

EXPRO National Manual of Assets and Facilities Management

Volume 2, Chapter 2

Asset Management Plan and Implementation Procedure

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Asset Management Plan and Implementation Procedure

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Asset Management Plan and Implementation Procedure

1.0 PURPOSE

Asset Management planning determines how the Entity will achieve its Asset Management (AM) Objectives through managing resources, and delegating responsibilities within a defined timescale. Effective Asset Management planning allows the Entity to optimally manage its asset portfolio by balancing cost, risk, and performance throughout the Asset Lifecycle.

The purpose of this document is to guide the Entity in preparing Asset Management planning documentation which satisfies its strategic and operational requirements in the short, medium, and long term.

2.0 SCOPE

This document offers entities guidance in preparing and implementing two forms of Asset Management planning documentation:

- Strategic Asset Management Plan (SAMP), which defines:
 - How organizational objectives are to be converted into AM Objectives
 - The approach for developing Asset Management Plans
 - The role of the Asset Management System in supporting achievement of long-term AM Objectives
- Asset Management Plan (AMP), which specifies the activities, resources, and timescales required for an individual asset, or a grouping of assets, to achieve the Entity's AM Objectives in the short to medium term

A highlighted herein are the importance of Risk Management and Management of Change

3.0 DEFINITIONS

Term	Definition
Asset Class	Asset Class A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure
Asset Data Policy	This mandates the asset data structure and the asset class metadata rules to be adopted across an asset's Lifecycle from concept to disposal.
Asset Lifecycle	The phases an Asset transitions through from planning to disposal
Asset Management	The coordinated activity of an organization to realize the full potential of any asset
Asset Management Policy	A statement that sets out the principles by which the organization intend to apply the Asset Management System to achieve its organizational objectives.
Asset Management Objective	Derived as part of the SAMP are the aligned activities set by the Entity, and is consistent with Organizational Objectives and Asset Management Policy, to achieve specific measurable results. It provides the essential link between the organizational objective and the Asset Management Plan (AMP), that describes how these objectives are to be achieved.
Asset Management System	Set of interrelated or interacting elements to establish Asset Management Policy, Asset Management Objective and processes to achieve those objectives. (i.e. management systems for the management of assets).
Lifecycle	The cycle of activities that an asset (or facility) goes through while it remains an identity as a particular asset, i.e. from planning and design to decommissioning or disposal
Through-life Engineering Services	Set of capabilities, techniques and behaviors that are applied to major assets over their Lifecycle, to achieve optimum value in use at entry into service, and through life.
AMP	Asset Management Plan – Documented information that specifies the activities, resources and timescales required for an individual Asset, or a grouping of assets, to achieve the organization's Asset Management Objectives in the short to medium term



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Term	Definition
AMS	Asset Management Software – Also known as an asset management tool or solution, is a dedicated application that is used to record and track an asset throughout its Lifecycle, from procurement to disposal.
CA	Condition Assessment – The process of periodic physical inspections, assessments, measurements and interpretation of the resultant data to indicate the condition of a specific asset
NMA&FM	National Manual of Assets and Facilities Management
SAMP	Strategic Asset Management Plan – Documented information which defines: • How organizational objectives are to be converted into Asset Management Objectives • The approach for developing Asset Management Plans • The role of the Asset Management System in supporting achievement of long-term Asset Management Objectives
SLA	Service Level Agreement
SMART	Specific, Measurable, Achievable, Realistic, and Time-bound

Table 1: Definitions

4.0 REFERENCES

- International Standards Organization (ISO) 55000:2014 – Asset Management, Overview, Principles and Terminology
- National Manual of Assets and Facilities Management (NMA&FM) Volume 12 – Risk Management
- ISO 55001:2014 – Asset Management, Management Systems – Requirements
- ISO 55002:2014 – Asset Management, Management Systems – Guidelines for the Application of ISO 55001
- ISO 41001:2018 – Facility Management, Management Systems — Requirements with Guidance for Use
- ISO/TS 55010:2019 – Asset Management – Guidance on the Alignment of Financial and Non-Financial Functions in Asset Management
- ISO 9000:2015 – Quality Management Systems
- ISO 31000:2018 – Risk Management Guidelines
- PAS 280:2018 – Through-life Engineering Services – Adding Value Through a Common Framework, Guide
- BS EN 16991:2018 – Risk-based Inspection Framework



