GHD

Asset management maturity audit

Assessment report and improvement plan

Department of Health

22 June 2021

→ **The Power of Commitment**

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The Power of Commitment

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1.   Introduction

1.1   Purpose of this report

This report presents the findings of an asset management maturity assessment undertaken for the Department of Health (DOH) and an improvement plan. The scope of the assessment focussed primarily on buildings and associated services, however there was some discussion of biomedical equipment. Leased assets, vehicles and information technology were not included. The report is to inform DOH of the findings of the assessment and present the improvement plan subject to the scope and limitations in Section 1.2, the assumptions in Section 1.3 and throughout this report.

1.2   Scope and limitations

This report: has been prepared by GHD for Department of Health and may only be used and relied on by Department of Health for the purpose agreed between GHD and Department of Health as set out in Section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Department of Health arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) [00] of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Department of Health and others who provided information to GHD in workshops and interviews, which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

1.3   Assumptions

Assumptions made in the assessment are noted throughout the report and in Section 1.2. The maturity assessment assumes that the information obtained during the workshops and interviews, and from the supplied documentation, is an accurate reflection of the current state of asset management at the Department of Health, Tasmanian Health Service, and the hospitals, primary health and Ambulance Tasmania sites that were represented at those workshops and interviews.

2. Summary introduction

2.1 AM maturity assessment

This assessment was undertaken as a series of face to face and online workshops and interviews with key personnel. An interview with the Deputy Secretary Infrastructure provided a high-level view of the current state of Asset Management (AM) within the department. One of the factors affecting the maturity of AM was noted to be the historical organisation of health in Tasmania and recent restructures to the Tasmanian Health Service (THS).

Workshops were undertaken with the aim to understand the AM maturity across the regions. These workshops were undertaken in each of the regions for Launceston General Hospital (LGH) in the north, Royal Hobart Hospital (RHH) in the south, and in the north-west, North West Regional Hospital (NWRH) and Mersey Community Hospital (MCH). Shorter workshops were also undertaken with Ambulance Tasmania (AT), and with the Strategy and Planning team within the department. Despite the historical differences the AM maturity is low across all groups.

The overall finding rated the organisation as 25%, which is at the lowest end of the 'Basic' rating in the IIMM AM Maturity Framework scoring.
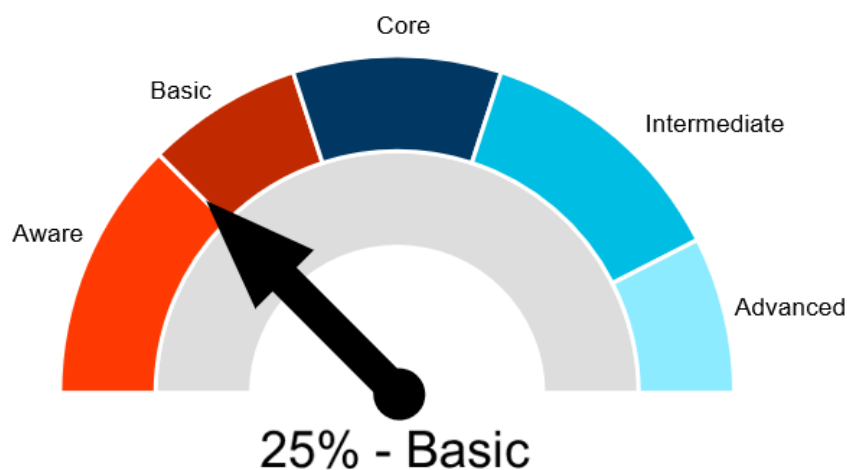
Figure 1   *Department of Health overall rating against IIMM AM Maturity Framework*

2.2 Assessment commentary

GHD through various reviews has seen similar results in other state health departments noting that some are well progressed with plans to lift AM maturity. This includes those states that have mandated an overarching AM framework such as the Asset Management Accountability Framework in Victoria.

Different asset classes will have different risk exposures related to service continuity and clinical outcomes. Run to fail strategies were noted in this assessment and for some asset classes this is considered appropriate. However, for some categories based upon risk assessment classed as critical, need to be more actively managed throughout their life cycle. These also require strong interfaces with capital planning processes to address life cycle and demand risks.

The achievement of risk-based management and planning requires higher levels of AM maturity and our improvement plan sets out the road map to reach this level.

Better practice sees the establishment of an overarching AM System at the departmental level, with roles and responsibilities outlining the documentation required at the health service level, required to inform capital planning processes and operational maintenance activities. These aspects have been included in our improvement plan.

The work involved in lifting AM maturity in the infrastructure space can be potentially leveraged in other areas such a bio-medical equipment, noting some specialised asset classes will have standalone processes.

The overarching AM System would have many elements typically present in such frameworks, but should specifically include the master planning process, roles and responsibilities at the departmental and health service level, the need for Asset Management Information Systems (AMIS) to support decision making, risk assessment methodology and integration with capital planning processes at the department and health service levels.

The THS website notes that previous there have been "two separate Executive committees across the Department and THS (that) has reinforced a two-agency culture and has led to disparate decision-making, inconsistent application of policy and direction and duplication of services." A new structure with a single executive structure, through the One Health structure, seeks to improve this. According to the message from the Secretary[1], the new governance and accountability changes seeks to:

– "Clarify and confirm local decision-making authority and accountability.
– Provide a clear and consistent strategic direction across the Department and Tasmanian Health Service (THS).
– Support coordination and clinical/business consistency.
– Provide a greater focus on community-based care and health system reform.
– Provide new opportunities for clinicians and consumers to inform and shape key decisions about how healthcare is delivered in Tasmania."

2.3   Improvement plan

Attitudes for improvement were noted to be a strength among participants. There is an understanding that current practices require significant improvement to meet good practice for AM. Operationally the AM practices are very reactive and consequently the management of reactive work was rated highly. To improve current practices will require increased planning and a move to more proactive management of the assets. Documentation of the assets, risks, and procedures will allow a focus on information-based decision making. While participants are keen to improve there is a gap in understanding of what best practice would look like, and differences in understanding between participants. Training sessions in AM fundamentals for a wide range of staff across different areas of the organisation will help to improve knowledge and develop a shared vision.

There is a good opportunity to build a new AM System, that is the management system comprising the processes and procedures, effectively from scratch. This will take considerable effort but has the benefit of enabling design of the system from the ground up. Our improvement plan is a two-year program of works focussed on quick wins and establishing the system.

As a result of the assessment, we recommend to re-build the AM System in a staged approach. Our improvement plan is a two-year program of works focused on quick wins to establish the framework. After this initial phase a new improvement plan should be developed to focus on the areas most relevant to the organisation.

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[1] https://www.health.tas.gov.au/about_the_department

3. Methodology

3.1 Framework

The assessment was conducted and reported on in accordance with the maturity framework documented in the International Infrastructure Management Manual, (IIMM).

The IIMM 2020 edition is divided into four sections as shown in Figure 2.
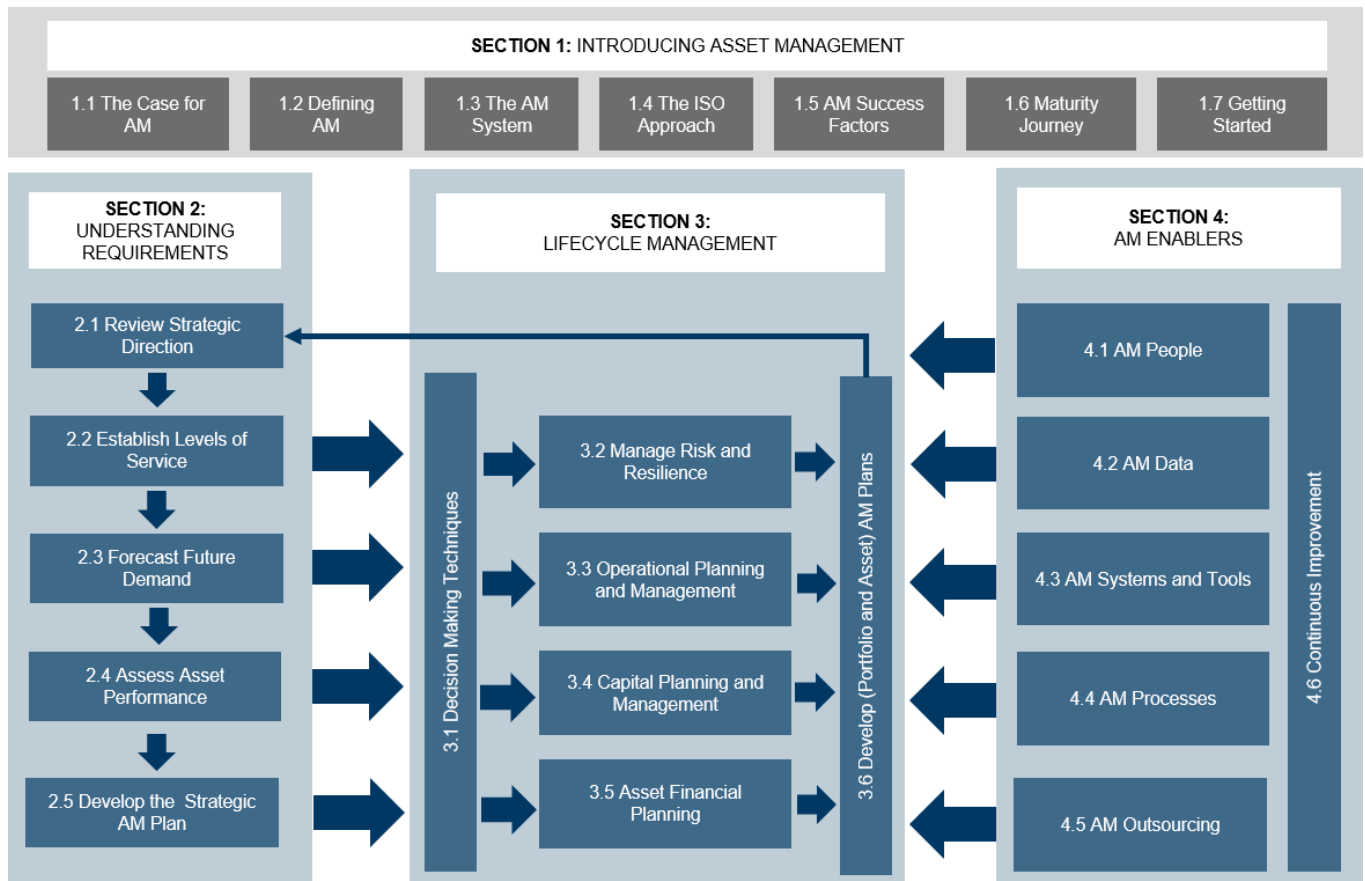
Figure 2   Structure of the IIMM (image modified from IIMM (IPWEA, 2020)

Sections two to four include the content included within the IIMM Maturity Framework.

