

## SUPPORTING STATEMENT – PART B

### B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

**UPDATE 2/21/2024: Document has been updated to include the Reserve population on the SFIS.**

If the collection of information employs statistical methods, it should be indicated in Item 17 of OMB Form 83-I, and the following information should be provided in this Supporting Statement:

#### 1. Description of the Activity

The population of interest for the Spouse and Family Issues Survey (SFIS) consists of spouses of active duty **and Reserve members** from the Army, Navy, Marine Corps, Air Force and **Space Force** who are below flag rank. In addition, for the spouse to remain eligible for the survey, they must indicate they are currently married to an active duty **or Reserve** member at the time of the survey. Attachments A and B contain tables with the number of individuals in the population and sample by strata. The expected weighted response rate for this survey is 20%.

#### 2. Procedures for the Collection of Information

##### a. Statistical methodologies for stratification and sample selection:

As described above, OPA uses a sampling tool developed by the Research Triangle Institute (RTI) to determine the sample size needed to achieve 95% confidence and an associated precision of 5% or less on each reporting category domains. We select a single-stage, non-proportional stratified random sample to ensure a statistically adequate expected number of responses for the reporting domains. For the SFIS, OPA uses Service, paygrade, gender, and family status to define the initial strata. We collapse these strata when there are fewer than 200 individuals in the stratum. Once OPA determines the stratum-level sample sizes, a random number is assigned to every member of the population and the population is sorted by stratum and random number prior to sampling, which results in a randomly-ordered population within each stratum. We then select the appropriate number of spouses from each stratum.

##### b. Estimation procedures:

OPA weights the eligible respondents in order to make inferences about the entire population of active duty **and Reserve** spouses. The weighting methodology utilizes standard

weighting processes. First, we assign a base weight to the sampled member based on the reciprocal of the selection probability. Second, OPA uses 20-30 administrative variables in the XGBoost application of Generalized Boosted Model (GBM) to predict survey eligibility and completion. OPA's accurate and detailed administrative data on both survey respondents and non-respondents provides confidence in our survey estimates. We adjust the sampling weights and then all prior-stage weights by the inverse of these model-predicted probabilities to adjust for nonresponse. Finally, we rake these adjusted weights to known population totals to further reduce the variance and bias of the estimates.

c. Degree of accuracy needed for the Purpose discussed in the justification:

OPA forms variance strata by collapsing sampling strata to achieve about 50 respondents within each variance stratum. OPA computes variance estimates within variance strata so precision measures can be associated with each estimate. We produce precision measures for reporting categories using 95% confidence intervals with the goal of achieving a precision of 5% or less (e.g., 80% (+/- 5%) of spouses of Army E1-E4 are satisfied with their job).

d. Unusual problems requiring specialized sampling procedures:

OPA recognizes the response rates vary for certain domains of interest such as Service and paygrade. To account for this, we will average the response rates for the last three Active Duty and Reserve Spouse Surveys (same population as the SFIS) at the stratum level and use these response rates in the sampling tool to create the SFIS sample and compute expected numbers of respondents within domains of interest.

e. Use of periodic or cyclical data collections to reduce respondent burden:

This is the first administration of the SFIS. There aren't any surveys within the DoD that assess the issues on this survey.

3. Maximization of Response Rates, Non-response, and Reliability

To maximize response rates, OPA offers the survey via the Web and provides a paper survey option. Reminder letters and emails to non-respondents are used to maximize response rates. To reduce respondent burden, web-based surveys use "smart skip" technology to ensure respondents only answer questions that are applicable to them. To ensure the accuracy and reliability of responses, OPA conducts nonresponse adjustments as part of the weighting process. The results for the 2021 Active Duty Spouse **Survey and 2023 Reserve Component Spouse Survey** are useful in that the response expectations and survey methodology mirror the SFIS. Nonresponse adjustments are contained in the 2019 ADSS Statistical Methodology Report and are available on request: *Office of People Analytics. (August 2020). 2019 Survey of Active Duty Spouses: Statistical Methodology Report. (OPA Report No. 2020-050). Alexandria, VA.*

To increase response rates, individual QR codes will be included on the postal letters, offering a quick mechanism for respondents to access and complete the survey via their mobile device.

4. Tests of Procedures

Not applicable

5. Statistical Consultation and Information Analysis

a. Provide names and telephone number of individual(s) consulted on statistical aspects of the design.

