NOAA/NESDIS

NESDIS-PR-1210.1

PROJECT MANAGEMENT PROCEDURAL REQUIREMENTS

February 12, 2019

COMPLIANCE IS MANDATORY

Prepared by:
U.S. Department of Commerce
National Oceanic and Atmospheric Administration (NOAA)
National Environmental Satellite, Data, and Information Service (NESDIS)

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Approval Page

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Document Change Record

VERSION	DATE	CCR #	SECTIONS AFFECTED	DESCRIPTION
0.1	December 2017			First issue
0.2	July 2018			Minor updates for signature
0.3	July 2018			Updates to Section P.1
draft	August 3			Redlined updates for review
0.4	Sep 26, 2018		Multiple	Address questions from Dr. Volz
0.5	Oct 15, 2018		Multiple	Address additional questions from Dr. Volz
0.6	Oct 24, 2018		Multiple	Add leading 0 to REQ#s.
0.7	Oct 30, 2018		Multiple	Address David Spencer's comments.
1.0	Feb 12, 2019		Multiple	P.4: Update Applicable Documents 2.1: Update OSAAP review criteria 3.2: Update REQ-050

Contents

PREFACE

P.1 PURPOSE

The purpose of this Procedural Requirements (PR) document is to establish common requirements for performing Project Management (PM) across NESDIS projects of varying scope and size. Implementation of a disciplined project management approach will help projects remain within their commitments and constraints in terms of cost, schedule, technical scope and quality.

This PR provides the following two types of procedural requirements:

1. Requirements for the conduct of management processes during the project's lifecycle;
2. Minimum requirements for the Project Management Plan (PMP) contents.

P.2 APPLICABILITY

a. This PR applies to all NESDIS Offices (as defined in Appendix A). This PR applies to NESDIS employees and NESDIS support contractors that use NESDIS processes to augment and support NESDIS technical work. This PR applies to other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.

b. The requirements enumerated in this document are applicable to all projects (as defined in Appendix A). In this document, readers should treat the term project in the widest sense, to include projects, programs, portfolios, and major initiatives. For existing projects, the Director of the Office of Systems Architecture and Advanced Planning (OSAAP) may approve requests for variance allowing continuation of current practices.

c. NOAA collaborates with many domestic and international partners to fulfill its mission. With OSAAP's concurrence and mutual agreement, NESDIS Offices may tailor the requirements of this PR or follow the partner's PM approach. This document should be used as a reference to compare with the partner's processes to verify their completeness.

d. In this PR, all mandatory actions (i.e. requirements) are identified by the symbol "[REQ]" to unambiguously define all requirements. They are also captured in the Requirements Matrix in Appendix C. The Requirements Matrix takes precedence if there are any discrepancies between the narrative and the Matrix with respect to identifying requirements. The terms "shall" and "must" are not used to specify mandatory actions because they can be interpreted as legally-binding terminology, which removes all agency discretion and can create a potential liability problem for NOAA/NESDIS.

P.3 AUTHORITY

NESDIS-PD-1110.1, NESDIS Systems Engineering and Project Management Policy.

P.4 APPLICABLE DOCUMENTS[1]

- NESDIS-PD-1110.1, NESDIS Systems Engineering and Project Management Policy.

[1] OSAAP maintains oversight of all federal regulations, policy documents, and guidelines, and determines their applicability to NESDIS Systems Engineering and Program Management functions. Copies of such documents referenced in NESDIS policy directives and procedural requirements are kept under internal configuration management and provided upon request.

- NESDIS Portfolio Management Process, Version 1.0
- Terms of Reference (TOR) for the NOAA Program Management Council (PMC) / Joint NOAA-NASA Agency Program Management Council (APMC), June 07, 2018.
- NESDIS-PR-3101.1, NESDIS Procurement Procedures Under FITARA, Sep 26, 2018.
- Department of Commerce, Commerce Acquisition Manual 1307.1 (2011).
- Federal Acquisition Regulations, General Services Administration / DoD / NASA (2005).
- Departmental Administrative Orders (DAO) 208-3 Major System Acquisitions for the Department of Commerce.
- Departmental Administrative Orders (DAO) 208-16 Acquisition Project Management.
- NAO 208-1, NOAA Acquisition Handbook.
- NPD 6010.01A, NESDIS Environmental Data Management Planning Policy.
- NQP-4101 NOAA/NESDIS Space Flight Program Management Requirements for Assisted Acquisitions.
- Department of Commerce Agreements Handbook (December 2011).
- Program Management Improvement Accountability Act, S.1550 —114th Congress (2016).