5.0 RESPONSIBILITIES

Role	Description
Asset Management Function	An Asset Management function shall be established within the Entity and mandated by Entity Leadership to develop and implement an effective Asset Management System for the Entity. Responsibilities undertaken by the Entity include, but are not limited to the following: • Developing, deploying, and monitoring the Asset Management System • Establish standards and performance measures for the Asset Management System • Suitably identifying, controlling, and mitigating hazards which affect the Asset Management System • Establish the impact of future requirements on the Asset Management System • Planning and managing a program of Condition Assessments (CA), as necessary in line with guidance laid out within National Manual for Assets and Facilities Management (NMA&FM) – Volume 3. ○ Manage compilation of an Asset Condition Assessment Report ○ Manage the establishment of an Asset Hierarchy, including criticality of assets ○ Plan and implement recommendations established by the Condition Assessment Report • Sourcing appropriate Asset Management practitioners to formulate the Entity's Asset Management Team • Training and briefing personnel, as applicable, such that the Asset Management System can be successfully developed, deployed, and maintained • Managing data quality such that information derived from the data is used to inform the Asset Management Strategy, and intelligent decision-making regarding the Entity's Assets
Service Providers	Responsibilities which are likely to be outsourced to Service Providers are as follows: • Collaborate with the Entity to develop an Asset Management Policy • Develop Asset Management System requirements • Understand, develop, prepare, and deploy AMS requirements • Develop the Entity's Asset Management System such that it meets the Entity's existing and likely future needs • Successfully undertake Change Management such that Entity operations are not negatively impacted by change process • Train Entity personnel to support the implementation of the Asset Management System • Effectively Manage Risk (i.e. through Risk Assessments and Method Statements – RAMS) • Deliver a program of Condition Assessments (CA), including: ○ Compilation of an Asset Condition Assessment Report ○ Establishing an Asset Hierarchy (showing criticality of assets based on data provided by the Entity)

Table 2: Responsibilities



6.0 PROCESS

Establishment of the Asset Management System shall follow the process outlined within Figure 1 (below). The process features 6 phases. The Asset Management planning component of the process highlighted within the diagram shall be explained within subsequent sections. Sections contained herein do not correspond directly with numbers contained within boxes (highlighted in orange) but highlighted features are covered within this document.

