



NASA Policy Directive

NPD 8820.2E

Effective Date: July 15, 2019

Expiration Date: July 15, 2024

COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES

Subject: Design and Construction of Facilities

Responsible Office: Office of Strategic Infrastructure

1. POLICY

- a. NASA's policy is to retain only those facilities required to conduct NASA programs, maintain the Agency's core capabilities, and meet national responsibilities. Centers shall submit and update annually their list of proposed facilities for disposal consistent with NASA footprint reduction goals and validate through the annual disposal data call.
- b. NASA's policy is to purchase, construct, and/or operate new real property only when existing capabilities (including those owned by NASA and other external entities) cannot be used or modified cost-effectively.
- c. NASA's policy, in accordance with Federal policy, is that construction of new NASA facilities and/or additions to its existing facilities are to be offset by a greater than equivalent amount of facility disposal until the NASA footprint reduction goals are met. Disposal offset shall be at least 125 percent of the new/additional construction of facilities. Disposal offset for facilities with an associated square footage is based on this square footage. Disposal offset for facilities that do not have an associated square footage is based on disposal of like or in-kind facilities. Facilities included in the Agency's disposal list cannot be reinstated from this list unless such reinstatement is offset by an equivalent or greater amount of another (or different or alternate) facility disposal or the facility is out-granted to a non-NASA entity.
- d. NASA's policy is that all facilities built and operated on NASA-controlled property be planned, designed, and built in compliance with public safety, national standards, Executive Orders, and Federal laws and regulations. Public safety includes appropriate features to safeguard the health and welfare of facility visitors, occupants, and equipment against internal hazards or external dangers.
- e. NASA's policy is that industry best practices of sustainable design, maintainable design, building commissioning, environmental compliance, and safety and security be incorporated into the planning and execution of facility projects. The use of these practices ensures that facility projects are delivered with the most economical life-cycle cost, least adverse environmental impact, and maximum benefits to the public and in the facility occupants' health, safety, security, and productivity.

2. APPLICABILITY

- a. This NASA Policy Directive (NPD) is applicable to NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers. This directive applies to the Jet Propulsion Laboratory (JPL), a Federally Funded Research and Development Center (FFRDC), other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements. Additionally, this NPD applies to non-NASA-owned facilities built on NASA-controlled property unless waivers have been obtained from the Director, Facilities and Real Estate Division (FRED).
- b. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms: "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is

recommended, but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

c. In this directive, "Agency-level directives" refers to directives with Agency-wide applicability (e.g., NPDs, NPRs, and NIDs).

d. In this directive, "NASA directives" refers to both Agency-level and Center-level directives.

e. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

f. In this directive, "NASA Center Directors" refers to the Directors of the NASA Field Centers. In the case of JPL, "NASA Center Director" in this directive refers to the NASA Management Office.

g. In this directive, "facilities" are defined as all real property assets, including non-NASA funded/operated assets, located on NASA-controlled property, including land, buildings, structures, technical facilities, and utility systems. "Technical facilities" include the other-than-traditional buildings and/or structures that are required specifically to execute the technical content of NASA's missions. Included are facilities such as wind tunnels, engine test stands, launch pads, storage tanks, etc. "NASA-controlled property" is defined as NASA-owned property, property secured by NASA and closed to the general public, or property in which NASA has general freedom and independence to enter without any approvals required.

h. In this directive, "construction of facilities" is defined as construction of new facilities, construction of replacements to existing facilities, the construction of modifications and/or repairs to existing facilities, and the demolition of existing facilities.

i. This directive is applicable to all construction of facilities projects, regardless of the funds source unless waivers have been obtained from the Director, FRED.

j. This directive is applicable to NASA directives developed or revised after the effective date of this NPD.

3. AUTHORITY

a. The National Aeronautics and Space Act 51 U.S.C. § 20113(c).

b. Compliance with Nationally Recognized Codes, 40 U.S.C. § 3312.

c. Delegation of Authority - To Take Actions in Real Estate and Related Matters, 14 CFR § 1204.501.

d. NPD 7330.1, Approval Authorities for Facility Projects.

4. APPLICABLE DOCUMENTS AND FORMS

a. NPR 8820.2, Facility Project Requirements (FPR).

b. NPR 7123.1, NASA Systems Engineering Processes and Requirements.

5. RESPONSIBILITY

a. The Assistant Administrator for Strategic Infrastructure is responsible for formulating and maintaining this directive and delegates its responsibilities to the Director, FRED.

b. The Director, FRED, is the Agency's functional leader and authority for the breadth of NASA facilities and facility engineering programs, including planning and budgeting, design, construction, maintenance, utilization, energy management, acquisition, and disposal. The Director:

(1) Establishes standards, specifications, and guidelines for building facilities.