Within sections two to four of the IIMM are a number of 'Functions'. This report assesses the DOH against these functions with the exception of 3.1 which IIMM considers to be covered within the various other functions.

The IIMM Framework scoring is from 0 to 100 with intervals of 5. The score corresponds to a rating as below with defined criteria relevant to each AM function.

– Aware (0-20)
– Basic (25-40)
– Core (45-60)
– Intermediate (65-80)
– Advanced (85-100)

3.2   Participants

The following participants took part in the assessment.

Table 1   Participants

Department of Health (face to face)
Shane Gregory – Deputy Secretary Infrastructure
Sharyn Cody – Director Asset Management Infrastructure Services Attended Royal Hobart Hospital, and Finance workshops
Stuart Jones – Project Manager - Department of Health Infrastructure Services Attended Strategy and Planning, Royal Hobart Hospital, Ambulance Tasmania, and Finance workshops
Strategy and Planning Workshop (face to face)
Adrienne Prendergast – Manager Strategy, Planning & Performance
Sophie Fitzgerald – Infrastructure Analyst
Launceston General Hospital Workshop (face to face)
Cameron Matthews – Regional Manager Facilities Management and Engineering Services (North)
Justin Smith – Team Leader – Building and Engineering
Steven Flett – Team Leader – Building and Engineering
Kylie Jarvis – Business Manager – Primary Health North
Varotee Banerjee – Systems – Building and Engineering
Royal Hobart Hospital Workshop (face to face)
Jon Hughson – Regional Manager Facilities - Management and Engineering Services Southern Region (dialled in)
Kenneth Bright – Facilities Manager
Paul Wilkins – Project Manager
North West Regional Hospital and Mersey Community Hospital Workshop (MS Teams)
Josh Fraser – Regional Manager Facilities - Management and Engineering - North West Regional Hospital and Mersey Community Hospital
Gary Burley – Facilities Manager Northwest Regional Hospital
John O'Hearn – Facilities Manager Mersey Community Hospital
Ambulance Tasmania (MS Teams)
Joe Acker – Chief Executive
Brendan Smith – Manager Infrastructure
James McManus
Finance (MS Teams)
Michelle Wickham – Director
Jacquie Oud – Senior Business Analyst
Glenn McMahon – Manager Financial Accounting

3.3   Documentation

Table 2 provides the documentation we requested, received from DOH and the results from our reviews.

A comprehensive review of documents has not been undertaken. However, we have looked at a small selection of the documents in more detail and have identified these as examples within our comments.

In general, the range of documentation is insufficient to support effective asset management. We suggest that a map of the future state documentation in the Asset Management System should be created and a new program to create those documents implemented. Where the same or similar documents already exist then these can be reviewed first, updated, and then transferred to the new AM System repository for ongoing use.

Table 2   Documentation and status

Document request	Documents provided	Comments
AM Policy	None	Copies of the following 2017 dated policies were provided. However, none were considered an AM Policy, and all were noted as being out of date. – Draft AMS Building Compliance Policy 2017 – AMS Security - Protecting People and Property Policy 2016 – AMS Building Management Policy 2017
AM Strategy SAMP	Multiple SAMPs were provided. Many with similar contents and duplication making it difficult to determine what is new information with each and what has already been read in another similar document.	
	Draft DOH SAMP 2020-2024 Draft THS SAMP 2020-2024	These documents are works-in-progress. The documents are wordy and appear to duplicate a lot of information from other documents, particularly government strategies. Many statements in the SAMPs regarding the documents and processes that are in place for asset management activities were at odds with the findings of the workshops
	Draft State-wide Mental Health 2019-2023 Draft Ambulance Tasmania 2020-2024 SAMP McDougall Building SAMP 2014-2019 Draft MCH SAMP 2015-2020 OHST SAMP 2015-2020 Primary Health Services SAMP 2015-2020 THO South SAMP SAMP 2020-2024 Distillation St Johns Park 2014-2019 SAMP 10 Binalong Road, Senior Citizens Club SAMP 2014-2019 2 Terry St 2014-2019 SAMP 7 Hull St (Abbeyfield) SAMP 2014-2019 LGH SAMP 2006 3 Archer St Rocherlea SAMP 2014-2019 39 Frankland St SAMP 2014-2019	Important AM drivers such as set objectives, aims, priorities or strategic direction are identified in some of the SAMP documents. However, these often appear to be generic and/or are not translated into AM actions. In other cases, there appears to have been a more detailed assessment undertaken. For example, in the Primary Health Services SAMP, Attachment 1 tabulates Strategic Direction items → Priorities → Aims → Outputs. However, during the Launceston workshop the SAMP was not referred to, despite many of the listed items in Attachment 1 directly addressing the questions being asked. This demonstrates that despite the SAMP being in place (although out of date) it has not been used in practice. We expect this is similar for the other documents also. It was evident in the Launceston workshop that the relevant SAMPs are either out of date or incomplete, and none of the documents are routinely referred to. The documents are too wordy and much of the content is the same across all documents making it difficult to find the new/unique information that is important to the specific SAMP being read.
AM Improvement Plan	Action List: AMS Implementation Plan to internal Audit -identified areas for improvement 2015	Copy of this action plan was provided, and it shows a prior understanding of the importance of AM. However, it is very high level, out of date and was not actioned upon.

Document request	Documents provided	Comments
Terms of Reference for any committees that have oversight of AM activities	Infrastructure Oversight Committee (IOC) Draft Terms of Reference	The provided terms of reference document are complete and clearly defines the roles and responsibilities of the IOC including its position in the hierarchy of the DOH.
Asset Management Framework/System documentation	Asset List - Site and Building AM Data Systems Used List	Provides information as to the location, type and use of the DOH buildings. This shows a minor consideration for AM. Provides information on all the currently used data systems, including the type of information and who uses the systems. Currently there are too many systems being used that make the AM processes excessively time consuming and complicated.
Organisational Chart(s)	New Organisation Structure 2020 IS Functional Structure Organisational Chart 2021	
Asset condition assessment reports	HVAC condition audit RHH 2019 76 Esplanade Oatlands Hand Over Inspection	Participants noted that condition reporting is ad-hoc and is not consolidated into one repository.
Processes and Procedures / Flow charts related to AM	Contractor Safety Management Procedure 2019 AMS Project Risk Register 2018-2027 Performance Assessment Tool SAMP Strategies SAMP Key Strategies Evaluation 2012-2017 Asset Management and Operations Team - Transition Task / Plan Responsibilities	The contractor safety management procedure provides a framework for the processes involved and the requirements for contractors to be employed in works for the DOH. While it is completed, it refers to policies that do not exist, and was out of date. The AMS risk register identifies risks throughout the AMS business operations and shows a clear need for development of AM throughout the department. The document was developed in 2017 and it is not clear if it has been updated since. It must be noted that no participants in the workshops identified this document when asked if risk assessments were used. The SAMP key strategies evaluation contains identified actions, the target to manage these actions and the status. They are mostly listed as 'Achieved'. However, there is no documentation to match or provide evidence for this. The transition task/plan responsibilities document identifies some AM activities and notes the current practices and responsibilities.
Any other relevant documents?	AMS Building Maintenance Request Form SAMP Template Guide 2015-2020 Workspace Data worksheet Form Accommodation Workspace Request Form	

3.4 Information systems

Prior to the workshops we also sent out a request for response relating to the information systems (software) in place. A list of software was provided with 30 different programs to manage the range of assets from buildings, DOH fleet, staff and contractors, communication, and maintenance (like CIP-EM).

Pulse (previously BEIMS from Zuuse) was identified as the primary asset management system used by all areas. It was noted that Pulse is not integrated with the TechnologyOne financial system. Opinions of the Pulse system varied from, having insufficient functionality to the system not being utilised properly.

Issues identified included:

> **"The replacement value of our assets is billions of dollars and our systems aren't adept at managing this level of value"**
>
> **Deputy Secretary Infrastructure**

- User error from a lack of system knowledge.
- The system being inaccessible or unresponsive when on mobile devices or in certain facilities due to weak or unavailable Wi-Fi.
- Security concerns.
- Technical support issues.

DOH is proposing to implement the Assetic suite of products as a new Asset Management Information System (AMIS). This will include lifecycle modelling capabilities, maintenance modules, and will be integrated with the finance system.

Honeywell and Siemens were identified as providers of the control/Building Management System (BMS).

The contractor management system (Concept Safety and Contractor Web) is used to manage contractors, safety, accessibility/sign in and out and inductions.

Contractors do not have direct access to the AMIS information. Contractors are required to request any relevant information they require; this is then provided to them from a staff member who accesses the AMIS.

Envizi and PME9 are used for monitoring and reporting on power, energy and emissions data management for sub-billing and reporting, (such as to the Climate Change Office).

There is no GIS system used by the department. Government data (TheLIST) can be used, showing the location of each site, but not services within the site.

There are no 3D or BIM models only traditional 2D drawings. There is no centralised drawing management system. As-constructed drawings are available only for some facilities. As there is no central system the drawings must be searched for individually and relies on the person doing the searching to find the correct drawing.

4.   Findings

4.1   Overall rating

25% Basic

Overall median rating
against the IIMM Maturity Framework

We have determined an overall median score across all functions and all regions of 25 % - which is a rating at the lowest end of the IIMM Basic Score rating.

We believe this rating is appropriate and have considered the criteria set out in IIMM for rating in each band against each AM function.

Generally, the rating demonstrates an organisation with:

– Some awareness of AM functions, noting some important gaps

– A developing AM culture

– Little to no effective AM documentation

– AM practices that are largely reactive

– Little to no effective planning, and any planning that is undertaken is based on past experience rather than a defined procedure and analysis of data

– No effective risk identification or controls

In some AM functions we believe the organisation is at the lowest end of the scoring range with no documentation, no effective practices, and no awareness of what good AM would look like or why those activities would be beneficial.