Chapter 1 Introduction

a. This document establishes common NESDIS project management processes as directed by NESDIS-PD-1110.1, NESDIS Systems Engineering and Project Management Policy, for planning, controlling, monitoring and reporting projects.
b. The requirements established in this PR may be tailored using the guidelines provided in Chapter 3.
c. Figures within this PR are intended to be notional, not prescriptive.
d. Hierarchy of Related Documents: This PR focuses on project management procedural requirements. It flows down from NESDIS-PD-1110.1, NESDIS Systems Engineering and Program Management Policy, as shown in Figure 1.

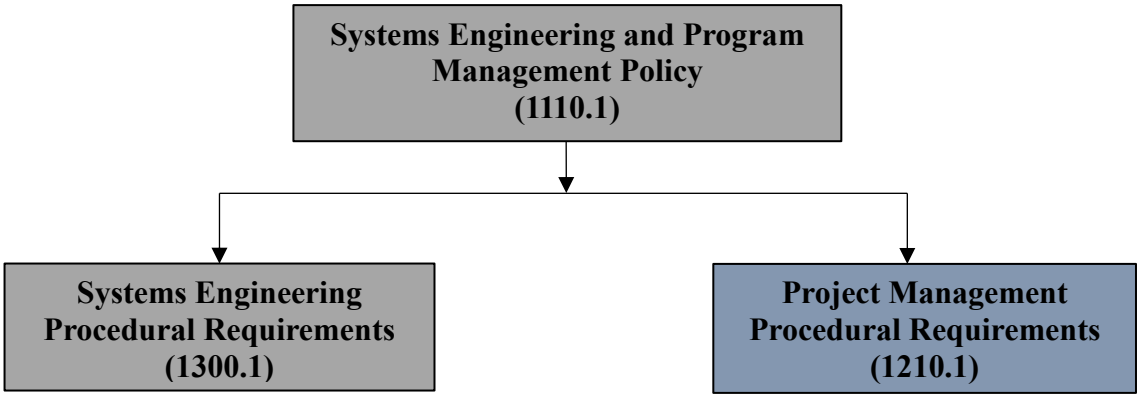

Figure 1: Hierarchy of Related Documents

Chapter 2 Roles and Responsibilities

2.1 Office of System Architecture and Advanced Planning

[REQ-001] OSAAP ensures compliance with this PR.

OSAAP will review and approve the PMPs for all projects that (i) do not execute solely within a single NESDIS Office, (ii) require the Program Management Council (PMC) oversight and assessment based on Mission risk Categorization, (iii) require compliance with acquisition requirements under the Federal Information Technology Acquisition Reform Act (FITARA), or (iv) meet the following criteria per DOC Policy:

- Does the project require special management attention because of its importance to NESDIS' mission or functions?
- Does the project have significant policy implications?
- Does the project have external visibility?
- Does the project have high development, operating, or maintenance costs?
- Does the project have unusual funding mechanism?
- Is the project defined as major by DOC capital planning and investment control process?

2.2 NESDIS Office Directors

[REQ-002] NESDIS Office Directors are responsible and accountable for the planning and execution of projects assigned to their Office.

[REQ-003] NESDIS Office Directors establish policies, processes, and procedures to execute the requirements of this PR.

[REQ-004] NESDIS Office Directors assess and take corrective actions to improve the execution of the requirements of this PR.

[REQ-005] NESDIS Office Directors will review and approve PMP, waiver authorizations, and other key management documents designated to them, to ensure independent assessment of project plans and progress.

2.3 Project Manager

[REQ-006] The Project Manager will develop the Project Management Plan (PMP) in accordance with the requirements of this PR.
[REQ-007] The Project Manager allocates adequate resources to meet the requirements of this PR commensurate with the scope, size, and complexity of the project.

Chapter 3 Project Management Processes

This chapter provides requirements for the processes that project managers must describe in the PMP and implement over the course of project execution. The NESDIS Project Management Handbooks listed in Appendix E should be consulted for further descriptions on the NESDIS implementation of each of the required project management processes described in the subsections which follow.

3.1 Project Effort Estimation, Planning and Tracking

This refers to the process of decomposing the high-level project objectives and phases into their lower-level "standalone" units of work (Work Packages) which accomplish finite, well-defined tasks each with clear inputs, processes, and outputs, via the mechanism of a Work Breakdown Structure (WBS). A decomposition to a Level 2 WBS is the minimum required in the PMP.

[REQ-008] All project activities down to Level 2 must appear as standalone tasks on the WBS diagrams. Projects may align work packages with project phases and milestones.

[REQ-048] The WBS must include tasks assigned to contractors or delivered by partner organizations.

[REQ-009] Each lowest-level Work Package Description (WPD) identified must define its task, organization or role leading the task, its resource allocation (in terms of allocated funds, schedule and/or labor effort), its dependencies, schedule, and a list of deliverables.

