other indicators that retailers and other consumer-oriented businesses use to make location decisions. The purpose of this analysis is to assist the Town in distinguishing between military and civilian resident characteristics and communicating the results to various stakeholders.

Summary of Findings

Common consumer demographic information for a community such as median income is typically reported for *households* and ignores any population occupying group quarters. Thus, it is important to distinguish between group quarters and household populations. A group quarters is a place where people live or stay, in a group living arrangement, that is owned or managed by an entity or organization providing housing and/or services for the residents. Active duty Navy personnel living on-base in barracks are group quarters residents and are not included in household-specific data. A household includes all people who occupy a housing unit, which may be a house, an apartment, or any other space occupied as separate living quarters. Navy personnel and their dependents who live in public private venture (PPV) housing (i.e. the eight neighborhoods in Groton operated by Balfour Beatty Communities) or ordinary housing in the community lived in households.

Table 1

Summary Table, Groton Resident Population and Income, 2016			
	Military + Dependents	Civilian	Total
Population	10,743	29,020	39,763
Household Population	8,540	27,998	36,538
Group Quarters Population	2,202	1,023	3,225
Households	2,829	13,222	16,051
Aggregate Household Income	\$ 217,922,210	\$ 1,125,931,714	\$ 1,343,853,924
Average Household Income	\$ 77,025	\$ 85,158	\$ 83,724

Note: Numbers may not sum due to rounding.

The military population, including dependents, comprises approximately 27% of the town’s population, with civilians making up the remaining 73%. The majority of the military population lives in households (79%), with the remaining share occupying on-base barracks housing. Most civilians live in households, with about 1,000 (3.5%) living in non-military-related group quarters, such as nursing care facilities,



residential treatment centers, or group homes. Of Groton's 16,051 households, 18% are military households and 82% are civilian households. See Table 1.

The overall average household income for Groton is \$83,724. We estimate average income for military households to be \$77,025, and \$85,158 for civilian households. We emphasize that the figure for military households excludes all personnel living on-base in barracks. Unlike personnel residing in households, these personnel do not receive a basic allowance for housing (BAH) and therefore have significantly lower earnings.

We stress that these are figures for *average* household income and not *median* household income. According to ACS, the overall 2016 median household income for Groton is \$64,074, compared to the average of \$83,724. Due to data limitations, median household income for civilian and military households cannot be reliably calculated.

The key conclusion from this analysis is that there is only a marginal difference between military and civilian household income. Moreover, due to data limitations, this difference is likely overstated because our estimation of military household income excludes any income earned from non-military sources, e.g. income earned by a civilian spouse. The methodology used to arrive at these estimates is explained in detail in this memo.

Estimating Active Duty Military Personnel

According to the 2016 Department of Defense Demographics of the Military Community report, there are 6,292 activity duty service members stationed at the Sub Base, along with 7,597 dependents. Dependents include spouses of military members, children, and other adult dependents such as parents.

Table 2

Naval Submarine Base New London Population	
Active Duty Service Members	6,292
Dependents	7,597
Total Personnel	13,889

Source: Department of Defense, Demographics of the Military Community 2016

Approximately 35% of service members live on base in barracks, 30% in public private venture (PPV) housing, and 35% in ordinary housing in the local community. There are 1,888 PPV units in Groton across eight neighborhoods operated by Balfour Beatty Communities.¹ Community housing may be located in Groton or elsewhere. Table 3 estimates the number of service members by housing type.

Table 3

Active Duty Service Members by Housing Type		
	Pct.	Count*
On Base - Barracks	35%	2,202
PPV Housing	30%	1,888
Community Housing	35%	2,202
Total	100%	6,292

*Estimate based on total active duty population
 Source: Department of Defense, NSB New London My Base Guide, Camoin Associates

¹ PPV neighborhoods include: Cherry Circle, Conning Towers, Dolphin Gardens, Nautilus Park (I, II, and III), Polaris Park, and Trident Park.



Military and Civilian Population

The Census divides the population within a geographic unit into two categories: population living in group quarters and population living in households. A group quarters is a place where people live or stay, in a group living arrangement, that is owned or managed by an entity or organization providing housing and/or services for the residents. A household includes all people who occupy a housing unit, which may be a house, an apartment, or any other space occupied as separate living quarters. Common demographic statistics for a community such as median income are often reported for all households and ignore any population occupying group quarters. Thus, it is important to distinguish between group quarters and household populations. Table 4 shows how the different military housing types are classified into these two categories. Barracks are considered group quarters, so any income earned by active duty members occupying barracks is not considered in the town's average household income. Most of the individuals that live on-base in group quarters are primarily 18-to-25-year-old sailors just out of boot camp and in Groton for training at the Submarine Learning Center and the Naval Submarine School. In contrast, military personnel occupying PPV housing or community housing are considered as part of the household population.