In other functions some regions rated highly, for example, in some responses to asset data questions. However, based on our other discussions and the response we believe that these high scores more likely reflect a gap in understanding of the requirements for good practice, and consequently participants were scoring themselves against a lower bar.

The quote above from the Deputy Secretary Infrastructure sums up the findings – "People don't know what they don't know." There is some understanding of what good AM practice could look like, and that current practices are not appropriate. However, there are notable gaps in knowledge and a better understanding of AM fundamentals is required to help staff understand how the improvements could be applied to their particular operating environments.

> **"People don't know what they don't know"**
>
> **Deputy Secretary Infrastructure**

4.2   Who is ultimately accountable for ensuring good asset management?

At the commencement of the workshops, all groups were asked the above question. It is important for all staff to understand who has accountability for AM if major changes are going to be implemented. A clear understanding of the accountability for AM sitting within the Department and the responsibilities at different levels within DOH, THS and on-site staff is critical to a properly functioning asset management system.

> **KEY FINDING »Workshop participants mostly agreed that ultimate accountability rests with the Deputy Secretary Infrastructure«**

There was some discussion in all workshops about it being 'hard to say' who was accountable due to recent changes However, there was general agreement that going forward the Deputy Secretary Infrastructure will be ultimately accountable.

4.3 Overview of performance

4.3.1 Strengths and opportunities

Patient surveys, complaints tracking, and CEC (Consumer Engagement Committee/Council) provide feedback on services which could be used in an asset planning process if such processes were in place.

Resource and work management, stock and inventory control, and prioritisation of reactive work orders were all noted to be areas of strength. This could be further strengthened with formalisation of procedures and documentation. The process of documenting is a good way to systematically examine procedures and may identify weaknesses and gaps that are not currently apparent to staff.

The management of incidents, from initial reporting, assignment of an investigator, undertaking assessments, identifying causes, and recommending and implementing future mitigation or prevention strategies, was noted as an area of strength by *some* participants, supported by the Safety Reporting and Learning System (SRLS) that manages the process. This is however contradictory to reports of recent WHS incidents that has identified current underutilisation of SRLS within Infrastructure Services. This is currently under review to encourage staff participation and to establish a reporting hierarchy to effectively report and manage safety incidents.

Attitudes and culture for AM improvement were also noted as strengths. This enthusiasm must be leveraged with effective communication and education throughout the role out of future AM system improvements. Clear articulation of the benefits of changes and training in new systems will assist in a smoother transition and maintain momentum for further improvements.

4.3.2 Weaknesses and threats

The lack of current documentation and a structured Asset Management System[2] is the primary weakness.

Policies are not in place for asset management or maintenance. Objectives for asset management generally, and for the maintenance and operations of the assets, have not been defined. This leads to a reactive maintenance management approach that may not always be considered appropriate.

Strategic Asset Management Plans (SAMPs) were identified but all were incomplete, out of date, or noted to be draft and not being progressed. While a detail review of the documentation provided was not undertaken, we noted that the SAMPs do not appear to address key criteria that we would expect from an effective SAMP. Many of the documents listed as SAMPs appear to be more of a typical lower-level document (e.g., Asset Management Plan, Asset Class Plan (AMP), Facility Plan etc.), but even at this level the documents are too verbose and do not contain the relevant information that would make them a useful document for effective asset management.

Notably there are no current or complete AMPs for the asset classes, and many other key documents do not exist. Most of the AM functions are undertaken ad hoc or as routine operations without formal documentation or processes in place.

It was noted that there is no formal planning process and no renewals planning not covered by the master planning process. No forward plan of works is available. It was noted that assets are replaced as they wear out and refurbishments are ad hoc based on wear and tear.

Processes for managing contractors was initially noted to be good, but later questioning identified that there is room for improvement in formalising processes and ensuring adequate resources are available to manage the contractors, inspect the work, and to manage timelines and budgets. Of note is that asset handover is informal and the current process does not ensure that as-constructed documentation is provided or that the quality of the works is checked.

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[2] i.e. the management system/framework, not the information system/software

4.4 Assessment

Each AM function in the IIMM Maturity Assessment Framework has been rated based on assessment of DOH achievement against the criteria for each maturity level. The rating for each function is presented in Figure 3.

For each of the IIMM AM Functions we have provided comments in Table 3.

Given the generally low maturity of asset management we do not see value in detailing every area of weakness. The table provides an overview of the current state and the focus moving forward should instead be on the Improvement Plan.
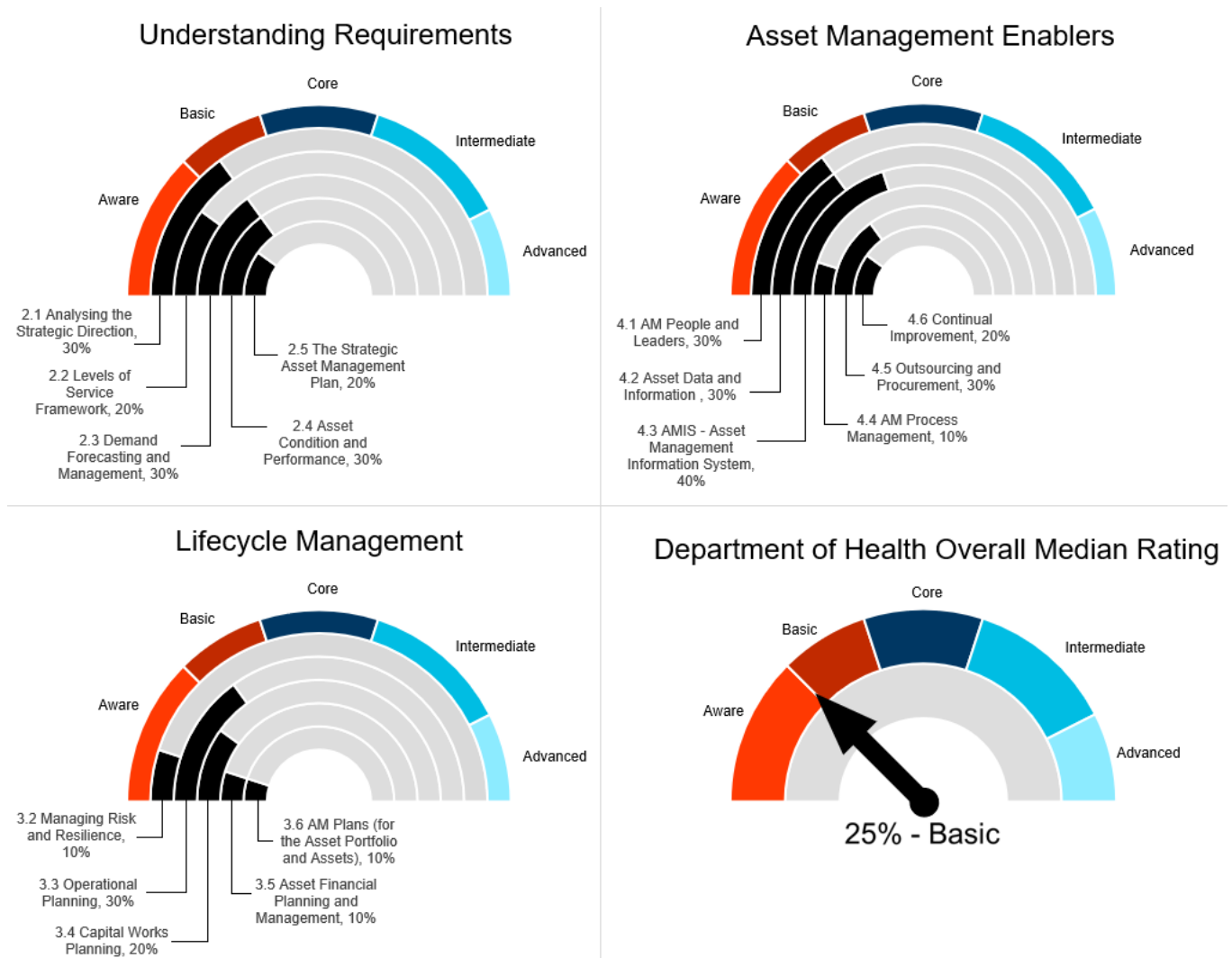

Figure 3   *Ratings against the IIMM AM functions*

Table 3   Assessment notes

IIMM AM function	Documentation requirements	Participant comments and notes
2.1 Analysing the Strategic Direction (AM Policy and Objectives)	There is no: – AM Policy – AM Objectives – Organisational strategic direction given to AM	There is an understanding of the strategic environment by participants, however strategic direction is not documented. Issues with lack of direction and changing priorities, not linked to demand or needs, were raised. Some participants noted that "there is no planning process". Annual planning is undertaken by gathering a list of projects and a group of people prioritising them. There are some guiding documents of strategies etc. but not used in day-to-day AM practice. Some participants noted that clinical demand drives asset acquisition based on clinicians making ad-hoc requests, rather than a longer-term plan. No-one was aware of any policy that informs decision making.
2.2 Levels of Service Framework	There is no: – Levels of Service Framework – Defined Levels of Service – Communications Plan	Levels of Service are not used in AM planning. Expectations are not defined or thoroughly understood. Communication and engagement with stakeholders are not routine, and input is not systematically used in planning or decision making. There are patient surveys, but these rarely inform AM activities.
2.3 Demand Forecasting and Management	Documented growth in demand and services projections are not documented. Some ad-hoc projections in masterplans Some historic patient data	Some demand data exists (such as patient numbers), however this is not used in decision making. Some participants suggested that clinical services studies should be prepared and reviewed every 6-12 months to reflect changes as they occur. These could then be reflected in the Infrastructure planning. Forecasting of needs with respect to maintenance is not undertaken. Participants noted that they recognise that maintenance costs are increasing and understand maintenance demands based on knowledge of historical reactive work conducted. Staff noted that masterplans are completed but become out of date quickly and are not translated into a plan for infrastructure that is useful at the AM operational level. Ambulance Tasmania noted that some demographic studies have been undertaken in the past to help identify trends. Some predictive analytics reporting is being done. However, these studies do not always flow through to planning to purchase the required sites for new facilities when they are available.