[REQ-010] All resource expenditure (cost/labor/schedule) during project execution must be charged and tracked against Work Packages.

[REQ-011] Work Package status reviews must be held regularly during the execution of the project, to update each WP status in terms of expenditure, percentage completion of each WP, the remaining effort (Estimated Time to Complete) so enabling project progress tracking. It is recommended to hold Work Package reviews at least monthly, so status can be incorporated into the Monthly Report.

3.2 Project Reporting and Management Interface

This task specifies reporting and authority flows between elements of the project team, and identified NESDIS-level management authority and external entities such as customers, stakeholders, contractors and partner Agencies. It includes External Review Boards to which the project reports, such as Program Management Councils, Standing Review Boards, and Independent Review Teams.

[REQ-049] The PMP will be baselined and released at the Authority to Proceed (ATP) milestone, and updated as needed at every review milestone after that.

[REQ-050] The level of insight NESDIS management will have in a project, and the level of rigor expected in the PMP will be determined based on the requirements of the project's Milestone Decision Authority and the requirements of the Integration Council (IC) for oversight and assessment.

[REQ-012] The PMP must document key reporting and authority interfaces to ensure that all interfaces within a project, and those external to the immediate team, are captured and explained. These include reporting to customers and stakeholders within and outside NESDIS, regular communications with contractors, team members and other stakeholders, and management interchange with other partners such as an Acquisition Agency.

[REQ-013] The PMP must document all review boards to which the project reports, both general NESDIS boards and any that are specific to the project.

[REQ-014] Programmatic interfaces must be defined in the PMP in terms of the following attributes:

- Why the interface is necessary;
- When the interface is used;
- Who is involved on either side of the interface;
- What information is exchanged, and
- How the interface is implemented.

3.3 Project Risk, Issue and Opportunity Management

[REQ-015] The PMP must document the project risks foreseen at Project Kick-Off and update the risks throughout the project life cycle. The NESDIS Risk Management Procedural Requirements document NESDIS-PR-1303.1 provides requirements for the overall risk management process.

[REQ-016] The PMP must document the issue-management approach (how project management issues can be raised, tracked in a database, and resolved), and any opportunity-management approach (how projects identify areas for continuous improvement).

3.4 Project Staff Management and Organization

[REQ-017] The PMP must identify the team organizational structure, reflecting the hierarchy for governance, guidance, direction, and the management of resources (budget, human capital, and so on). Interfaces should be made simple, logical, and conducive to delegation of roles and responsibility. Lines of accountability and authority must be clearly documented.

Personnel skill sets and number of persons required to staff a Project will be identified, in part, through decomposing project activities into low-level Work Packages.

[REQ-018] Large projects must explain the roles and responsibilities associated with key positions in the organizational charts, particularly if the team spans multiple internal organizations and/or external organizations.

[REQ-019] The PMP must identify team positions that require specific training and/or certification per NESDIS policy, and list team members who have the required skills and competencies.

3.5 Security, Export Control and Intellectual Property

These management processes address considerations related to security and export control

regulations limiting the dissemination of certain material, according to recognized restrictions such as Controlled Unclassified Information (CUI), International Traffic in Arms Regulations (ITAR), Export Administration Regulations (EAR) restrictions, when the project involves restricted material, foreign nationals and/or foreign entities such as international partner organizations. Data sharing and intellectual property (IP) protection must also be addressed.

[REQ-020] Any use of dissemination-restricted or controlled material must be described in the PMP, along with the access-control measures in place to protect such material.

[REQ-021] The PMP must address aspects related to the purchase and/or use of external (to NOAA) Intellectual Property (IP), for example data purchased from commercial vendors.

[REQ-022] The use of NOAA IP by other organizations, and/or the use of external IP by NOAA, must be reported by the project and documented in the PMP.

[REQ-023] Any data sharing obligations or restrictions must be noted in the PMP.

3.6 Project Acquisition Management and Agreements

[REQ-51] Projects must develop an acquisition plan as part of the PMP. Information about the acquisition process is provided in NAO 208-1, NOAA Acquisition Handbook.

[REQ-024] The PMP must list all external acquisitions, commercial contracts, Inter-Agency Agreements (IAA), Memoranda of Understanding (MoU), internal (to NESDIS or NOAA) work assignments, and International Agreements involved in the project, with a summary of the role of all partners.

[REQ-025] The PMP must reference and summarize all Statements of Work (SOW) relevant to the project, describing the awardee, the performance period, the effort milestones and deliverables. This must include all internal NESDIS and NOAA entities performing work on behalf of the project, and must reference the Agreement for these entities; the Agreement must be written in accordance with the DoC Agreements Handbook or applicable NESDIS templates.

