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MARFORRES Realignment Operation FY15
MID-YEAR REPORT

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NAVAL RESEARCH PROGRAM

MONTEREY, CALIFORNIA

MARFORRES REALIGNMENT OPTIMIZATION

by

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Period of Performance: 1 October 2014 – 30 September 2015

Prepared for: Commander, Marine Forces Reserve

Point of Contact: Mr. Robert McGuiness

FY15 MID-YEAR REPORT

Background

The U.S. Marine Forces Reserve (MARFORRES) is conducting a series of realignment studies where discretionary changes may benefit from formal mathematical analysis. The purpose of this study is to develop an optimization tool to guide and/or support Commander, MARFORRES (CMFR) decisions. Specifically, the siting of MARFORRES units and the potential regional consolidation of existing Reserve Training Centers (RTCs) is critical to ensuring long-term sustainability of the units from both an economic and a readiness perspective.

Process

Realignment decisions rely on four main pillars: existence of adequate facilities; access to training areas; how realignment affects the people in each unit; and cost effectiveness. As stated in a recent CMFR Information Brief, related primary considerations also include demographics, specific RTC features required by a unit, and a variety of costs involved in siting a unit at a new RTC such as operational costs of the facility (e.g. utilities), improvements costs (e.g. reconfiguration, upgrading, or expansion of existing facilities) and the cost of new military construction.

The decision support tool sought by this research relies on the successful development and computational implementation of a mathematical optimization model, and on the collection of a considerable amount of data. Inputs include: USMCR units; RTC locations; characteristics of supporting training areas within the region; characteristics of supporting Dept. of Defense base and installations; table of organization by unit; personnel home address; distances between RTCs and supporting training areas; specific facility characteristics (e.g., size, condition) for each RTC (including maintenance facilities, drill halls, classrooms, gyms, administration offices, command suites, equipment warehouses, armories, parking, etc.); operating costs by RTC; planning figures for determination of facility expansion options; planning figures for equipment transportation; indicator of disruption to existing commitments if a unit is relocated; indicator of risk or value for certain units to be collocated; and, demographic data such as recruiting ratios achievable at each RTC.

We have provided MARFORRES with a series of Microsoft Excel forms to help them organize the collection and supply of the above information for our first exercise with data from the units and RTCs in the San Francisco, CA and Sacramento, CA areas. Part of the information will be supplied electronically from existing data systems. Other data will be collected during the site visits to those RTCs, currently scheduled for May 27-28 for MARFORRES personnel accompanied by the project co-PIs.

Once the model results are validated, we intend to develop a graphical user interface (GUI) to allow analysts at MARFORRES to modify and/or input new data required by the optimization tool and analyze the results in a friendly environment. The GUI will be developed in Microsoft Excel and VBA language, and will be completed in the first half of FY16.

Findings, Conclusions and Recommendations

In Progress