

# **ENGINEERING & CONSTRUCTION BULLETIN**

Issue No. 2017-02

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Type: Policy

**Subject: Designer to Project Manager Ratio****References:**

- (a) ECB 2010-03, 11010\_19, Design Engineering Competency (In-House design)
- (b) BMS B-1.4.1, B-1.4.2, B-1.5.1, and B-1.5.2 Roles and Responsibilities Matrices
- (c) NAVFAC CI Project Management Manual

**Enclosure:**

- (1) Sample Designer to PM Ratio Calculations

**1. Purpose**

Provide overall NAVFAC policy on Designer to Project Manager (PM) ratio in order to meet requirements in reference (a) and in accordance with references (b) and (c). This ECB provides guidance on appropriate staffing levels for Designer and Project Managers to ensure technical competency and execution capability, while balancing affordability and resource constraints.

**2. Background**

This Engineering & Construction Bulletin (ECB) provides policy and guidance to ensure the ratio of Designers to Project Managers (PM) is properly balanced in order to maintain a technically competent workforce and align with available resources. This also ensures Capital Improvements (CI) resources are appropriately resourced to execute CI work, specifically E-line and N-line products and services (P&S). As defined in reference (a), it is critical that CI executes a healthy volume of In-House designs, both Design-Bid-Build (aka Plans and Specifications) and Design-Build (aka Requests for Proposals). When dedicated PM positions are not balanced properly, the result restricts the ability of the remaining Designers to execute multi-discipline In-House designs, provide appropriate quality control and assurance on design deliverables, and maintain technical expertise. A high number of PMs, at the expense of design staff at a Facility Engineering Command (FEC) negatively impact the abilities of the design staff to execute CI P&S using In-House forces which are required to maintain CI's technical competencies. Staffing with too many PMs reduces the flexibility of the design offices to make the appropriate project-based decisions and directly impacts affordability. Also per research and guidance used by the private sector and other agencies, a 9 to 1 ratio for Designers to PMs, has been deemed appropriate and suitable to find the correct balance.

### 3. Applicability


This ECB is effective immediately and shall be implemented as quickly as possible; however, no later than 1 October 2018. This ECB applies to all CI E-line & N-line resources at Echelon III (Atlantic & Pacific) and Echelon IV. The ratio does not apply to the Project Management & Engineering Branches (PMEBs) within the Public Works Departments (PWDs).

### 4. Policy

- A. Ensure a Designer to PM ratio is established at each Design office, as not less than 7 to 1. Use enclosure (1) as the methodology to determine the current ratio for each Design office and as a tool to determine how to achieve the ratio of 7 to 1 as defined by this policy.
- B. Ensure the roles and responsibilities of the Designers and PMs are in accordance with reference (b) and reference (c). Per reference (b), CI Business Management System (BMS) processes for the specific acquisition and execution strategies, include specific Roles and Responsibilities (R&R) matrices. These matrices describe the R&Rs for CI PMs vice Designers and Construction Managers (CMs) during the various phases of a project. Additionally, reference (c) describes the R&Rs of CI PMs with respect to the many NAVFAC processes, policies, guidance, instructions and criteria. CI PMs shall adhere to the R&Rs of the CI PM as delineated in reference (b) and (c), in order to avoid unreimbursed resources on non-CI products and services.
- C. Design Assist Visits (DAVs) and Inspector General (IG) Reports will be used to evaluate adherence to this policy and specifically the Designer to PM ratio at the applicable Design offices. Where a DAV issue or an IG finding is identified, appropriate corrections to staffing via attrition and re-assignments shall be documented in a Transition Plan and implemented to bring the Designer to PM ratio into compliance, per this policy. The Transition Plan shall be developed and submitted to the CI DAV Team within 30 days of the DAV or in the case of an IG finding, per the IG standard process.
- D. Exceptions: PMEBS within PWDs are excluded from the Designer to PM ratio, since they typically do not have dedicated PMs and their design projects generally require less rigorous reporting for Sustainment, Repair, & Modernization (SRM) work. The PM efforts at a PMEB are typically supported by Senior Designers (or Design Supervisors) who cover the project management roles and responsibilities in delivering the CI P&S.

**5. Points of Contact**

For further guidance and/or instructions, please contact Ms. Deepika Cheriathundam, P.E., 202-685-9173, within the Chief Engineer's Office or Mr. Trip Fitch P.E., 757-322-4233, at NAVFAC Atlantic, or Mr. Evan Mizue P.E., 808-472-1278, at NAVFAC Pacific.



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### Enclosure (1): Sample Designer to PM Ratio Calculations

The following is an example of how the Designer to PM ratio is calculated. Fictitious Design office (FEC ABC) has a workload of \$250M in annual Design in Place (DIP) spread across the various acquisition strategies, as well as a few FTEs of N-line consultation and a few more FTEs in authority for PCAS (E-line REIMB). The productivity rates are based on E-line algorithm for that workload drives 40 FTEs which includes all first line supervisors.

NOTE: These 40 FTEs do not include the indirect/ overhead staffing accrued by design acceleration, which is used to resource Acquisition, Program Analysts, Admin, and horizontal CI Core support staff (TDCs, CADD Manager, Program Managers, etc.).

FEC ABC's Workload Resourcing: IPT
= 30 Designers: 5 PMs
Core* = 5 Designers: 0 PMs
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Total = 35 Designers: 5 PMs = 40 Technical FTEs
Designer to PM Ratio = 7:1 (35/5)

Definition: 1.0 Full-Time Equivalent (FTE) = Authority for staffing 1 billet for 1733 labor hours (+/- depending on any anomalies in the fiscal year—like February 29<sup>th</sup>, after factoring out leave).

In the above example, FEC ABC has two IPTs executing roughly the same volume of work—each with civil, structural, electrical, and mechanical engineers, as well as architects and the Project Managers. FEC ABC staffs 2 interior designers, 3 fire protection engineers, 1 landscape architect, 1 geotechnical engineers and 3 cost engineers in the CI Core (10 total FTEs) in order to leverage them across the AOR. The workload for the FEC ABCs accounts for 5 (or half) of those vertical CI Core assets (1 interior designer, 1.5 fire protection engineers, 0.5 landscape architect, 0.5 geotechnical engineers, and 1.5 cost engineers).

**\*NOTE:** For FECs with IPTs, the vertical resources in the CI Core should be considered as distributed amongst the design offices (IPTs & PWDs) that have workload associated with their disciplines. This distribution of vertical staff in calculating the Designer to PM ratio should also be used when subjectively staffing the various design offices with respect to the raw algorithm (vertical billets based on DIP by acquisition strategies divided by the appropriate productivity rates). In the example Design office for FEC ABC, the technical staff of 40 E-/N-line personnel includes all Designers, PMs, and the first line Designer/PM Supervisors. The CI BLTL at an IPT is typically resourced via Program B (overhead/ indirect), since that position is not directly charging projects.