Dr. Matthew Scheidt, Team Lead; Statistical Methods Team, Methods, Analysis, and Systems Support, Office of People Analytics (OPA); matthew.s.scheidt.civ@mail.mil.

b. Provide name and organization of person(s) who will actually collect and analyze the collected information.

The data will be collected by Data Recognition Corporation (DRC), which is OPA’s operations contractor. Ms. Valerie Waller is the Senior Managing Director at DRC.

The data will be analyzed by OPA analysts. Monica Wiedemann, Robin Myers, and contractors Jason Haynes, and Amy Campbell are the lead operations analysts.

Attachment A. 2023 ADSS - Population and Sample Size by Strata

Stratum	Stratum Definitions	Population Size	Sample Size
All	Total	636,399	65,000
1	001 ARMY__E1-E4+E0__MALE+UNK__Mar+Child	19926	2839
2	002 ARMY__E1-E4+E0__MALE+UNK__MarNoChild	20694	2810
3	003 ARMY__E1-E4+E0__FEMALE__Mar+Child	3804	655
4	004 ARMY__E1-E4+E0__FEMALE__MarNoChild	6301	1101
5	005 ARMY__E5-E6__MALE+UNK__Mar+Child	49814	3072
6	006 ARMY__E5-E6__MALE+UNK__MarNoChild	22550	1359
7	007 ARMY__E5-E6__FEMALE__Mar+Child	5319	395
8	008 ARMY__E5-E6__FEMALE__MarNoChild	4925	398
9	009 ARMY__E7-E9__MALE+UNK__Mar+Child	31309	2374
10	010 ARMY__E7-E9__MALE+UNK__MarNoChild	6924	514
11	011 ARMY__E7-E9__FEMALE__Mar+Child	2404	223

12	012 ARMY__E7-E9__FEMALE__MarNoChild	1162	104
13	013 ARMY__W1-W5+W0__MALE+UNK__Mar+Child	9070	424
14	014 ARMY__W1-W5+W0__MALE+UNK__MarNoChild	2260	106
15	015 ARMY__W1-W5+W0__FEMALE__Mar+Child	545	29
16	016 ARMY__W1-W5+W0__FEMALE__MarNoChild	308	21
17	017 ARMY__O1-O3+O0__MALE+UNK__Mar+Child	11452	1038
18	018 ARMY__O1-O3+O0__MALE+UNK__MarNoChild	7424	650
19	019 ARMY__O1-O3+O0__FEMALE__Mar+Child	1751	189
20	020 ARMY__O1-O3+O0__FEMALE__MarNoChild	2686	271
21	021 ARMY__O4-O6__MALE+UNK__Mar+Child	17317	1077
22	022 ARMY__O4-O6__MALE+UNK__MarNoChild	3930	239
23	023 ARMY__O4-O6__FEMALE__Mar+Child	2332	169
24	024 ARMY__O4-O6__FEMALE__MarNoChild	1175	81
25	025 NAVY__E1-E4+E0__MALE+UNK__Mar+Child	6820	1393
26	026 NAVY__E1-E4+E0__MALE+UNK__MarNoChild	15766	3027
27	027 NAVY__E1-E4+E0__FEMALE__Mar+Child	2381	597
28	028 NAVY__E1-E4+E0__FEMALE__MarNoChild	6149	1568
29	029 NAVY__E5-E6__MALE+UNK__Mar+Child	36721	1942
30	030 NAVY__E5-E6__MALE+UNK__MarNoChild	20859	1060
31	031 NAVY__E5-E6__FEMALE__Mar+Child	5581	360
32	032 NAVY__E5-E6__FEMALE__MarNoChild	5688	359
33	033 NAVY__E7-E9__MALE+UNK__Mar+Child	19466	2268
34	034 NAVY__E7-E9__MALE+UNK__MarNoChild	3430	389
35	035 NAVY__E7-E9__FEMALE__Mar+Child	1691	246
36	036 NAVY__E7-E9__FEMALE__MarNoChild	699	97
37	037 NAVY__W1-W5+W0__MALE+FEMALE__Mar+Child	1461	67
38	038 NAVY__W1-W5+W0__MALE+FEMALE__MarNoChild	280	12
39	039 NAVY__O1-O3+O0__MALE+UNK__Mar+Child	7239	804
40	040 NAVY__O1-O3+O0__MALE+UNK__MarNoChild	5628	593
41	041 NAVY__O1-O3+O0__FEMALE__Mar+Child	1205	161
42	042 NAVY__O1-O3+O0__FEMALE__MarNoChild	1955	241
43	043 NAVY__O4-O6__MALE+UNK__Mar+Child	12173	1024
44	044 NAVY__O4-O6__MALE+UNK__MarNoChild	2636	218
45	045 NAVY__O4-O6__FEMALE__Mar+Child	1653	164
46	046 NAVY__O4-O6__FEMALE__MarNoChild	811	81
47	047 USMC__E1-E4+E0__MALE+UNK__Mar+Child	4101	1428
48	048 USMC__E1-E4+E0__MALE+UNK__MarNoChild	13382	4281
49	049 USMC__E1-E4+E0__FEMALE__Mar+Child	443	237
50	050 USMC__E1-E4+E0__FEMALE__MarNoChild	1973	824
51	051 USMC__E5-E6__MALE+UNK__Mar+Child	12156	2569
52	052 USMC__E5-E6__MALE+UNK__MarNoChild	8404	1718
53	053 USMC__E5-E6__FEMALE__Mar+Child	928	245
54	054 USMC__E5-E6__FEMALE__MarNoChild	1161	295
55	055 USMC__E7-E9__MALE+UNK__Mar+Child	9514	2850
56	056 USMC__E7-E9__MALE+UNK__MarNoChild	1256	369
57	057 USMC__E7-E9__FEMALE__MarChild+NoChild	597	212
58	058 USMC__W1-W5+W0__MALE+FEMALE__MarChild+NoChild	1995	317
59	059 USMC__O1-O3+O0__MALE+UNK__Mar+Child	2875	899