IIMM AM function	Documentation requirements	Participant comments and notes
2.4 Asset Condition and Performance	There are no: – Condition and performance data standards – Data collection guidelines – Condition or performance data recorded against the assets – Defined monitoring requirements	Ad hoc and PM condition inspections are focussed on identifying defects and do not provide a deterioration scoring that could be used for renewals prediction and lifecycle modelling. Some assigned PM tasks do address some issues of condition, e.g., thermographic imaging is for electrical switchboards. Some assets are connected to the BMS and managed by the relevant contractors. Critical items such as alarms and monitoring on gases, water, drug fridges etc were noted as examples. There is not a strategy or documentation to outline the requirements for telemetry/SCADA on any assets, or for the collection and analysis of performance data. Example: At LGH asset condition data had been obtained for a selection of critical assets. However, this is an ad hoc project and the first time this type of inspection had been undertaken. Ideally this information would be added to the asset register along with other condition report data, but this did not occur. Ambulance Tasmania noted that they are currently undertaking a baseline condition assessment of all their assets. A comprehensive and documented approach for asset monitoring is required. Several examples were raised where significant costs have been incurred repairing or replacing components of assets that are past their useful life when renewal of the whole asset at an earlier intervention point would have been more efficient. There is some on-call documentation providing procedures for troubleshooting, generally for new assets. Some participants expressed a good understanding of how condition monitoring could be used to provide a baseline for future maintenance and renewals budgeting.
2.5 The Strategic Asset Management Plan	There is no current and complete SAMP at any level (DOH, THS, or at each region or site). There is a lack of AM system documentation. There is no formal AM System.	The SAMPs that were provided are too verbose and do not contain the critical information that would make them a useful document to develop AM activities. AM System documentation does not exist. There is no AM Strategy and no map of documentation. It was noted by one participant that as far as they were aware the THS has never undertaken a review of services and strategic asset planning.
3.1 Asset Lifecycle Decision Techniques	Refer to below sections	Effective asset lifecycle decision techniques are not used resulting in very reactive approaches to asset management. There is no awareness of NPV, benefit: cost ratios or other similar methodologies being used in decision making.

IIMM AM function	Documentation requirements	Participant comments and notes
3.2 Managing Risk and Resilience	There are no: risk and criticality frameworks applied to assets. asset or AM related risks, or critical assets, identified consideration of risk in business planning and business cases	The response to COVID, in terms of managing changes in the business environment was noted to be good. Staff noted some environmental risks, such as snow loads, and an example of a building without air conditioning and issues on hot days. Despite this there is no assessed asset risk and no input to the planning process to manage the risk. The lack of formal documentation including operational manuals presents a major risk for the organisation. Critical assets are not systematically identified and are not documented. The criteria for identifying critical assets are not defined. An example was provided of a HVAC system failing, and only after the failure and subsequent reactive repairs was the system identified as critical, and now has a more appropriate set maintenance schedule. Ambulance Tasmania is currently undertaking risk assessment of sites for extended power outages to determine operability requirements. There are attempts to have redundancy and back up on critical assets. However, without a risk assessment and systematic approach this may not be effective. Participants were asked to assure us that they were confident that the right assets have the right back-up/redundancy and that the appropriate monitoring is in place. They were not able to convincingly make this assurance. Toolbox meetings and other informal/undocumented processes as a method of raising issues, improvement suggestions, and risks were noted to be good
3.3 Operational Planning	There is no: maintenance strategy operating manuals for most assets	There is no maintenance strategy, or maintenance planning, and no operating manuals for most assets. Most assets are run to failure. Some PM tasks are in place, but most are fix when it breaks. Participants were queried if Emergency Management Plans included details such as which assets to turn off and where in an emergency. The answer was yes. However, these assets are not identified in the asset register. It was noted that there is no budget setting process. Budgets are based on the previous years rather than on needs. One participant queried how it would be possible to budget maintenance, noting that it is all reactive. There is no strategy for determining which assets are provided with remote monitoring. However, participants were somewhat confident that they had the right monitoring in place. Patient requests and complaints processes were noted as an area of strength, particularly the tracking of the request and notifications provided throughout the process. Maintenance and calibration of tools and equipment was noted as an area of good performance. The management of spares and parts, and allocation of tools and equipment to undertake work orders was also strong.

IIMM AM function	Documentation requirements	Participant comments and notes
3.4 Capital Works Planning	There are no: renewals plans or projections of future renewals liabilities pipelines/databases of future capital works	Decisions around capital renewals are based on a run-to-failure approach. This means that renewals planning, and prediction is not undertaken, and decisions cannot be supported by evidence for service level or demand needs being met. Major new asset construction was noted to be political in nature and not part of a longer-term master plan. There was frustration expressed at the lack of input sought from infrastructure teams into all phases of new asset creation, from planning to design, construction, and handover. However, it was also noted that the data does not exist to make evidence-based decisions. Participants demonstrated an awareness of the benefits that more data and better processes could have in capital planning. Some participants noted that it seemed political, clinical and community needs were more important that engineering and facility's needs, and that engineering/facilities needs were always the first things cut from the budget. This leads to assets that are more difficult/expensive to maintain in the long run. Participants noted that they are given the opportunity for input into design of new major infrastructure but that it is often sought at too late a stage in the design process. Data required to drive decisions isn't available. For example, depreciation of assets at the level required, maintenance cost data, analysis of previous budgets, and analysis of past maintenance versus replacement.
3.5 Asset Financial Planning and Management	There are no: asset financial forecasts for renewals, improvements, operations, or maintenance revaluation reports asset financial indicators	There is no forecasting of future expenditure requirements. Budgets are set based on past years' spending and are not linked to any meaningful analysis of needs. There is no visibility of renewals/depreciation requirements. There is no connection between the asset system and the finance system.
3.6 AM Plans (for the Asset Portfolio and Assets)	There are no AMPs and much of the content that would usually exist in an AMP also does not exist or is not collated anywhere else that is accessible.	There are no AM Plans at the portfolio, regional or asset class levels. However, some of the SAMPs discussed previously could be better classified as AMPs. Participants noted that these are out-of-date, incomplete, or were completed as 'tick-box' exercises to meet Treasury requirements.
4.1 AM People and Leaders	Some PDs mention AM There is no: AM governance structure AM Steering Committee Communications Plan	Lack of resourcing was consistently noted as an issue in moving toward better AM. Particularly the staffing required to develop and implement the system, and the ongoing resource requirements to manage the asset data and planning processes. Across all participants there is a good attitude and desire to improve Some participants noted however that there may be some resistance to changing 'the way we've always done it', but that is the benefits are shown then people would be 'open and receptive'. Competence requirements were noted to be good among staff and contractors with respect to maintaining the correct licences and training to undertake trades work. Competence with respect to asset management planning and strategic skills could be improved with training. A capability and capacity assessment should be undertaken to determine needs to manage the AM system across the department and each of the regions. We would suggest a core AM team in the DOH supported by AM people in each region

IIMM AM function	Documentation requirements	Participant comments and notes
4.2 Asset Data and Information & 4.3 Asset Management Information Systems (AMIS)	Asset registers do exist, but the quality and completeness of data is questionable. There are no asset data standards Some conflicting advice was received but it appears that there is not documentation of the AMIS. Or if documentation exists it is limited in scope.	Asset registers were noted to be of variable quality. There are no data standards that define the level in the hierarchy that an asset is defined. There is not a parent-child relationship. As a result of not having a structural hierarchy of asset information, changes that have occurred to parts of assets have unknowingly impacted on the wider system that the changed assets provide the function for. This also indicates a lack of management of change considerations for asset management. We recommend that the basic and advanced asset data to be recorded, and that the process for adding, modifying, or removing asset records and data be documented Participants noted that the current Pulse system has issues with security and support. Mixed reviews were provided by participants with some noting that the system worked ok, others noting a lack of functionality and some acknowledgement of user error. There is a proposal to begin using the Assetic suite of products. The implementation of a new AMIS presents a good opportunity to build up the new system. Transferring the current data without any quality assurance or new procedures for improvement will also transfer the issues to the new system. Prior to implementing the new system, the DOH should develop as a minimum: – Asset Management Information System Strategy – Asset hierarchy and naming conventions – Asset data guidelines/procedures/definitions – During implementation of the new system DOH should develop and communicate: – User guides and specifications – Standard reporting templates
4.4 AM Process Management & 4.5 Outsourcing and Procurement	Some procedures exist for large projects --> SIIRP There is no AM System Manual or quality management system manual. There is no documentation of procedures for routine asset management activities.	Documentation of AM procedures is critical to ensure a consistent approach. Some participants noted that there is some contract management documentation, but knowledge of the documentation appeared to be poor, and the documents are likely not complete. There is no quality management system and no formal process for contract and specification review. Asset handover and commissioning is not formalised. There is no handover form. There is a risk that assets created or modified are not being captured, asset data and plans are not always updated with any changes. Oversight of contractors' work is inconsistent. Some checking of work is undertaken but this is not systematic. Payments are often automatic without requiring checking of work or confirming handover of any documentation/reports or updated drawings/manuals if anything has changed. There was a comment that the Victorian Project Management framework may be adopted. If this occurs, then integration with the AM System should be considered to maximise value from the framework. Updating of the registers to remove assets that are disposed of was noted to be good. The asset is removed and all associated PM tasks.

IIMM AM function	Documentation requirements	Participant comments and notes
4.6 Continual Improvement	Maturity Assessment and Improvement Plan are this report.	Participants appeared genuinely optimistic that thing are about to improve. There is an understanding that in the past AM has not been a priority with no one really accountable. However, with recent restructuring and this project being undertaken there is a strong desire to improve and good optimism about the future. As noted previously, participants identified that toolbox meetings and other informal opportunities to raise improvement ideas are working well with staff able to raise and discuss ideas. There was concern raised that maintenance is seen by general hospital staff as problematic in that it 'stops their ability to provide services'. Communication of the reasons for maintenance, i.e., that PM can minimise risks of unplanned and longer duration interruptions, is required to the broader hospital staff if a more proactive maintenance approach is to be successfully received.

5.   Improvement plan

We have developed several improvement projects that will begin to build an AM system for the Department. Our plan is summarised around the AM functions in IIMM to help provide focus and to provide a clear identification of the benefits of each project.

Within each project we have identified the tasks that are considered 'quick-wins'. These have been identified with blue diamonds ◆ and shading.

These tasks can be the completed relatively quickly after commencement of the Project and often are predecessors for other projects. The later tasks within the projects are trailing and can be developed over a number of months as the AM system is established.