(2) Establishes policies and procedures for building facilities in compliance with codes, laws, Executive Orders, regulations, and standards and ensures that the construction is consistent with the projects' business case analysis.

(3) Establishes policies and procedures for all facilities to ensure that industry best practices of sustainable design; maintainable design; building commissioning; and safety, security, and cybersecurity are incorporated into the planning and execution of facility projects. The Director shall work with the Office of the Chief Information Officer to identify appropriate information technology (IT) requirements, and cybersecurity requirements for facilities, including

all industrial control systems, ensuring critical infrastructure risks are identified, documented, and managed per Agency requirements.

- (4) Establishes training requirements in construction management, design management, and facilities project management.
- (5) Establishes, identifies, assigns, and designates key positions within NASA's Construction of Facilities (CoF) program.
- (6) Establishes educational, experiential, and training requirements for personnel in key positions within the CoF program.
- (7) Ensures compliance with environmental requirements in executing CoF projects.
- (8) Provides technical leadership for adopting best practices in the design, construction, and construction safety on facility projects.
- (9) Establishes procedures for obtaining waivers to this policy document.

c. The Director, FRED, serves in an advisory capacity to the Administrator and works in partnership with the Mission Directorates and Centers to ensure that Agency facility engineering design and construction activities support the accomplishment of NASA missions; are conducted in accordance with all statutory, regulatory, and fiduciary requirements; and are in accordance with Agency strategic goals. The Director, FRED, also serves as the Agency Facilities Capability Leader. As the Agency's Facility Capability Leader, the Director:

- (1) Advises the Agency and ensures proper facility alignment across missions and Centers.
- (2) Establishes strategies to provide facility design and construction guidance to the Agency.
- (3) Advises the Agency on facility sizing and strategic hiring, including contracting, across all Centers as it relates to the design and construction of facilities.

d. The NASA Chief Financial Officer or designee is responsible for ensuring budget planning, advocacy, development, allocations, and proper accounting procedures are in place prior to acquiring or designing and constructing facilities. "Development" is defined as funding-related development.

e. The Mission Directorates are responsible for validating Directorate Program facility requirements, planning, budgeting, and resource allocation.

f. NASA Center Directors are responsible for executing all NASA facility projects at their Center. NASA Center Directors will nominate in writing to the Director, FRED, for approval, a Center Official who will exercise project technical approval authority over all NASA facility projects at the Center. In the case of JPL, the FFRDC Contractor's Laboratory Director will nominate in writing an FFRDC Contractor Official. The designated Center Official will:

- (1) Develop business case analyses for facility projects and gain approval of business cases by the cognizant Mission Directorate Associate Administrator (AA) or designee for Mission Directorate-funded construction projects and the cognizant Headquarters Mission Support Office.
- (2) Approve facility designs.
- (3) Ensure compliance with applicable codes, laws, regulations, as well as NASA standards including, but not limited to, NPR 7123.1 and NPR 8820.2.
- (4) Ensure timely notification of facility projects to Agency management and facility stakeholders through the budgeting and operating plan processes.
- (5) Ensure facility design and construction personnel have proper training and experience.
- (6) Ensure all projects comply with applicable environmental and historical preservation requirements.
- (7) Ensure all facility projects are executed safely.
- (8) Ensure the Center facilities program is executed in accordance with this NPD.
- (9) Ensure the Center facilities program is executed in accordance with the approved Center Master Plan and Agency strategic direction.
- (10) Ensure all projects comply with Protective Services (Security) requirements.

6. DELEGATION OF AUTHORITY

The Director, FRED, may delegate responsibility for execution of the Agency's CoF program as described in section 5.b.

7. MEASUREMENT/VERIFICATION

a. Performance assessments of the design and construction process are accomplished through annual self-assessment reports from each Center. Centers will submit assessment reports to the Director, FRED, by the date as required in NPR 8820.2. The report includes metrics, as outlined in NPR 8820.2, relating to the scope, schedule, budget, and quality of design and construction services rendered during the previous fiscal year.

b. Center CIOs shall support the Center performance assessments, ensuring Center facility IT systems have at least the following items: IT System Security Plan, Security Assessment Test Plan, Security Control Assessment Report, Plan of Action and Milestones, and Signed Authority to Operate. Centers shall submit the IT assessment to the Agency CIO and the Director, FRED.

8. CANCELLATION

NPD 8820.2D, Design and Construction of Facilities, dated July 2, 2013.

**/s/Jim Bridenstine
Administrator**

ATTACHMENT A. (TEXT)

(URL for Graphic)

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