60	060 USMC__O1-O3+O0__MALE+UNK__MarNoChild	2763	823
61	061 USMC__O1-O3+O0__FEMALE__MarChild+NoChild	557	192
62	062 USMC__O4-O6__MALE+UNK__Mar+Child	4761	1303
63	063 USMC__O4-O6__MALE+UNK__MarNoChild	803	213
64	064 USMC__O4-O6__FEMALE__MarChild+NoChild	307	96
65	065 USAF__E1-E4+E0__MALE+UNK__Mar+Child	9862	1403
66	066 USAF__E1-E4+E0__MALE+UNK__MarNoChild	17867	2412
67	067 USAF__E1-E4+E0__FEMALE__Mar+Child	2534	441
68	068 USAF__E1-E4+E0__FEMALE__MarNoChild	7080	1115
69	069 USAF__E5-E6__MALE+UNK__Mar+Child	35077	2012
70	070 USAF__E5-E6__MALE+UNK__MarNoChild	17976	988
71	071 USAF__E5-E6__FEMALE__Mar+Child	5458	378
72	072 USAF__E5-E6__FEMALE__MarNoChild	5181	330
73	073 USAF__E7-E9__MALE+UNK__Mar+Child	18141	1851
74	074 USAF__E7-E9__MALE+UNK__MarNoChild	3396	334
75	075 USAF__E7-E9__FEMALE__Mar+Child	3252	390
76	076 USAF__E7-E9__FEMALE__MarNoChild	1223	138
77	077 USAF__O1-O3+O0__MALE+UNK__Mar+Child	7219	610
78	078 USAF__O1-O3+O0__MALE+UNK__MarNoChild	6860	552
79	079 USAF__O1-O3+O0__FEMALE__Mar+Child	1410	139
80	080 USAF__O1-O3+O0__FEMALE__MarNoChild	2894	265
81	081 USAF__O4-O6__MALE+UNK__Mar+Child	15043	941
82	082 USAF__O4-O6__MALE+UNK__MarNoChild	3266	196
83	083 USAF__O4-O6__FEMALE__Mar+Child	2683	191
84	084 USAF__O4-O6__FEMALE__MarNoChild	1343	95
85	085 USSF__E1-E4+E0__MALE+FEMALE__MarChild+NoChild	470	470
86	086 USSF__E5-E6__MALE+FEMALE__Mar+Child	649	649
87	087 USSF__E5-E6__MALE+FEMALE__MarNoChild	452	452
88	088 USSF__E7-E9__MALE+FEMALE__MarChild+NoChild	615	615
89	089 USSF__O1-O3+O0__MALE+FEMALE__Mar+Child	499	499
90	090 USSF__O1-O3+O0__MALE+FEMALE__MarNoChild	582	582
91	091 USSF__O4-O6__MALE+FEMALE__Mar+Child	1395	1395
92	092 USSF__O4-O6__MALE+FEMALE__MarNoChild	322	322