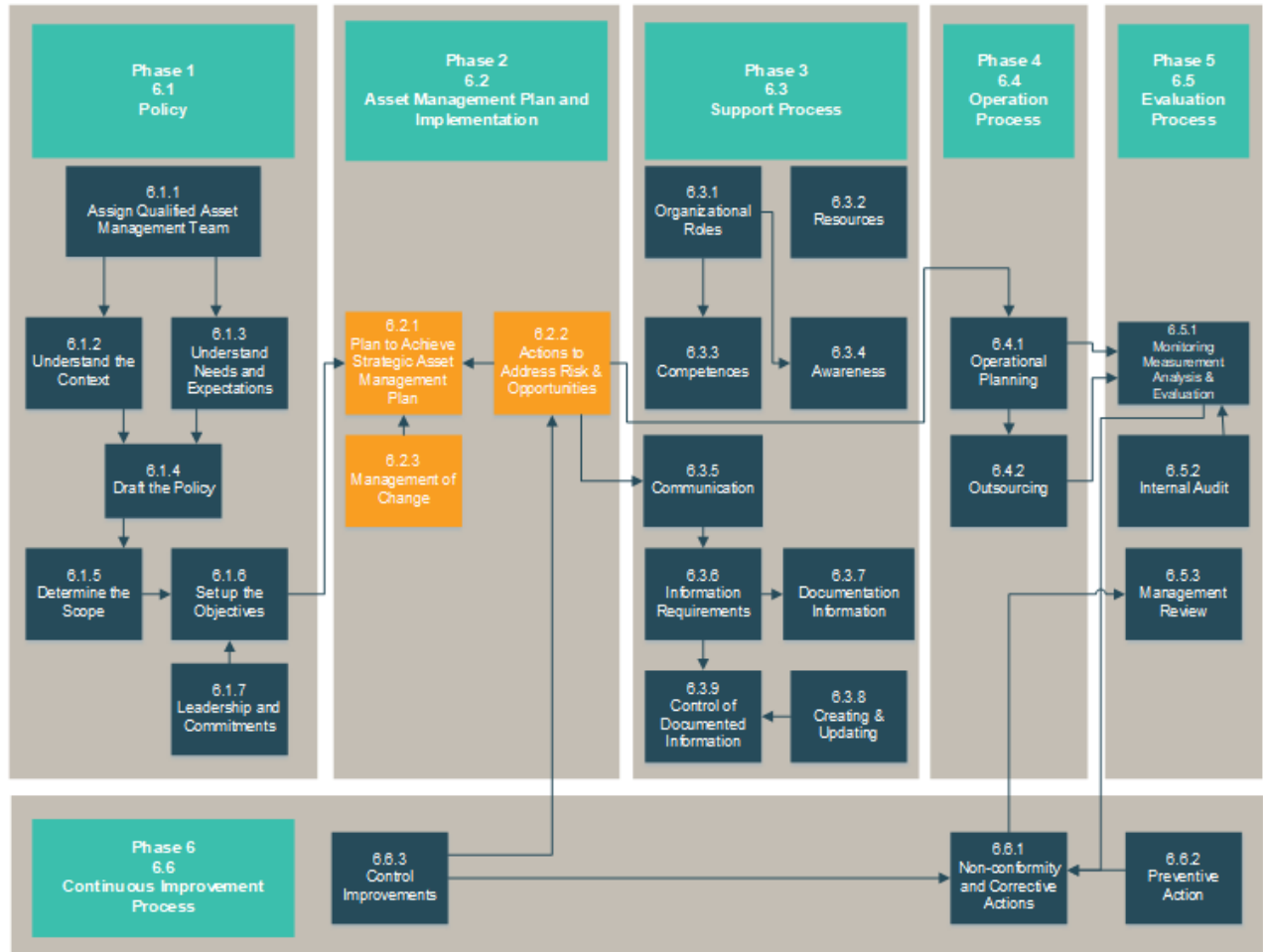


Figure 1: Establishing an Asset Management System



6.1 Developing Asset Management Plans

Following establishment and Entity Leadership endorsement of the AM Policy based on guidance set out within NMA&FM Volume 2, Chapter 2 – Asset Management Policy Procedure (EOM-ZA0-PR-000007), each Entity shall prepare a SAMP based on the Principles contained within the AM Policy. The SAMP shall be reviewed and updated in line with the AM Policy.

The SAMP shall be developed using the process outlined within Figure 2 (below).



Figure 2: Developing Asset Management Plans

Step 1: Risk Workshop

Asset Management team representatives, with involvement from other stakeholders (e.g. Entity Leadership, FM, Asset Management, IT, Service Providers, Finance, Procurement, Health & Safety, and Environment) shall conduct a Risk Workshop. The purpose of the Risk Workshop should be to identify risks and opportunities associated with implementation of the Asset Management System. Conducting a Risk Workshop will enable the Entity to:

- Identify stakeholder requirements of the Asset Management System
- Provide assurance that the Asset Management System can achieve its intended outcomes
- Inform AM Objectives
- Limit negative impact of Asset Management System implementation on Entity operations
- Identify conflicts between existing Service Level Contracts (SLAs) and planned service requirements
- Inform Risk Criticality and Asset Hierarchy
- Establish a Risk Register which shall:
 - Quantify Risks
 - Determine mitigation measures
 - Be updated in parallel with the Asset Management System throughout the Lifecycle

The Risk Workshop should specifically consider Risks associated with changes to existing processes and procedures brought about as a result of implementation of the Asset Management System. Factors influencing the successful implementation of the Asset Management System, may also be external to the Entity. Such influencing factors which may affect the Asset Management System (or components thereof) will consequently impact the Entity's ability to achieve its Asset Management Objectives. Risks associated with such influencing factors should be evaluated, mitigation measures identified, and Risk Controls implemented.

Examples of internal and external influencing factors include, changes to:

- The Entity's organizational structure; roles and responsibilities
- Asset Management Policy, Objectives, and Plans
- Processes or procedures
- Assets and technology (including new assets and those which are obsolete or whose function has changed)
- Legal and regulatory requirements
- Procurement
- Supply Chain Management
- Demand for products and services
- Demand on resources



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Outcomes of the Risk Workshop shall be used to inform all aspects of the Asset Management System, not only the SAMP. Therefore, an initial Risk Workshop shall be conducted following establishment of the AM Policy, and updated throughout the process of establishing the remaining components of the Asset Management System.

Further guidance in identifying and evaluating Risk is contained within NMA&FM Volume 12 – Risk Management.

Step 2: Set AM Objectives

AM Objectives set out, quantitatively and qualitatively, what is expected as a result of implementing the Asset Management System. AM Objectives offer a link between Entity organizational objectives, and the Asset Management Plan (AMP).

AM Objectives shall be:

- Aligned to the Entity organizational objectives
- Aligned with the Principles of the AM Policy
- Updated as part of the SAMP periodic review
- SMART (Specific, Measurable, Achievable, Realistic, and Time-bound)
- Monitored and reported upon using a set of agreed performance metrics
- Communicated to relevant stakeholders.