[REQ-026] The PMP must note the Points of Contact on the contractor side, and identify the NOAA Contracting Officer and Contracting Officer Representative.

3.7 Project Progress Monitoring and Control

[REQ-027] Projects must establish and monitor status and performance metrics on a regular basis, providing a roll-up of Key Performance Indicators (KPI) to track project status and health against cost and schedule.

[REQ-028] Project metrics must be appropriate for the scope and complexity of the project, risk level, its budget and staffing levels, resource levels, and the number and nature of any contracts.

The KPI must be tailored to the project, and provide a tangible and relevant measurement of the status of the project over as much of its lifecycle as possible. Potential KPI include Cost Performance, Schedule Performance, Number of Open Actions and Issues, Number of Review Item Discrepancies against key documents Product/Data Acceptance/Rejection Rate, and Number of Engineering Changes.

[REQ-029] All projects must track status and expenditure against the Work Packages, showing a predicted date for completion and performance against baseline cost and schedule, presented in a Monthly Status Report (see the Project Management Handbook for examples).

[REQ-030] Complex projects with significant costs and complicated schedules must implement a formal Earned Value Management System (EVMS).

EVMS combines an Integrated Master Schedule (IMS) with the Work Breakdown Structure, to track the progress of individual work packages in the WBS in terms of cost and schedule. EVMS relies on clearly-defined tasks whose progress to completion can be measured on the IMS in terms of cost-to-date, percentage of work achieved, and remaining Estimate-To-Completion. EVMS can also apply to contracted and external work packages.

[REQ-031] Task progress, cost-to-date and estimate-to-completion towards task or project milestones, Key Decision Points and contract deliverables must be tracked on the project schedule, whether an IMS or a less-formal schedule tracking method.

[REQ-032] Any significant deviations from the projected expenditure, particularly overspending, must be brought to the attention of NESDIS management, for investigation and corrective action. Unless the PMP defines a 'significant' deviation, it is a Fiscal Year or LCC overrun greater than 15%.

The NESDIS Project Management Handbook contains guidance and examples of suitable project monitoring and control techniques appropriate to particular sizes of projects, including examples of the application of Earned Value calculations for tracking project performance.

3.8 Project Change Management

[REQ-033] A project's scope must be baselined prior to the ATP milestone, in order to define and constrain the cost, schedule and effort required.

ATP approval is the milestone that officially begins execution of the project, defined at the point where the NESDIS AA (or highest signature authority) authorizes the project to proceed.

[REQ-034] The PMP must document the formal process by which the baseline (primarily cost, schedule and scope) change management and control is implemented.

[REQ-035] The PMP must document any "hard limit" programmatic baseline constraints imposed by NESDIS management, for example "cost not to exceed" or "launch no later than".

3.9 Project Time Management

This discipline includes creating an Integrated Master Schedule, and tracking progress against it, enabling the PM to track and report the performance against the established baseline to NESDIS management.

Regular review of the current IMS within a suitable project tracking tool, and regular update of the individual work packages with metrics such as cost and schedule expended, and estimated time to completion, combined with EVMS, will provide the PM with a valuable status indication of current project health such as Cost Performance Index and Schedule Performance Index. This provides an element of the performance measurement of NESDIS projects.

[REQ-036] All project Work Packages must be tracked in an Integrated Master Schedule, capturing their start date, end date, budget, level of completion and dependencies on other WPs.

[REQ-037] The project must preserve the original baseline schedule, for purposes of comparing progress against the baseline.

[REQ-038] The project must maintain a current IMS, updated on a regular basis (recommended at least monthly)

[REQ-039] The Integrated Master Schedule (IMS) must highlight the "**critical path(s)**" – this is the sequence of linked activities which has the longest combined duration, and captures the most key elements to the project's success. Tracking and controlling items on the critical path is key to ensuring project success.

Examples of IMS implementation are available in the NESDIS Project Management Handbook.

3.10 Project Cost Management

Cost management or financial planning, includes preparing the necessary submissions to the NESDIS Chief Financial Officer and Acquisition and Grants Office as part of the authorization of the project, such as the Independent Cost Estimate. The financial plan describes how the project is funded and how funds are disbursed to partner organizations and any contractors.

[REQ-040] The financial plan for the project must present both the funding plan (incoming funds) and obligation plan (outgoing funds) plus any reserve, before the project can be authorized. The reserves posture should be correlated with the project risk assessment, by WBS element and project schedule.

[REQ-041] The financial plan must align to Federal and NOAA budget cycles, showing funding and obligations aligned to fiscal year boundaries, over the project lifecycle.

[REQ-042] The financial plan must be updated and approved prior to each fiscal year boundary, showing funding-to-date, obligation-to-date, the status of reserve and any carry-over into the next fiscal year.