5.1   Projects

The projects grouped as follows:

Immediate and commenced within 6 months

–   Projects 1 to 3 establish the program and should be commenced and completed as soon as possible.
–   Project 5A is to develop a quick-win SAMP to address immediate needs for a SAMP and identification of priority projects.
–   Projects 4 and 5B establish a structure and some of the content for an AM System Manual – to contain procedures and descriptive content about the AM System – and the long-term desired structure of the SAMP.

Commenced within 12 months

–   Projects 6 and 7 establish the levels of service, and risk and criticality frameworks.
–   Project 8 defines the asset management information system (AMIS) requirements and procedures. The project also determines the mandatory, desired, and optional data to be stored in the system.
–   Project 9 builds on the above projects to define the condition and performance monitoring procedures.
–   Project 10A develops and implements the inspections and program to improve the asset data in line with the requirements determined above. While Project 10B develops and implements the plan to transfer the new and existing data into the new AMIS asset register.

Commenced after 1 year

–   With the procedures and systems beginning to be implemented from the previous projects the improvement plan moves on to developing the procedures for using the asset data in decision making. Projects 11 and 12 address the procedures for capital and operational planning respectively.
–   Project 13 uses the above to develop asset lifecycle models.
–   Project 14 begins to pull all the information together into Portfolio AMPs and Asset Class AMPs.
–   With the basics of an AM system now established it is a good time to go back and review the work to date and develop the next improvement plan project scopes. Projects 15 is a formal process review to identify gaps in the system and Project 16 undertaken in parallel is a formal review of progress.
–   Project 17 is a proposed new independent maturity assessment to compare to this baseline report.

5.2   Asset Management Steering Committee

To drive the asset management system improvements, we have proposed the establishment of an Asset Management Steering Committee (AMSC) as the most immediate priority. The first tasks for the AMSC are described in Project 1.

5.3 Documentation

5.3.1 Core documents

As the asset management system is developed from effectively the foundational level, we have aimed to minimise the number of documents to be developed, instead focussing on the fundamentals and documenting progress in a smaller number of core documents. This approach will:

– Reduce the number of documents to be managed

– Allow for clearer communication with staff

– Reduce repetition in multiple documents

– Maintain a clear focus

– Reduce the number of smaller documents, and the number of places people need to look for information.

The core documents we propose are:

Table 4   Proposed AM documentation

Infrastructure Asset Management Policy	Asset Management System Manual	Strategic Asset Management Plan	Portfolio Asset Management Plans	Asset Class Management Plans
Overarching for the whole department.			One for each region providing an overview of the portfolio, these may be considered as mini-SAMPs or supplements to the SAMP	Not regionally based to ensure consistent management of the same assets regardless of location

Several outputs will be created in each improvement project. We have identified where these should be included within one of the core documents.

As well as Word/PDF documents, DOH should consider uploading the documents as pages on the intranet with each section a clickable link so that users can easily access the information that they require.

5.3.2 Quick-win SAMP

Project 5 is to develop a structure and begin populating content for a SAMP. We have broken the project into two phases. Project 5A. is the 'quick-win' SAMP, a rapid project to develop a SAMP in the short term for the purposes of immediate identification of priority projects, funding, and budgeting. Project 5B. focusses on the long-term future SAMP which will be more detailed, robust, and will better stand up to scrutiny.

5.4 AM team structure

A plan will need to be developed to determine how the AM team(s) is/are to be structured and resourced. We have not included this as an Improvement Project since it will be an organisational decision rather than an improvement for the AMSC to implement.

There would be benefit in considering centralisation of many AM functions, especially around the development of and maintenance of a single asset register, common procedures, and data improvement projects. There is also benefit in having asset managers 'on-the-ground' in each region and Ambulance Tasmania. This cross-functional team would help to avoid siloing of the AM functions away from the operational teams and give opportunities to actively engage with the teams to promote the AM System as it is developed. A virtual team reporting to a manager in the department but physically located across the sites is worth considering.

5.5   Program

As noted previously the projects are not a sequential list that can be completed in order. There is substantial overlap between projects, although we have identified the quick-win tasks that allow progression to the next projects while the remaining tasks are completed.

An indicative program is presented below.

Project	2021/22 Q1	Q2	Q3	Q4	2022/2023 Q1	Q2	Q3	Q4
Immediate projects								
Project 1. Asset Management Steering Committee	▓	▓	*1					
Commenced within 6 months								
Project 2. Asset Management Training	▓							
Project 3. Infrastructure Asset Management Policy	▓							
Project 4. Asset Management System Manual		▓	*2					
Project 5A. Quick-win SAMP	▓	▓						
Project 5B. Long-term SAMP		*3	*2					
Commenced within 12 months								
Project 6. Levels of service			▓					
Project 7. Risk and criticality			▓					
Project 8. AMIS scoping	*4		▓		*5			
Project 9. Asset condition and performance			▓					
Project 10A. Asset data improvement – collection			▓					
Project 10B. Asset data improvement – new asset register			▓					
Commenced after 1 year								
Project 11. Capital investment strategy					▓			
Project 12. Operational planning			*6		▓			
Project 13. Asset lifecycle planning					▓			
Project 14. Asset Management Plans					▓	*7		
Project 15. Process review						▓		
Project 16. Improvements progress review							▓	
Project 17. Maturity assessment								▓

Legend:
- Quick-win tasks
- Other tasks
- Ongoing updates/tasks
- Core document created
- Review

Timeline footer: 2021 | 2022 | 2023

* NOTES

1 - The AMSC will have an ongoing role to continuously improve the AM System.

2 - The population and improvement of the AM System Manual and SAMP will be ongoing as later projects are undertaken.

3 - Quick-wins involve population with information from the Quick-win SAMP and some updating.

4 - Project 8 may be accelerated if required to meet the schedule for the new AMIS implementation.

5 - There will be ongoing tasks throughout the AMIS implementation phase(s).

6 - Project 14 is noted to commence after 12 months, however if resourcing allows it may be possible to commence some quick-wins earlier.

7 - Portfolio and Asset Class AMPs will be created in prioritised order throughout this period, likely to start reaching completion after an initial phase.

Figure 4   Indicative improvement program timeline

From Project 6 to Project 13 the outputs will be used to populate the AM System Manual and/or the SAMP. A diagram showing the outputs from each Project populating these documents is presented in Figure 5. Only the major links are shown for clarity, there will be many more minor outputs and predecessors between the projects and the document compilation.

The suggested tables of contents for the SAMP and AM System Manual are discussed in the relevant projects – Project 5B and Project 4.
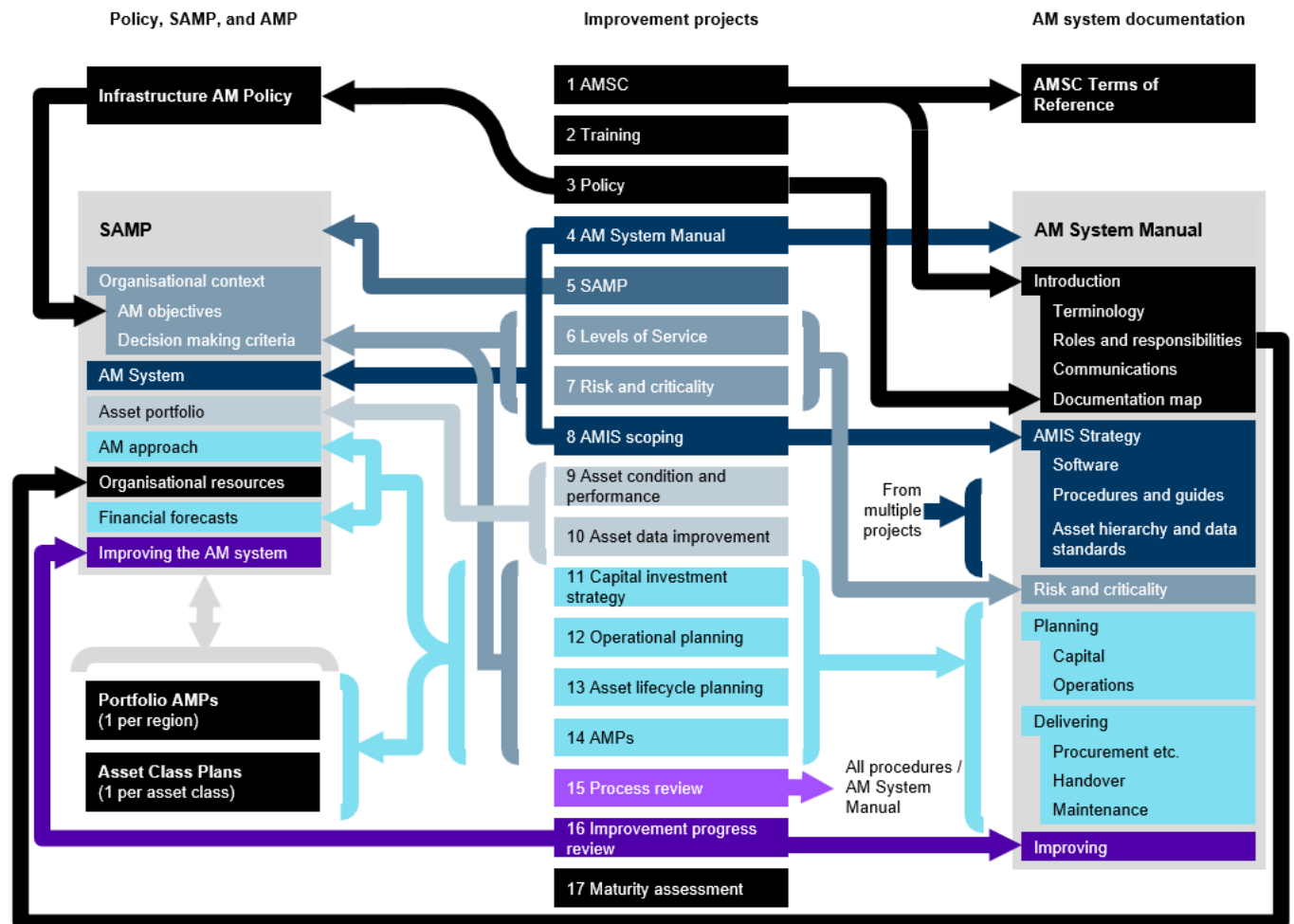

Figure 5   Improvement projects and document creation

5.6 Immediate projects

5.6.1 Project 1. Asset Management Steering Committee

Primary IIMM focus: 4.1 AM People and Leaders

There is currently an Infrastructure Oversight Committee (IOC) in place with a defined Terms of Reference. The IOC maintains a high-level oversight, approvals, budgeting, and governance role.