In addition to considering the impact of AM Objectives on assets, departments, users, and functions, the Entity shall also consider how to integrate sustainability and environmental themes within the AM Objectives. Guidance regarding sustainability is provided within NMA&FM Volume 17, Chapter 2 – Sustainability Procedure (EOM-ZN0-PR-000002).

The Entity shall incorporate feedback from key stakeholders prior to finalizing the AM Objectives.

Step 3: Develop SAMP

AM Objectives shall be incorporated in to a SAMP which defines:

- How organizational objectives are to be converted into AM Objectives
- The approach for developing Asset Management Plans
- The role of the Asset Management System in supporting achievement of long-term AM Objectives

While AM Objectives offer a link between Entity organizational objectives, and the Asset Management Plan (AMP), the SAMP explains how the AM Objectives shall be achieved.

Complete framework “Text for use” to developing the SAMP is included herein under in article 6.3 Figure-3.

Step 4: Develop AMPs

AMPs shall be established by the Entity based on the contents of the SAMP. AMPs shall specify activities, resources, and timescales required for individual assets, or groups of assets, to achieve the Entity’s AM Objectives, and consequently the Entity’s organizational objectives.

The Entity should develop a pilot AMP which shall be subject to review. Strengths and weaknesses arising from the review shall be captured within the revision of the pilot AMP, and the development of other AMPs.

The AMP shall be informed by, and shall make reference to:

- Asset Data Policy which mandates the Asset data structure and the Asset class metadata rules to be adopted across Asset Lifecycle
- Asset Management Software (AMS), which is a dedicated solution used to record and track each asset throughout its Lifecycle



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When preparing AMPs, consider:

- Number of AMPs required
- Decision making processes
- Resources
- Timescales
- Financial and non-financial impacts
- Performance evaluation criteria
- Review periods

The aforementioned considerations shall depend on factors such as:

- Asset class
- Asset hierarchy
- Number of assets

6.2 Continuous Improvement

As with all aspects of the Asset Management System, Asset Management planning documentation (i.e. SAMP, including AM Objectives outlined therein, and AMPs) shall be subject to continuous improvement based on guidance outlined within:

- NMA&FM Volume 2, Chapter 2 – Policy and Planning, Continuous Improvement Procedure (EOM-ZA0-PR-000003)
- NMA&FM Volume 5, Chapter 3 – Developing System Operating Procedures

6.3 Framework text for use

The following 6 pages of **Attachment 1** is a complete framework added to help in producing a Strategic Asset Management Plan (SAMP)



Attachment 1: Framework text for use to prepare the Strategic Asset

[Entity]

STRATEGIC ASSET MANAGEMENT PLAN (SAMP)

Asset Management

Prepared by:

Approved by:

Date:

Signature:

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Management Plan (SAMP)



CONTENTS

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1. EXECUTIVE SUMMARY

Provides an overview of the Strategic Asset Management Plan (SAMP) to highlight the following:

- Purpose
- Broad Strategy Statement
- Objectives
- Scope of the Asset Management System
- Explain how the SAMP is developed
- Frequencies to update the SAMP
- What are and who takes Responsibilities

Purpose to ensure senior executives and stakeholders to understand key elements are appropriate to the Entity's asset management Strategy. Diagrams and/or tables to show will be useful.

2. POLICY STATEMENT

Optional establisher of SAMP include here the related Entity's Asset Management Policy if it is not published separately.

Establisher or User stating with shall keep in mind that "all the asset management system parts should be scalable" and may suggest if for smaller Entities to combine documented information requirements into one document.

Policy statement, should be short and must be (in accordance with NMA&FM Volume 2, Asset Management Policy chapter.

Policy shall be appropriate to the Entity's purpose.

Developing Asset Management Objectives (use statements of principle rather than details – also refer to NMA&FM Volume 2, Asset Management Policy chapter.)

Policy shall articulate a commitment to satisfying applicable requirements (e.g. regulatory obligations, contractual requirements and any other obligatory commitments Including continual improvement of the Asset Management System

Be aligned to Entity's Plans and Policies.

3. INTRODUCTION

Purpose

Start with a brief description of the Role of SAMP, include links to other Entity's planning documents.

Asset Management Framework

(Framework may be separate documents referred to in this section.)

Describe the structure the Asset Management System (AMS).

Provide AMS structure chart, to show how it relates to the rest of the Entity, specifically to other strategic documents and policies.

Document the AMS Scope.