[REQ-043] The current and projected budget expenditure from cradle to grave (Life Cycle Cost Estimate) must be tracked and communicated by the PM to NOAA-NESDIS Directors at each KDP, if needed to initiate changes to budget requests to maintain funding levels for the project.

3.11 Project Quality Management

This project management discipline refers to the use of metrics and specific tests to measure the quality control aspects of a project. The System Engineering processes will measure project quality as performance against meeting technical requirements, while the project management discipline must focus on the overall management oversight put into place to enable continuous quality measurement and effective corrective action in response to warning indicators in quality metrics.

[REQ-044] The PMP must document the use of Mission Assurance (MA) processes, whether following NOAA standards, a partner Agency or Prime Contractor, and/or industry quality and

process standards. The MA process can be scaled consistent with the project category and level of risk acceptance.

3.12 Tailoring Guidelines

a. Tailoring is the process used to efficiently implement the requirements of this PR given the size and scope of the project.
b. The tailoring process should occur at the beginning of a project, but may occur at any time in the project's life cycle. It results in changes to the implementation of requirements depending on the timing of the request.
c. OSAAP will have responsibility to approve or disapprove any tailoring request for this document.

[REQ-045] Requests for tailoring are submitted through the change management process.

[REQ-046] The results of tailoring are documented in the Requirements Matrix (Appendix C) and submitted to OSAAP for approval along with supporting rationale.

[REQ-047] The results of the tailoring will be documented in the next revision of the PMP.

Appendix A: Glossary

Baseline: An agreed-to set of requirements, designs, or documents that will have changes controlled through a formal approval and monitoring process.

Key Decision Point: The event at which the MDA determines the readiness of a program/project to progress to the next phase of the life cycle (or to the next KDP).

Milestone Decision Authority (MDA): The individual authorized by NESDIS to make important decisions for programs and projects under their authority.

NESDIS Office(s): A term used in the widest sense to include NESDIS Headquarters elements, NESDIS Operations and Acquisitions offices, the Center for Satellite Applications and Research (STAR), and the National Centers for Environmental Information (NCEI).

Process: A set of activities used to convert inputs into desired outputs to generate expected outcomes and satisfy a purpose.

Product: A part of a system that performs operational functions; part of a system that performs life-cycle services; result of the technical efforts (e.g., plan, baseline, or test result).

Program: Directed, funded acquisitions that provide new, improved, or continuing systems or services in response to an approved need. Programs are divided into levels established to facilitate decision making, execution, and compliance with statutory and regulatory requirements and may be composed of multiple projects, services contracts, interagency agreements, and other types of acquisitions. With a systems or services capability focus, programs usually tie together an agency's higher-level programming and budgeting process with the agency's strategic plan. (Definition from the Federal Acquisition Institute's Project Manager's Handbook).

Project: A planned acquisition undertaking with a definite beginning and clear termination point that produces a defined capability. A project is an individually planned, approved, and managed basic building block related to a program. A project is not constrained to any specific element of the budget structure; however, basic research, maintenance of equipment and facilities, and operations are not considered projects. (Definition from the Federal Acquisition Institute's Project Manager's Handbook). In this document, readers should treat the term project in the widest sense, to include projects, programs, portfolios, and major initiatives.

Requirement: A statement of a function to be performed, a performance level to be achieved, or an interface to be met.

Risk: In the context of mission execution, the potential for performance shortfalls, which may be realized in the future, with respect to achieving explicitly established and stated performance requirements. The performance shortfalls may be related to any one or more of the following mission execution domains: (1) safety, (2) technical, (3) cost, and (4) schedule.

Stakeholder: A group or individual who is affected by or has an interest in a project.

Tailoring: The process used to seek relief from the PR requirements consistent with program or project objectives, allowable risk, and constraints.

Variance: A departure from approved product definition information, for a limited amount of time or for a specified effectivity, that does not require revision of approved product definition information.

Waiver: A documented authorization releasing a program or project from meeting a requirement after the requirement is put under configuration control at the level the requirement will be implemented.