An Asset Management Steering Committee (AMSC) would be a lower-level group composed of managers and team leaders. The AMSC would have responsibility for implementing the AM Improvement Plan and developing the AM System. The AMSC be responsible for ensuring the systems, data, and processes are in place to support the provision of information to the IOC and others allowing for informed and data driven decision making

Initial tasks for the AMSC should include those listed below. Some of these items may have already been addressed by the IOC and for clarity this must be noted in the minutes and also documented appropriately in the Asset Management System Manual and/or SAMP.

Establishment

◆ **Quick wins**

– Identify the membership of the AMSC. Include key decision makers and leaders in the AM side of the business covering strategic, tactical, and operational levels. Representatives from finance, human resources, and clinical staff may also be invited from time to time.

– Write the Terms of Reference for the committee including upwards reporting requirements and approvals processes.

– Adopt a list of AM Terminology and definitions to be used to ensure common language is used through documentation and in conversation. We would recommend basing the list on the IIMM Glossary with additional terminology specific to hospitals and DOH added (e.g., Clinical service plans).

Definition of roles and governance arrangements

– Define a governance structure from Deputy Secretary to all relevant staff levels, including their function and specific roles.

– Develop a RACI (Responsible, Accountable, Consulted, and Informed) matrix or similar document that clearly show all relevant asset management roles to help define who is responsible for what, and the interfaces between them and other functions.

  • Review the RACI for resourcing gaps from an asset management perspective and evaluate resourcing options. Include consideration of competency required to fulfil the role and responsibilities.

  • Progress with HR to reflect the outcomes of the RACI in position descriptions for all AM roles, including engagement with relevant management.

  • Communicate roles to relevant staff and implement new/revised position descriptions including relevant KPIs.

– Identify governance arrangements for:

  • Ensuring alignment of the AM policy, SAMP and AM objectives with department objectives.

  • Assurance of the monitoring and effectiveness of the asset management system.

  • Review and approval of the SAMP and the AM Improvement Plan, along with their monitoring, reporting and implementation.

  • Monitoring of asset performance and condition, utilisation, and functionality, covering all asset classes, and for monitoring and evaluation of asset risk.

  • Management review of effectiveness of corrective actions, including prioritisation for critical assets and procedures for dealing with failures.

  • Delegation or governance endorsement for asset-related decisions depending on nature of the decision.

- Ensure the terms of reference, governance arrangements, and responsibilities are signed off and endorsed by all relevant high-level managers/executives. Wide endorsement should be sought
- Review this improvement plan, allocate a lead to each project, identify resourcing requirements, and confirm timelines and expectations.
- Monitor ongoing progress regularly.

Documentation

- AMSC Terms of Reference
- RACI Chart of AM functions and other governance arrangements to be included in the AM System Manual

5.7 Commenced within 6 months

5.7.1 Project 2. Asset Management Training

Primary IIMM focus: 4.1 AM People and Leaders

◆ **Quick win**

We strongly recommend attendance at an AM Fundamentals / Introduction to AM training course for key AM staff including DOH and hospital-based people. A common understanding of the fundamentals is essential to effectively implement the improvement plan. Attendance must include the roles that have participated in the workshops for this project and a representative from finance/accounting. A representative from the clinical side of the organisation could also be a benefit.

5.7.2 Project 3. Infrastructure Asset Management Policy

Primary IIMM focus: 2.1 Analysing the Strategic Direction

All documents need to be considered as part of a whole AM System rather than in isolation. Development of multiple policies in isolation can lead to duplication, contradiction or 'gaps' in their scope. A coherent set of policies, processes and procedures is required under the umbrella of an AM System.

– Develop a comprehensive list of AM requirements, processes, and systems. Identify the areas to be covered by the Infrastructure Asset Management Policy so that there is a clear scope boundary. Identify where the other areas outside the scope are to be addressed to ensure there is no 'gap' in coverage. (For example, is there or will there be a financial assets policy, capitalisation policy, procurement policy, valuations policy etc. that potentially already/will cover some areas of asset management?) There will need to be some investigation of existing systems in the department that may not be well known, for example, confirm the extent of any management systems for quality, health and safety, environment, contractors, documents, or projects.

– Develop the Infrastructure Asset Management Policy. Ensure that it:

- Provides the commitment to achieving asset management and strategic objectives.
- Complies with applicable requirements
- Refers to other relevant business policies and management system policies, such as Quality, Health and Safety, Risk etc. and those mentioned above.
- Commits to continuous improvement.

– Update any other management system policies/documents to ensure they refer to the Infrastructure Asset Management Policy where appropriate, for example the Capitalisation Policy.

– Communicate the Infrastructure Asset Management Policy into the wider Department, THS and at each site, such as through inclusion of the policy as part of inductions, posting on notice boards, and discussions at team meetings.

Depending on the usual format for policies within the department you may consider a multi-page detailed policy, as well as a supporting one-page summary that could be pinned to noticeboards and communicated in team meetings.

Documentation

– Infrastructure Asset Management Policy

5.7.3 Project 4. Asset Management System Manual

Primary IIMM focus: 4.2 Asset Data and Information
4.3 Asset Management Information Systems
4.4 AM Process Management

The Asset Management System Manual should become the go-to guide for AM. The document should be 'living', in that it is constantly being updated as the improvement projects are undertaken.

The Manual will become a repository for all information about how to use the AM System including data standards, how-to guides, procedures, and flow charts. It will eventually become a large document and it is therefore important that a well-defined structure is developed to allow the document to grow.

Structure

We propose that the structure of the document is put in place at the start, and sections remain in the document even if the content is not yet available – in place of content, references to the relevant improvement project could be included. This approach means the reader knows that information is coming and is still able to read the information that is available within the context of the system that is being developed.

Where some of the content is already covered in other documents or departmental guidelines, standards, or procedures then we propose the section remains in the manual but includes a link to the relevant other documentation. This ensures the completeness of the manual as a 'one-stop-shop' for asset management information, without duplicating information already covered elsewhere.

The best format for this deliverable could be an intranet site. In this way all documentation related to the AM System is readily available and logically filed. This would be preferrable to either a single large document, or multiple folders of documents.

As an example, GHD has recently updated its Project Delivery Portal. From within this site project managers are able to work through the full system of project delivery documentation including procedures, forms, guidance/tips, and templates in an easy-to-follow sequence. Some screenshots are provided below. Increasingly our clients are moving towards this model for much of their asset management system documentation.
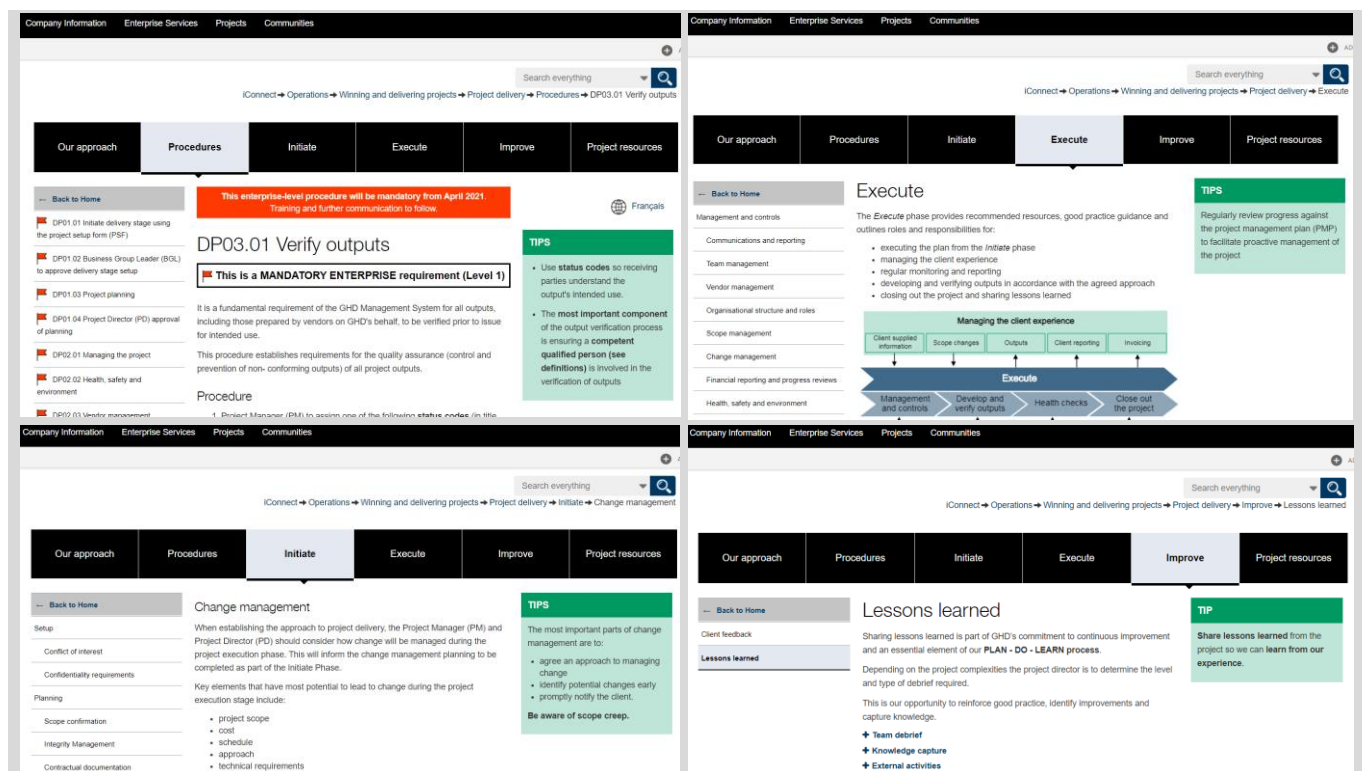

Figure 6   *GHD's project delivery portal sample screenshots*

Suggested table of contents

The document structure should be developed by the AMSC. We propose the following sections as a starting point for those discussions.