We assume that the 2,202 occupants of barracks do not live with dependents. This means that all dependents are associated with the remaining 4,090 occupants of PPV and community housing. There are a total of 7,597 dependents, or 1.86 dependents per active duty service member (excluding those in barracks). Dependents are assigned to these service members as shown in Table 4.

Data was not available on the share of community housing residents that live in communities outside of Groton. We assume this share to be 50% and note that it does not have a significant impact on the analysis. In total, we estimate 5,191 active duty members and 5,552 dependents living in Groton.

Table 4

Military Population by Housing Classification			
	Active Duty	Dependents	Total
Groton	5,191	5,552	10,743
In Group Quarters	2,202	-	2,202
Barracks	2,202	-	2,202
In Households	2,989	5,552	8,540
PPV Housing	1,888	3,506	5,394
Community Housing	1,101	2,045	3,146
Outside of Groton	1,101	2,045	3,146
Total	6,292	7,597	13,889

Note: Numbers may not sum due to rounding.

Source: Department of Defense, NSB New London My Base Guide, Camoin Associates



Groton’s population is summarized in Table 5. Active duty military represent an estimated 13% of the population, and dependents another 14%. Civilians make up 73% of the population, split between veteran and nonveterans.² There are 3,644 veterans (9% of the total population) in the town and 25,376 nonveterans (64% of the total population).

Table 5

Groton Military and Civilian Population		
	Count	Pct. of Total
Groton Total Population	39,763	100%
Active Duty Military	5,191	13%
Dependents	5,552	14%
Civilians	29,020	73%
Veterans	3,644	9%
Nonveterans	25,376	64%

Source: ACS 2012-2016, Camoin Associates

Households

The breakdown of military and civilian households in Groton was estimated based on the number of dependents as reported by the Department of Defense and the total number of Groton households according to the American Community Survey (ACS). We define a “military household” as any household in Groton consisting of at least one active duty service member. Any household that is not a military household is considered to be a “civilian household.”

As mentioned previously, there are 1.86 dependents per active duty service member living in a household (i.e. excluding those in barracks), or 2.86 total personnel per service member. To account for the possibility of multiple service members living in a single household (e.g. a dual-military marriage), an adjustment was made based on the national statistic that 10.7% of active duty service members who are not both single and childless are married to other service members.^{3, 4} Therefore, the average military household size in Groton is approximately 3.02. As shown above in Table 4, there are 8,540 service members and dependents living in Groton *households*. Multiplying this figure by the average household size of 3.02 yields an estimated 2,829 military households in Groton. According to ACS, there are a total of 16,051 households in Groton, so we consider the remaining 13,222 households to be civilian households.⁵ This information is summarized in Table 6.

² We emphasize that for the purposes of this analysis, military dependents are not considered to be civilians since they are sponsored by an active duty service member,

³ Department of Defense. 2016 Demographics: Profile of the Military Community.

⁴ In general, we assume one active duty service member per military household. However, since 10.7% of active duty Navy service members who are not both single and childless are married to another service member, we assume that these individuals are members of the same household. Stated another way, 5.3% of Navy households are assumed to contain two service members, and thus, each Navy households consists of an average of 1.05 service members.

⁵ Note that civilian households comprise 82% of all households in Groton, whereas the civilian population accounts for 73% of the overall population of the Town. A primary reason for this difference is that military personnel living in barracks are excluded from the count of households.



Table 6

Groton Military and Civilian Households	
Total Personnel per Service Member*	2.86
Avg. Service Members per Household**	1.06
Avg. Military Household Size	3.02
Active Duty Military and Dependents in Households	8,540
Military Households	2,829
Total Households	16,051
Civilian Households	13,222

*Includes service member + 1.86 dependents.

**Calculated based on the national statistic that 10.7% of service members who are not both single and without children are in a dual-military marriage.

Source: Department of Defense, ACS 2012-2016, Camoin Associates

Income

According to Economic Modeling Specialists Intl. (EMSI),⁶ the 2016 average earnings per military member in Groton is \$56,215. Included in these earnings is the Basic Allowance for Housing (BAH). The BAH is a U.S.-based allowance prescribed by geographic duty location, pay grade, and dependency status. It provides service members equitable housing compensation based on housing costs in local civilian housing markets within the United States when government quarters are not provided. The BAH for the New London area ranges from \$1,080 to \$2,613 per month, depending on pay grade and presence of dependents.⁷ On an annual basis, this equates to \$12,960 to \$31,356.