Appendix B: Acronyms

ATP	Authorization to Proceed
CAR	Commerce Acquisitions Regulations
CCB	Configuration Change Board
CDR	Critical Design Review
CMMI	Capability Maturity Model Integration
COTS	Commercial Off-the-Shelf
CPI	Cost Performance Index
EAR	Export Administration Regulations
EVM	Earned Value Management System
FAR	Federal Acquisition Regulations
FITARA	Federal Information Technology Acquisition Reform Act
IMS	Integrated Master Schedule
IP	Intellectual Property
IAA	Inter-Agency Agreement
IC	Integration Council
ITAR	International Traffic in Arms Regulations
KDP	Key Decision Point
LCCE	Life Cycle Cost Estimate
MA	Mission Assurance
MOU	Memorandum of Understanding
MRB	Material Review Board
NASA	National Aeronautics and Space Administration
NESDIS	National Environmental Satellite, Data, and Information Service
NOAA	National Oceanic and Atmospheric Administration
NESDIS-PD	NESDIS Procedural Directive
NESDIS-PR	NESDIS Procedural Requirements
OSAAP	Office of System Architecture and Advanced Planning
PDR	Preliminary Design Review
PMC	Program Management Council
PMI	Project Management Institute
RFI	Request for Information
RFQ	Request for Quotation
RMP	Risk Management Plan
SoW	Statement of Work
PM	Project Manager
PMP	Project Management Plan
SPI	Schedule Performance Index
SRB	Standing Review Board
WBS	Work Breakdown Structure
WP	Work Package

Appendix C: Compliance Matrix

The following table contains the requirements for the Project Management Plan document contents derived from this NESDIS-PR document, with reference to the document section in which the requirement is captured. Self-assessment of compliance must be provided to the OSAAP Director at Project Kick-Off, thereafter annually or on request.

The project must indicate to OSAAP their compliance with the requirements below, and seek waivers for any requested deviations.

Section	REQ#	Requirement text from NESDIS-PR-1210.1 section listed
2.1	001	OSAAP ensures compliance with this PR.
2.2	002	NESDIS Office Directors are responsible and accountable for the planning and execution of projects assigned to their Office
2.2	003	NESDIS Office Directors establish policies, processes, and procedures to execute the requirements of this PR.
2.2	004	NESDIS Office Directors assess and take corrective actions to improve the execution of the requirements of this PR.
2.2	005	NESDIS Office Directors will review and approve PMP, waiver authorizations, and other key management documents designated to them, to ensure independent assessment of project plans and progress.
2.3	006	The Project Manager will develop the Project Management Plan (PMP) in accordance with the requirements of this PR.
2.3	007	All project activities down to Level 2 must appear as standalone tasks on the WBS diagrams. Projects may align work packages with project phases and milestones. The WBS must include tasks assigned to contractors or delivered by partner organizations.
3.1	008	All project activities down to Level 2 must appear as standalone tasks on the WBS diagrams. Projects may align work packages with project phases and milestones. The WBS must include tasks assigned to contractors or delivered by partner organizations.
3.1	048	The WBS must include tasks assigned to contractors or delivered by partner organizations.
3.1	009	Each lowest-level Work Package Description (WPD) identified must define its task, organization or role leading the task, its resource allocation (in terms of allocated funds, schedule and/or labor effort), its dependencies, schedule, and a list of deliverables.
3.1	010	All resource expenditure (cost/labor/schedule) during project execution must be charged and tracked against Work Packages.
3.1	011	Work Package status reviews must be held regularly during the execution of the project, to update each WP status in terms of expenditure, percentage completion of each WP, the remaining effort (Estimated Time to Complete) so enabling project progress tracking. It is recommended to hold Work Package reviews at least monthly, so status can be incorporated into the Monthly Report.
3.1	049	The PMP will be baselined and released at the Authority to Proceed (ATP) milestone, and updated as needed at every review milestone after that.
3.2	050	The level of insight NESDIS management will have in a project, and the level of rigor expected in the PMP will be determined based on the requirements of the project's Milestone Decision Authority and the requirements of the Integration Council (IC) for oversight and assessment.
3.2	012	[The PMP must document key reporting and authority interfaces to ensure that all interfaces within a project, and those external to the immediate team, are captured and explained. These include reporting to customers and stakeholders within and outside NESDIS, regular communications with contractors, team members and other stakeholders, and management interchange with other partners such as an Acquisition Agency.
3.2	013	The PMP must document all review boards to which the project reports, both general NESDIS boards and any that are specific to the project.

3.2	014	Programmatic interfaces must be defined in the PMP in terms of the following attributes: • Why the interface is necessary; • When the interface is used; • Who is involved on either side of the interface; • What information is exchanged, and • How the interface is implemented.
3.3	015	The PMP must document the project risks foreseen at Project Kick-Off and update the risks throughout the project life cycle. The NESDIS Risk Management Procedural Requirements document NESDIS-PR-1303.1 provides requirements for the overall risk management process.
3.3	016	The PMP must document the issue-management approach (how project management issues can be raised, tracked in a database, and resolved), and any opportunity-management approach (how projects identify areas for continuous improvement).
3.4	017	The PMP must identify the team organizational structure, reflecting the hierarchy for governance, guidance, direction, and the management of resources (budget, human capital, and so on). Interfaces should be made simple, logical, and conducive to delegation of roles and responsibility. Lines of accountability and authority must be clearly documented.
3.4	018	Large projects must explain the roles and responsibilities associated with key positions in the organizational charts, particularly if the team spans multiple internal organizations and/or external organizations.
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3.5	021	The PMP must address aspects related to the purchase and/or use of external (to NOAA) Intellectual Property (IP), for example data purchased from commercial vendors.
3.5	022	The use of NOAA IP by other organizations, and/or the use of external IP by NOAA, must be reported by the project and documented in the PMP.
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3.6	051	Projects must develop an acquisition plan as part of the PMP. Information about the acquisition process is provided in NAO 208-1, NOAA Acquisition Handbook.
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3.7	028	Project metrics must be appropriate for the scope and complexity of the project, risk level, its budget and staffing levels, resource levels, and the number and nature of any contracts.