Make Reference to key processes and procedures used within Entity's referenced standards and procedures in NMA&FM



4. ORGANIZATIONAL CONTEXT

Analysis current status of the Entity as required by NMA&FM related Context Analysis, and provide sufficient details to allow user understand priorities – such as capacity growth, cost saving or maybe conforming to safety obligations. Including:

- Organizational issues (internal and external), Risks and Opportunities
- Challenges, forecast of new or sudden demand
- Needs and expectations
- Asset portfolio (AR), Asset Condition (AC)
- Opportunities (such as process maturity and, enhancement of resources utilization and staff competency)
- Any additional detail to support understanding priorities

5. RISKS AND OPPORTUNITIES

It is required that the organization to determine Risks and Opportunities related to Asset Management System. Describe these while conducting the asset management planning. Provide risk register or risk assessment. Utilize risk matrix or establish new one as required.

Risk	Consequence / Benefit	Likelihood rating	Risk / Benefit	Mitigation
XYZ	3	3	Medium	
OMP	5	5	Extreme	

6. PROCESS OF ASSET MANAGEMENT PLANNING

Formulate objectives to describe needs to be considered for the Asset Management. This section shall provide summary of the Entity's approach consistent over time to embrace confidence with Asset Management Objectives. The provided process inputs, the processes used to source the input information, the analysis methodologies applied and how the objectives were formulated shall support the high level of confidence in the drafted objectives.

The user, establisher needs to consider the following in the process:

- Objectives and context of the Entity's
- Needs and expectations o
- Information requirements
- Asset & Asset Management present expected performance
- Perform internal Audit and understand observations and nonconformities
- Management Review reports and findings

Minutes of meetings, workshop recommendations, management or O&M reports, may be referenced or included in appendices.

The actual objectives will be documented in the next section.

User / Establisher must explicitly document the planning process to achieve the Asset Management Objectives Planning. Including criteria documentation of decision making, processes in managing complete assets life cycle, resources, activities, responsibilities, timelines, performance, risks and opportunities.



7. ASSET MANAGEMENT OBJECTIVES

Asset Management Objectives shall be documented.

Provide the following information upon listing the Asset Management Objectives:

- Objectives must be (SMART) Simple, Measurable, Achievable, Realistic, and Time bound.
- Objective statements must be concise
- Define the acceptable criteria and how it will be measured
- Assign Responsible owners to deliver the Objectives
- Refer applicable Entity's Objectives in alignment with Policy, responsibilities and vision
- Objectives must made be for both Assets and Asset Management System.
- Objectives can be documented in tabular form:

Objective 1

Objective	[objective statement]
Measure (/ KPIs)	[Measured KPIs]
Acceptance criteria / Target	[Targeted (efficient) KPIs]
Performance %	$[(\text{Measured KPI} / \text{Targeted KPI}) \times 100]$
Timeframe	[Start date and End date]
Entity's Objective	[Cross reference to the applicable Entity's Objectives]

Objective 2

Objective	[objective statement]
Measure (/ KPIs)	[Measured KPIs]
Acceptance criteria / Target	[Targeted (efficient) KPIs]
Performance %	$[(\text{Measured KPI} / \text{Targeted KPI}) \times 100]$
Timeframe	[Start date and End date]
Entity's Objective	[Cross reference to the applicable Entity's Objectives]

8. STRATEGIC ASSET MANAGEMENT INITIATIVES

Some Objectives of the Asset Management may require actions to be coordinated across numbers of Plans. Those may be recorded under Strategic Asset Management Initiatives. This term may not be compulsory.



Asset Management Initiative / Action	Objectives Linked	Priority	Responsible	Timeframe

9. ASSET MANAGEMENT PERFORMANCE

This is optional to support compliance with – performance evaluation

Describe key Asset Management performance measures and targets required to meet Asset Management objectives.

Measures should link back to Asset Management Objectives, to demonstrate alignment.

This may also refer to external documents describing Performance Measures, targets and methods to monitor performance.

Asset Management Measure	Objectives Linked	Performance Current	Target Performance	Method

10. IMPROVEMENT

This optional section may include description or reference to the following:

- Processes to employ for improving performance
- For Audits Processes
- For Management Review Processes

11. CONCLUSION

Write a conclusion to include administrative items including next review date

12. GLOSSARY

Follow all definitions and terminology as used in the NMA&FM

- Asset
- Asset Management System
- Strategic Asset Management Plan (SAMP)
- Asset Management Plan (AMP)
- Asset Management Objectives

13. REFERENCES

- Document references used in this SAMP Template
- NMA&FM
- Asset Management planning & Implementation, Volume 2