**Attachment B. 2023 RCSS – Estimated Population and Sample Size by Strata**

<b>Stratum</b>	<b>Stratum Definitions</b>	<b>Population Size</b>	<b>Sample Size</b>
All	Total	351,038	65,000
1	001 ARMYNG_E1-E4_MALE_MARR_CHILD	14,511	2,317
2	002 ARMYNG_E1-E4_MALE_MARR_NOCHILD	8,224	1,274
3	003 ARMYNG_E1-E4_FEMALE_MARR_CHILD	2,175	492
4	004 ARMYNG_E1-E4_FEMALE_MARR_NOCHILD	2,072	388
5	005 ARMYNG_E5-E9_MALE_MARR_CHILD	51,029	3,174
6	006 ARMYNG_E5-E9_MALE_MARR_NOCHILD	12,940	861

7	007 ARMYNG_E5-E9_FEMALE_MARR_CHILD	4,956	371
8	008 ARMYNG_E5-E9_FEMALE_MARR_NOCHILD	2,223	160
9	009 ARMYNG_W1-W5_MALE_MARR_CHILD	4,749	378
10	010 ARMYNG_W1-W5_MALE_MARR_NOCHILD	1,368	112
11	011 ARMYNG_W1-W5_FEMALE_MARRIED_CHILD_NOCHILD	459	35
12	012 ARMYNG_O1-O3_MALE_MARR_CHILD	7,892	1,206
13	013 ARMYNG_O1-O3_MALE_MARR_NOCHILD	3,084	460
14	014 ARMYNG_O1-O3_FEMALE_MARR_CHILD	916	163
15	015 ARMYNG_O1-O3_FEMALE_MARR_NOCHILD	756	139
16	016 ARMYNG_O4-O6_MALE_MARR_CHILD	7,586	1,304
17	017 ARMYNG_O4-O6_MALE_MARR_NOCHILD	1,253	216
18	018 ARMYNG_O4-O6_FEMALE_MARRIED_CHILD_NOCHILD	925	182
19	019 ARMYR_E1-E4_MALE_MARR_CHILD	8,573	2,019
20	020 ARMYR_E1-E4_MALE_MARR_NOCHILD	6,061	1,386
21	021 ARMYR_E1-E4_FEMALE_MARR_CHILD	2,104	575
22	022 ARMYR_E1-E4_FEMALE_MARR_NOCHILD	2,328	630
23	023 ARMYR_E5-E9_MALE_MARR_CHILD	28,154	4,128
24	024 ARMYR_E5-E9_MALE_MARR_NOCHILD	8,365	1,319
25	025 ARMYR_E5-E9_FEMALE_MARR_CHILD	4,558	820
26	026 ARMYR_E5-E9_FEMALE_MARR_NOCHILD	2,277	376
27	027 ARMYR_W1-W5_MALE_MARR_CHILD	1,803	483
28	028 ARMYR_W1-W5_MALE_MARR_NOCHILD	542	152
29	029 ARMYR_W1-W5_FEMALE_MARRIED_CHILD_NOCHILD	327	90
30	030 ARMYR_O1-O3_MALE_MARR_CHILD	5,085	1,103
31	031 ARMYR_O1-O3_MALE_MARR_NOCHILD	2,384	429
32	032 ARMYR_O1-O3_FEMALE_MARR_CHILD	1,322	370
33	033 ARMYR_O1-O3_FEMALE_MARR_NOCHILD	1,147	208
34	034 ARMYR_O4-O6_MALE_MARR_CHILD	8,166	2,862
35	035 ARMYR_O4-O6_MALE_MARR_NOCHILD	1,755	620
36	036 ARMYR_O4-O6_FEMALE_MARR_CHILD	1,365	607
37	037 ARMYR_O4-O6_FEMALE_MARR_NOCHILD	672	293
38	038 NAVYR_E1-E4_MALE_MARR_CHILD	1,316	1,316
39	039 NAVYR_E1-E4_MALE_MARR_NOCHILD	1,172	1,172
40	040 NAVYR_E1-E4_FEMALE_MARR_CHILD	467	467
41	041 NAVYR_E1-E4_FEMALE_MARR_NOCHILD	479	479
42	042 NAVYR_E5-E9_MALE_MARR_CHILD	11,210	1,565
43	043 NAVYR_E5-E9_MALE_MARR_NOCHILD	3,601	499
44	044 NAVYR_E5-E9_FEMALE_MARR_CHILD	2,287	358
45	045 NAVYR_E5-E9_FEMALE_MARR_NOCHILD	1,165	217
46	046 NAVYR_W1-O3_MALE_MARR_CHILD	1,758	996
47	047 NAVYR_W1-O3_MALE_MARR_NOCHILD	687	394
48	048 NAVYR_W1-O3_FEMALE_MARRIED_CHILD_NOCHILD	566	359
49	049 NAVYR_O4-O6_MALE_MARR_CHILD	5,368	1,226
50	050 NAVYR_O4-O6_MALE_MARR_NOCHILD	1,175	243
51	051 NAVYR_O4-O6_FEMALE_MARR_CHILD	690	156
52	052 NAVYR_O4-O6_FEMALE_MARR_NOCHILD	321	61
53	053 MCRES_E1-E4_MALE+FEMALE_MARR_CHILD	796	464
54	054 MCRES_E1-E4_MALE+FEMALE_MARR_NOCHILD	1,691	983
55	055 MCRES_E5-E9_MALE+FEMALE_MARR_CHILD	3,322	2,605