3.7	029	All projects must track status and expenditure against the Work Packages, showing a predicted date for completion and performance against baseline cost and schedule, presented in a Monthly Status Report (see the Project Management Handbook for examples).
3.7	030	Complex projects with significant costs and complicated schedules must implement a formal Earned Value Management System (EVMS).
3.7	031	Task progress, cost-to-date and estimate-to-completion towards task or project milestones, Key Decision Points and contract deliverables must be tracked on the project schedule, whether an IMS or a less-formal schedule tracking method
3.7	032	Any significant deviations from the projected expenditure, particularly overspending, must be brought to the attention of NESDIS management, for investigation and corrective action. Unless the PMP defines a 'significant' deviation, it is a Fiscal Year or LCC overrun greater than 15%.
3.8	033	A project's scope must be baselined prior to the ATP milestone, in order to define and constrain the cost, schedule and effort required.
3.8	034	The PMP must document the formal process by which the baseline (primarily cost, schedule and scope) change management and control is implemented.
3.8	035	The PMP must document any "hard limit" programmatic baseline constraints imposed by NESDIS management, for example "cost not to exceed" or "launch no later than".
3.9	036	All project Work Packages must be tracked in an Integrated Master Schedule, capturing their start date, end date, budget, level of completion and dependencies on other WPs.
3.9	037	The project must preserve the original baseline schedule, for purposes of comparing progress against the baseline.
3.9	038	The project must maintain a current IMS, updated on a regular basis (recommended at least monthly)
3.9	039	The Integrated Master Schedule (IMS) must highlight the "**critical path(s)**" – this is the sequence of linked activities which has the longest combined duration, and captures the most key elements to the project's success. Tracking and controlling items on the critical path is key to ensuring project success.
3.10	040	The financial plan for the project must present both the funding plan (incoming funds) and obligation plan (outgoing funds) plus any reserve, before the project can be authorized. The reserves posture should be correlated with the project risk assessment, by WBS element and project schedule.
3.10	041	The financial plan must align to Federal and NOAA budget cycles, showing funding and obligations aligned to fiscal year boundaries, over the project lifecycle.
3.10	042	The financial plan must be updated and approved prior to each fiscal year boundary, showing funding-to-date, obligation-to-date, the status of reserve and any carry-over into the next fiscal year.
3.10	043	The current and projected budget expenditure from cradle to grave (Life Cycle Cost Estimate) must be tracked and communicated by the PM to NOAA-NESDIS Directors at each KDP, if needed to initiate changes to budget requests to maintain funding levels for the project.
3.11	044	The PMP must document the use of Mission Assurance (MA) processes, whether following NOAA standards, a partner Agency or Prime Contractor, and/or industry quality and process standards. The MA process can be scaled consistent with the project category and level of risk acceptance.
3.12	045	Requests for tailoring are submitted through the change management process.
3.12	046	The results of tailoring are documented in the Requirements Matrix (Appendix C) and submitted to OSAAP for approval along with supporting rationale.
3.12	047	The results of the tailoring will be documented in the next revision of the PMP.

Appendix D: Project Management Plan Template

The Project Management Plan for each project must follow the layout of this PR document and the table below, addressing each of the project management disciplines in turn. Even in areas where the particular project management discipline does not apply (for example, a project may have no export controls or other security-related aspects), the relevant section should still be included and addressed. Additional project management disciplines and processes can be added to the plan as needed.