Table 5   AMS Manual suggested Table of Contents

Asset Management System Manual proposed section	Primary Improvement Project # reference
Introduction	**Projects 1, 3, and 15**
– Terminology	
– Roles and responsibilities / key contacts / organisational structure	
– Communications plan – how to engage with internal and external stakeholders	
– Documentation map	
Asset Management Information System (AMIS) Strategy	**Projects 8, 9, and 10**
– General information	
– Software systems	
– Document management	
– System procedures, and user guides.	
– Asset hierarchy and data standards	
Risk and criticality	**Projects 7 and 9**
– Asset criticality and risk assessment procedures	
– Asset condition and performance monitoring procedures and information standards	
Planning	**Projects 11, 12, 13, and 14**
– Capital and replacement planning procedures	
– Operations and maintenance planning procedures	
– Disposal planning procedures	
– Lifecycle cost modelling procedures	
Delivering	**Projects 6, 7, 9, 10, 11, 12, 13, and 15**
– Procurement and outsourcing guidelines, specification guidelines and standards	
– Contract management procedures	
– Asset handover procedures (internal and external)	
– Operations and maintenance procedures (and reference to relevant SOPs and other documents)	
Improving	**Projects 15, 16 and 17**
– Maturity assessments and tracking	
– Improvement plan program and tracking dashboard	
Standard forms	**Project 15**

Documentation

–   Asset Management System Manual established as a work-in-progress intranet site.

5.7.4   Project 5A. Quick-win Strategic Asset Management Plan

Primary IIMM focus: 2.5 The Strategic Asset Management Plan

◆ **Quick win**

The purpose of this project is to develop a SAMP within six months that can be used immediately to identify priority areas and justify project funding requests.

The SAMP will be a simple document to achieve a quick win, where development of the long-term SAMP will require significantly more time and effort invested in developing the processes needed before the content can be developed.

The quick-win SAMP can be used as a starting point for the long-term SAMP and should therefore follow a similar though streamlined structure. We have based the structure on the IIMM recommended table of contents as discussed in Project 5B. The proposed simplified structure and the relevant approach for each section is presented below.

This is only a suggested approach and should be developed further before commencing the project.

Suggested table of contents

Table 6   Quick-win SAMP proposed structure

Quick-win SAMP proposed section	Purpose of this section	Improvement Project
Introduction	Introduction and summary including presenting a summary of the current state of the assets and AM, the risks, and the proposed mitigation measures/projects including the funding required.	
Organisational context	Considers the policy and operating environment, customer outcomes and stakeholder needs, existing asset base condition and performance, corporate plans, external factors / risks, service demand, and competing priorities and available resources. Describes how the strategy integrates with the Corporate Plan, various service strategies and plans (e.g., Master Plans, Business Continuity Plans), to deliver asset management in a holistic manner	Where possible refer to existing documents or strategies rather than duplicating information. Include references to any existing government policies and strategies and make brief comment on how these impact AM. A tabular format will help to keep the content brief and to the point.
Asset Management Objectives	Provides the top-down drivers for all asset management activities. Asset management Objectives (AMOs) translate the AM Policy and corporate direction into high-level statements that guide AM activities and are used to derive levels of service and decision-making criteria for the assets.	Refer to Project 6, for detail of developing the AM Objectives and how these translate to Levels of Service. Ideally these objectives should be developed by all stakeholders, not just infrastructure. The IOC may be best placed to develop, or at the least to provide direction and review. The AM Objectives should include the input from various stakeholders. In the absence of documented departmental objectives, it may be necessary to draw these from multiple existing documents and policy statements. The source of these objectives should be included to be clear what is drawn from elsewhere, and what is new in this document. This will assist in future revisioning and allow users to seek more information from the source material if desired. The AMOs should be developed and circulated or workshopped for consensus before being formally adopted by the AMSC and IOC.

Quick-win SAMP proposed section	Purpose of this section	Improvement Project
Asset Portfolio	Provides an overview of the assets.	We suggest an A3 dashboard-style page is included here containing available information about the assets. Asset valuations, numbers of sites, age and condition should be presented. This may be categorised by region and by asset classes.
Critical assets and high risks	To identify the critical assets and the high-risk assets that should be considered for risk mitigation projects as a first pass plan. An asset risk register will be the output of this work. This can be built upon in later tasks.	Frameworks for criticality and risk are proposed to be developed in later improvement projects. In this quick-win SAMP we suggest a workshop-based approach to source the knowledge of the assets currently lead by individuals across the organisation. The workshops should be independently facilitated and systematically consider: - The difference between risk and criticality - How the AM Objectives are considered in determining risk and criticality - Identification of critical asset classes - Adoption of an interim risk rating methodology - Identification of high-risk assets and critical assets within the critical asset classes - Identification of existing mitigation, redundancy or back-up measures, and potential mitigation measures - Development of the mitigation measures into a list of projects and documentation of risk-based justification - Prioritisation of the projects
Forecasts	Provide a view of financial requirements identifying risk of backlog renewals, development of funding scenarios to allow informed decision making and budget setting.	Inclusion of historic budgets and actual expenditure should be included. The prioritised projects identified above should be costed and included in a program of works.
Improvement	Includes the maturity assessment process and establishment of aspirational targets and DOH's path towards these targets.	Assumptions and limitations of the above sections, including in the data, identification and assessment of risks, cost estimates etc. should be noted. The currently reactive nature of interventions should be discussed, and the proposed changes noted. Include a summary of this improvement plan as well as an improvement plan specific to the SAMP.

Documentation

– Quick-win SAMP.

5.7.5 Project 5B. Long-term Strategic Asset Management Plan

Primary IIMM focus: 2.5 The Strategic Asset Management Plan

Building on the outputs from Project 5A, develop the structure for the future long-term Strategic Asset Management Plan (SAMP) and begin populating the content. The SAMP will provide high level guidance and strategic direction as to how the DOH will use its assets to support service delivery objectives.

− To be useful the SAMP needs to be accessible to a wide range of people within the organisation. At the department's current level of maturity, the document should aim to be easy to read, well structured, full of useful information and not duplicating information that is available elsewhere. The document importantly also needs to be easy to revise and should, at least for the first 12 months, be a 'live', work-in-progress document that is continually updated as new information is developed in the other Improvement Projects. After this initial phase a regular schedule of revisions should be planned. After several years there will be less regular revision and a multi-year SAMP can be produced.

− With much of the procedural detail to be included in the Asset Management Systems Manual, the SAMP can focus more on being a higher-level, strategic document. A similar approach is discussed in §2.5.3 of IIMM.

− The SAMP should incorporate the Maintenance and Service Delivery Strategy and Capital Investment Strategy into one single document.

− We suggest adopting the IIMM suggested table of contents for a SAMP given in IIMM Table 2.5.2.2 (IPWEA, 2020), and presented in Table 7 below provides a simple but structured framework for the document that can be built upon in later revisions. Adopting the IIMM suggested table of contents means less effort seeking consensus on the structure and more focus on the content. Some modification may be required ensure alignment with Department of Treasury guidelines. When the department is further matured, then there will be a better gauge on the specific requirements and a new structure could be proposed.

We have annotated the IIMM table of contents on the following pages with the tasks required at this stage to begin compiling the document.

Documentation

− Strategic Asset Management Plan template developed, and some sections populated.

− For completeness, sections without content exist as headings with text identifying the proposed content, the improvement project and expected completion date, and the person responsible to receive any queries.

Suggested table of contents

Table 7   SAMP suggested Table of Contents

Strategic Asset Management Plan proposed section	Purpose of this section	Improvement Project
Executive Summary	Communication of the importance of asset management in the delivery of the DOH services to the broader staff body (not just those involved directly in Asset Management). Identification of the current state of asset management and the desired state.	To be developed over time. ◆ Initially this may consist of an introductory preface from the Deputy Secretary Infrastructure discussing why the SAMP is required and setting the vision for continuous improvement. It may address the current state of the assets (or lack of information on the current state), current practices (e.g., being reactive rather than proactive), and other issues as well as the road ahead to address them.
Organisational context – Corporate / organisational objectives – External and internal issues and stakeholder needs – Policy implementation – Strategic context – Key planning assumptions – Strategic issues and options – AM objectives	Provides the top-down drivers for all asset management activities. Considers the policy and operating environment, customer outcomes and stakeholder needs, existing asset base condition and performance, corporate plans, external factors / risks, service demand, and competing priorities and available resources. Describes how the strategy integrates with the Corporate Plan, various service strategies and plans (e.g., Master Plans, Business Continuity Plans), to deliver asset management in a holistic manner. *We have also proposed Portfolio Asset Management Plans to be created one for each region which can provide a supplement to the SAMP.*	◆ Where possible refer to existing documents or strategies rather than duplicating information. Include references to any existing government policies and strategies and make brief comment on how these impact AM. A tabular format will help to keep the content brief and to the point. Review AM objectives from the quick-win SAMP and update if desired.
– Decision making criteria	Identify systematic asset planning processes, including lifecycle considerations to meet service delivery objectives, cost-benefit, planning for uncertainty and opportunities for staging or deferral, and short-, medium- and long-term requirements. Includes process for identifying critical assets, prioritisation for activities, and procedures for dealing with failures.	This overview is to be developed as part of this project and continually improved as the AM system develops. Reference to the yet-to-be-developed levels of service (**Project 6**), future AMPs (**Project 14**), risk and criticality (**Project 7**) and lifecycle planning projects (**Projects 11, 12 and 13**) should also be included.
AM System – Scope – Role of the system in meeting objectives	Provide an overview of the AM System, its scope, and its role in achieving organisational objectives.	This would be an overview section. Reference should be made to the Asset Management System Manual where the relevant detailed procedures will be documented. (**Project 4**)

Strategic Asset Management Plan proposed section	Purpose of this section	Improvement Project
– Process for developing AM Plans	Describes how the strategy overlays the proposed Asset Management Plans (AMPs) or Asset Class Plans (ACPs) which set out the specific strategies and management regimes for each defined asset class over the asset lifecycle.	
Asset portfolio – Key statistics – Performance – Approach for developing portfolio plans and financial summaries	Provides an overview of the available data and the processes for improving that data. *We have also proposed Portfolio Asset Management Plans be created one for each region which can provide a supplement to the SAMP.*	◆ Prepare A3 dashboard-style pages containing the available information about the assets, an overall sheet may be supported by a sheet per region. Discussion should be included of the data gaps, uncertainties, and level of confidence in the data. As well as identifying the statistics that are not yet available, but which have been identified as useful to develop in the future. As the Asset Management Plans are developed there will be more interrogation of the data at a lower level, and improvements in knowledge of the assets can be rolled up to the higher-level statistics used in the SAMP.
Asset management approach – High level summary of approach for each AM function (e.g., Levels of services, demand, Opex and capex planning, risk) – Decision frameworks	Describes the AM (or service delivery) objectives along with performance monitoring and effectiveness measures for continuous improvement.	This overview will be developed at a high level here and can then be used as the basis of developing the details to go into the AMPs (**Project 14**). The Decision framework section should address the strategies for maintenance and service delivery, and capital investment and renewals.
Organisational resources – Key AM roles and responsibilities including top management leadership	Details of asset management roles and responsibilities, resources and service delivery options and arrangements including outsourcing.	Reference also to the AM System Manual which provides more detail in the RACI (**Project 4 and Project 1**)
– Capabilities and competencies (strengths and weaknesses)		At this stage we suggest only a brief comment in this section. As the AM System is developed then additional comment can be added, particularly noting areas where additional resourcing or training is required to deliver on the requirements of the AM System. A formal capability review should be considered after 12-18 months of this improvement project.