56	056 MCRES_E5-E9_MALE+FEMALE_MARR_NOCHILD	1,315	941
57	057 MCRES_W1-O3_MALE+FEMALE_MARR_CHILD	689	494
58	058 MCRES_W1-O3_MALE+FEMALE_MARR_NOCHILD	406	239
59	059 MCRES_O4-O6_MALE+FEMALE_MARR_CHILD	1,708	1,570
60	060 MCRES_O4-O6_MALE+FEMALE_MARR_NOCHILD	359	327
61	061 AIRNG_E1-E4_MALE_MARR_CHILD	2,588	1,214
62	062 AIRNG_E1-E4_MALE_MARR_NOCHILD	1,884	998
63	063 AIRNG_E1-E4_FEMALE_MARR_CHILD	670	422
64	064 AIRNG_E1-E4_FEMALE_MARR_NOCHILD	861	533
65	065 AIRNG_E5-E9_MALE_MARR_CHILD	25,710	2,022
66	066 AIRNG_E5-E9_MALE_MARR_NOCHILD	7,995	663
67	067 AIRNG_E5-E9_FEMALE_MARR_CHILD	4,490	360
68	068 AIRNG_E5-E9_FEMALE_MARR_NOCHILD	1,821	148
69	069 AIRNG_O1-O3_MALE_MARR_CHILD	2,365	968
70	070 AIRNG_O1-O3_MALE_MARR_NOCHILD	718	283
71	071 AIRNG_O1-O3_FEMALE_MARR_CHILD	535	244
72	072 AIRNG_O1-O3_FEMALE_MARR_NOCHILD	338	153
73	073 AIRNG_O4-O6_MALE_MARR_CHILD	5,815	1,206
74	074 AIRNG_O4-O6_MALE_MARR_NOCHILD	892	177
75	075 AIRNG_O4-O6_FEMALE_MARRIED_CHILD_NOCHILD	1,111	245
76	076 AFRES_E1-E4_MALE_MARR_CHILD	1,677	1,556
77	077 AFRES_E1-E4_MALE_MARR_NOCHILD	1,161	1,037
78	078 AFRES_E1-E4_FEMALE_MARR_CHILD	559	559
79	079 AFRES_E1-E4_FEMALE_MARR_NOCHILD	641	641
80	080 AFRES_E5-E9_MALE_MARR_CHILD	13,616	4,735
81	081 AFRES_E5-E9_MALE_MARR_NOCHILD	4,034	1,329
82	082 AFRES_E5-E9_FEMALE_MARR_CHILD	3,180	1,561
83	083 AFRES_E5-E9_FEMALE_MARR_NOCHILD	1,489	760
84	084 AFRES_O1-O3_MALE_MARR_CHILD	1,139	847
85	085 AFRES_O1-O3_MALE_MARR_NOCHILD	432	319
86	086 AFRES_O1-O3_FEMALE_MARRIED_CHILD_NOCHILD	663	566
87	087 AFRES_O4-O6_MALE_MARR_CHILD	5,268	3,140
88	088 AFRES_O4-O6_MALE_MARR_NOCHILD	897	520
89	089 AFRES_O4-O6_FEMALE_MARR_CHILD	1,350	887
90	090 AFRES_O4-O6_FEMALE_MARR_NOCHILD	485	334