PREFACE	Provide document introduction and contents.
P.1 APPLICABLE DOCUMENTS	Reference all documents that apply to the PMP, i.e. that govern its contents and constrain or otherwise define the project.
P.2 REFERENCE DOCUMENTS	Reference all documents that are used as background material to the PMP
CHAPTER 1 PROGRAM BACKGROUND AND OBJECTIVES	Describe the purpose and scope of the program/project, how it was conceived, what Level 0 requirements it fulfills (by reference)
1.1 Program Dependencies and Risks	This section contains a description of how the program depends upon any external entities such as contractors, partners and other national / international agencies, with any associated risks to the program introduced by those external dependencies. Additional risks at programmatic level may include insufficient or partial budget allocation to complete the program and its individual projects. Here the Risk Matrix is presented, and an overview of the risk management strategy, with reference to the Risk Management Plan.
1.2 Program Charter	Describes the terms and conditions of the Program Charter levied upon NOAA-NESDIS to execute the program, especially expectations in terms of budget and schedule, plus reporting obligations to NOAA, as relevant to the project.
CHAPTER 2: PM Processes	This chapter addresses each of the PM processes in turn, in the same order as they appear in this document.
2.1 Project Effort Estimation and Tracking	Present the project Work Breakdown Structure, key Work Package Descriptions (can be an Appendix, or reference a tool where WPDs are stored) and provide the top-level project cost and schedule.
2.2 Project Reporting and Management Interface	Provide a diagram/description of the project team members and the organizational responsibility flows
2.3 Risk, Issue and Opportunity Management	Describe the process of managing risks, handling issues and identifying opportunities for project or process improvement
2.4 Project Staff Management and Organization	Provide the project's internal organizational diagram, identify key roles and the staff members in those positions
2.5 Security, Export Control and Intellectual Property	Address any aspects of the project that deal with secure information, exporting data to foreign partners, or commercial intellectual property issues, including licensing of hardware or software
2.6 Program Acquisition Management and Agreements	List and reference all acquisition and agreement-related material (contracts, MoUs, Inter- and Intra-Agency Agreements, International Partners)
2.7 Project Monitoring and Control	Describe project performance metrics, present the Key Performance Indicators the schedule tracking technique and any Earned Value Management System employed.

2.8 Project Change Management	Present the project baseline (cost, schedule) and explain how it is placed under configuration control, and how changes to the project baseline would be handled and flowed through the project, capturing impacts
2.9 Project Time Management	Present the baseline project schedule, from a simple milestone list with dates, to an Integrated Master Schedule with Work Packages, according to the complexity of the project.
2.10 Project Cost Management	Present the baseline project financial estimate (Independent Cost Estimate), and the funding and obligation plan of the project lifetime. Explain any significant cost pressures or uncertainties.
2.11 Project Quality Management	Describe the application of mission assurance processes to the project management disciplines, so assuring process effectiveness and assessing quality of project management outputs.

Appendix E: Project Management Handbooks

The table below lists Project Management Handbooks developed by OSAAP as companion guides to this PR document. OSAAP may add additional PM Handbooks as the need arises. The NESDIS NESDOCS website will contain the set of approved project management and system engineering process, requirements and handbook documentation. Contact OSAAP if a need for further handbooks or process documentation is identified.

Document Title	Primary Usage
Cost Estimation	Guides projects on how to present a lifecycle cost estimation and effort plan based on common formats, primarily using the engineering (labor-driven) cost model
Cost Tracking and Reporting	Describes how a NESDIS Program/project must track and report all cost expenditures, including budget, labor and other resources.
Scheduling and Tracking	Describes how to create an Integrated Master Schedule, and how to track and report project progress against it
WBS Handbook	Provides a template for NESDIS WBS to Level 3, with a Work Breakdown Structure and Work Package Descriptions that can and should be re-used across all NESDIS projects
NESDIS Project Formulation Process	Describes the process by which a prospective Program or project is presented to the NESDIS Enterprise Architecture Committee for authorization to proceed beyond a concept study. Mandatory for continuation beyond KDP-A.

APPENDIX F: References

Reference documents (including documents hosted as web pages) listed below provide suitable guidance to how similar Agencies to NOAA implement project management processes for projects of similar scope and complexity, or provide background information to NOAA policies.

- NESDIS Project Management Handbooks – see Appendix
- SAE EIA-48, Standard for Earned Value Management.
- Federal Acquisition Institute, Project Manager's Guidebook.
- NESDIS Work Breakdown Structure (WBS) Handbook.
- NASA Space Flight Program and Project Management Handbook, NASA/SP-2014-3705 (2015).
- NASA Space Flight Program and Project Management Requirements, NASA/PR 7120.5E.
- NASA Project Planning and Control Handbook, NASA/SP-2016-3404.
- Defense Acquisition Handbook, Defense Acquisition University.
- Project Management Book of Knowledge, Project Management Institute (5th Edition).
- Federal Plain Language Guidelines, May 2011 (Rev.1).
- NASA/SP-2007-6105, NASA Systems Engineering Handbook

Additionally, the Department of Commerce Office of Space Commerce, the Department of Commerce Office of the General Counsel, and the Office of Management and Budget all provide useful information on the involvement of the commercial sector with NOAA, the legal aspects of entering into contracts, and the Federal budgeting process.