In order to better estimate household military and civilian income for Groton, the average military earnings figure from EMSI was adjusted to account for the difference in earnings between service members living in barracks and those living in households, as well as to exclude earnings from service members who live in community housing outside of Groton.

Because service members living in on-base barracks housing do not receive BAH, their total earnings are significantly lower than those living in households and receiving BAH. On-base barracks housing is typically available to personnel ranked E-4 and below; therefore, we estimate average earnings for barracks service members based on the military pay scale for E-1 to E-4 ranks, which ranges from about \$1,600 to \$2,600 per month. We use the average of this range to estimate annual earnings for barracks service members at approximately \$25,200. Using this figure and overall service member average earnings of \$56,215, we back into a figure for average earnings of service members living in households (i.e. PPV or community housing) of \$72,915 (including BAH).

One further adjustment is needed to exclude earnings from non-Groton residents. Excluding those members living off-base in other communities, average earnings for active duty members living in Groton are estimated at \$52,672.

⁶ <http://www.economicmodeling.com/>

⁷ <https://militarybenefits.info/bah-rates-state/connecticut/>



Table 7 calculates total military and civilian income in the Town of Groton based on per capita income figures from ACS and adjusted military earnings from EMSI. Of the total \$1.42 billion of income earned by Groton residents, \$273 million (19%) is estimated to be paid to active duty military and the remaining \$1.15 billion (81%) is estimated to be civilian income.

Table 7

Groton Military and Civilian Income	
Groton Total Population	39,763
Groton Per Capita Income	\$ 35,810
Total Income	\$ 1,423,913,030
Active Duty Military	5,191
Average Military Income	\$ 52,672
Total Military Income	\$ 273,417,650
Total Civilian Income	\$ 1,150,495,380

Note: Values may not total due to rounding.

Source: Department of Defense, ACS, EMSI, Camoin Associates

To ultimately arrive at a household income figure for both military and civilian households, income earned by those living in group quarters (both military and civilian) must be excluded. After this adjustment, total civilian household income is equal to approximately \$1.13 billion. Divided among the town's 13,222 civilian households, average civilian household income equals \$85,158. Using this figure and the overall *average* household income for the town of \$83,724 from ACS, we back into an average military household income of \$77,025. Stated again, the average military household in Groton living in PPV or community housing has an annual income of \$77,025 (including BAH), about 11% lower than that of a civilian household.⁸

Table 8

Average Household Income	
Total Civilian Income	\$ 1,150,495,380
Civilian Household Income*	\$ 1,125,931,714
Civilian Households	13,222
Avg. Civilian Household Income	\$ 85,158
Avg. Military Household Income	\$ 77,025
Avg. Household Income	\$ 83,724

*Deducts income from civilians living in group quarters

Note: Values may not total due to rounding.

Source: ACS, Camoin Associates

⁸ Note that these are figures for *average* household income and not *median* household income. According to ACS, the overall 2016 median household income for Groton is \$64,074, compared to the average of \$83,724. Due to data limitations, median household income for civilian and military households cannot be reliably calculated.



Discussion

An important data note is that some portion of total civilian household income consists of income earned by dependents of active duty personnel, e.g. military spouses who are employed in civilian positions. Due to data availability limitations, this methodology allocates this income to civilian households whereas ideally it would be part of military household income. According to national data from the Department of Defense, 45% of Navy spouses are employed, meaning that Groton military household income from civilian sources could be significant. As a result, the difference between military and civilian average household income is potentially overstated.

It may seem counterintuitive that there is such a small difference between military and civilian household income given the perception in town that military personnel receive relatively low pay. Some of the factors explaining the difference have been discussed above:

- The lowest-ranking personnel live in on-base barracks and are therefore excluded from household income statistics.
- For military personnel living off-base, basic allowance for housing (BAH) is included in household income data.⁹

Another factor contributing to the small difference is the range of socioeconomic circumstances exhibited by civilian households. Whereas, by definition, all military households have at least one worker with earnings, this is not true for civilian households. Only about 76% of civilian households have income from job earnings; the remaining households rely on income from other sources including social security, retirement income, supplemental security income, or other public benefits. Households with these income sources generally have comparably lower overall incomes, which pulls down the civilian household average.

⁹ Note that in the 2011 income analysis conducted by seCTer, a per capita income for Navy personnel of \$21,195 was used, suggesting that basic allowance for housing may not have been accounted for. As a result, the seCTer analysis may have understated military income and overstated civilian income.