Strategic Asset Management Plan proposed section	Purpose of this section	Improvement Project
Financial forecasts – Assumptions and uncertainty – Asset valuation and depreciation forecasts – Opex and capex forecasts – Long term financial planning process	Provide a long-term view of financial requirements identifying risk of backlog renewals, development of funding scenarios to allow informed decision making and budget setting. *We have also proposed Portfolio Asset Management Plans to be created one for each region which can provide a supplement to the SAMP.*	At this stage, based on the findings of the assessment, we do not believe there is adequate information to complete this section. Inclusion of historic budgets and actual expenditure should be included, and reference made to the improvement project to develop forecasts later. (**Project 13**)
Improving the AM System – Summary of maturity assessment results, and Improvement Plan – SAMP improvement plan – Monitoring and reviewing	Includes evaluation by senior management and a regular review period. Includes the maturity assessment process and establishment of aspirational targets and DOH's path towards these targets.	Refer to this Maturity Assessment Report, and the Asset Management System Manual. The SAMP improvement plan identifies the gaps and areas for improvement specific for the SAMP document. It is a subset of the overall Improvement Plan projects. By this point the process of commencing the SAMP will have identified additional improvement projects, and additional scope to other projects, and the Improvement Plan should be updated to include these. Identify the required milestones for monitoring progress and proposed future revisions. (**Projects 15, 16, and 17**)

5.8 Commenced within 12 months

5.8.1 Project 6. Levels of service

Primary IIMM focus: 2.2 Levels of Service Framework

The establishment of a hierarchy of asset management objectives and performance measures and targets that provide a 'line of sight' between corporate objectives, stakeholder outcomes, and the performance of asset management activities.

Developing the framework

◆ **Quick wins**

– Conduct stakeholder needs analysis workshop to define who the internal and external stakeholders are, their requirements, and their requirements for recording financial and non-financial information, reporting requirements and communication requirements.

– Review organisational objectives, stakeholder outcomes and other overall organisational requirements and define asset management objectives that make the application of the business requirements specific to asset management, including economic criteria.

– Collate and review any current asset levels of service and performance requirements along with data completeness, coverage, and reliability.

– Develop asset performance objectives, levels of service, and performance measures/KPIs that align with AM objectives, considering current data availability.

– Develop and document the business approach for communicating to internal and external stakeholders. Develop templates for communications.

Implementing and monitoring

– Define asset performance data gaps and refine measures/KPIs to ensure that they are SMART (specific, measurable, achievable, relevant, and time-bound), efficient and of appropriate value.

– Establish current benchmarks and proposed targets for agreed performance measures.

– Obtain management review and approval for the suite of asset management objectives, performance standards and targets.

– Integrate with planning, reporting and management review processes.

– Ensure contractors with service agreements have the responsibilities and competency requirements documented in their contracts.

Documentation

– Develop the relevant sections in the AM System Manual, SAMP and the AMPs/ACPs.

5.8.2 Project 7. Risk and criticality

Primary IIMM focus: 3.2 Managing Risk and Resilience

DOH must establish appropriate risk management strategies and processes to support asset management, considering risks across the asset lifecycle and including processes to identify and maintain assets that are at risk of critical service failure.

This will require development of the Corporate Risk Framework and application to asset decision-making including risk-based decision tools and processes. In the absence of a department wide risk framework a high-level framework should be developed and updated if a corporate framework becomes available. From this overarching framework the AM specific processes can be developed. There was mention in the maturity assessment workshops of an existing departmental risk matrix, however the view was that this is not detailed enough to apply to assets.

◆ **Quick wins**

Critical Asset Identification

–   Develop criteria for asset criticality ratings.
–   Systematically identify critical assets for service delivery across all relevant asset classes.
–   Record criticality rating in the AMIS, against the asset in the asset register.

Risk assessment processes

–   Define a multi-criteria probability and consequence matrix for use in rating asset-related risks. Adopt the department wide matrix if suitable, adding additional criteria for asset-specific impacts.
–   Undertake a risk identification and assessment workshop to document the key asset risks, quantify the risk, and begin developing mitigation strategies. Also consider the need for remote monitoring or control systems on the assets (telemetry/SCADA).
–   Develop a process to collate, prioritise, approve, and implement activities (treatment plans) and actions on critical assets.
–   Document the processes and use in the development of the capital, operating and maintenance plans and lifecycle cost models. These will be documented into the relevant AMP/ACP once these documents are created.
–   Record risks and ratings against the specific assets in a risk register.

Business Continuity Plans, Disaster Recovery Plan, incident investigation

–   Consider criticality and risk identification and relevant to business continuity.
–   Review and update Business Continuity Plans etc. as part of periodic review ensuring they consider assets and asset management risks as identified above.
–   Review current suite of plans, to ensure they cover all relevant assets, asset/service risks to ensure continuity of critical assets for service delivery.

Ongoing improvement

–   Develop and implement a process to monitor and evaluate the effectiveness of risk management measures relating to assets.
–   Develop evaluation and review processes to formalise improvement of asset management practices as a result of any reviews of critical asset failures or incident investigation.

Documentation

–   Develop the relevant sections in the AM System Manual, SAMP, the AMPs/ACPs, and the Business Continuity Plans etc.
–   Update the asset register to identify asset criticality and risk attributes against the assets.

5.8.3 Project 8. AMIS scoping

Primary IIMM focus: 4.2 Asset Data and Information

Primary IIMM focus: 4.3 Asset Management Information Systems (AMIS)

As part of the Asset Management System Manual, develop a strategy for the implementation and use of the AMIS and the information or data within it.

The AMIS Strategy should consider the:

– Asset data recording, monitoring, reporting, analysis, decision tools and other requirements of an AMIS, including relevant asset information and performance reporting to government as required.

– Accessibility, useability, and control arrangements for all relevant staff and for external service providers.

– Requirements for the use of mobile technologies for data collection and reporting.

Document the AMIS

– Identify the software systems comprising the AMIS, their purpose, and the interactions/integration between them. Develop a visual map of the AMIS.

– Document the levels of access to each system and the responsible person for each.

– Define the connection between the AMIS asset register and the finance register. Work with the Finance team to determine the requirements of both systems, the levels of detail, and how they are related and linked.

– Develop a training program, suite of procedures, user guides, and introductory information to ensure consistent use of the system.

Develop the structure of the asset register and define the required information

◆ **Quick win**

– Define what is an asset, the asset classification hierarchy, the location hierarchy, glossary of terms and definitions, etc. – this sets the basic structure of the asset register

– Define asset and performance data requirements and standards, including minimum requirements for asset information, including for performance and utilisation, condition, criticality, risk, operating and maintenance costs, and other relevant data needed for asset management decision making, business cases and reporting asset information and performance data to the relevant governance as required.

– Consider a register that records the legislative requirements per asset class, and how to implement it in asset life cycle activities, e.g., maintenance planning, renewals timing. Develop, document, and implement a process to manage the impacts when a change or update occurs in a standard, etc.

– Document the mandatory, desirable, and optional asset information to be captured in the asset register. This is likely to vary for different asset classes, different levels in the hierarchy and different criticality assets. Significant effort and wide consultation are required at this stage to as the standards and procedures developed in this task will impact on the data collection in later projects, and the usefulness of the asset register in future planning activities.

Define the information required for new assets

– Define the asset information required for new assets including operations and maintenance manuals (hardcopy, electronic), as-constructed plans (CAD, PDF, BIM, GIS, etc.), and other asset information required from providers in order to populate the asset register. An asset register input template (spreadsheet) should be developed for providers to complete with the required information for transfer of information to the asset register.

– Develop an assets handover form identifying the required information that must be provided prior to acceptance of the assets. Develop standard clauses to be included in specifications setting out the required information and formats.

Develop asset data review and reporting procedures

– Develop a consistent process and requirements for data collection, management, validation, monitoring, management review and record keeping procedures, including asset register requirements and training at all levels.

– Ensure record keeping requirements meet operational needs and comply with relevant standards and include contingent and intangible assets.

– Ensure that AMIS has an owner/manager to maintain integrity of data.

– Include processes for regular review of information to ensure it is appropriate, accurate, complete, and up to date.

– Include requirements for reporting to Government on assets and asset performance and maintain integrity of data for reporting to Government.

– Ensure asset databases used for revaluation and reporting are consistent.

Documentation

– Develop the relevant sections in the AM System Manual, and the summary level information in the SAMP.

5.8.4 Project 9. Asset condition and performance framework

Primary IIMM focus: 2.4 Asset Condition and Performance

Asset condition and performance monitoring provides valuable information for use in renewals prediction, lifecycle modelling, and operations and maintenance strategies. To ensure the right information is being collected, and that the information collected is of suitable quality, a framework is required to support collection, management, and use of the data.

This project aims to define the suite of processes across all asset classes for monitoring and analysis of asset performance, including condition, utilisation, functionality, critical asset identification, proactive identification of failures, reporting, evaluation and management review / compliance assessment against asset objectives, performance standards and targets.

The project builds on the scoping of minimum data requirements identified in Project 8.

Condition inspection and rating

◆ **Quick wins**

– Develop procedures for what level of condition inspection (type of inspection and frequency) is required for different types and criticality of assets.

– Develop asset condition and performance data standards. These should set the definitions of the ratings in a guide so that condition assessments can be undertaken by different people using the same criteria in the ratings.

Following the above tasks, the asset data improvement project (Project 10) can commence.

– Develop a 'State of the Assets' type report to provide a summary of where the key performance risks occur across the asset portfolio. A one or two A3 page 'dashboard' style presentation would be suitable. This can be incorporated into the SAMP, and later into the relevant Portfolio AMPs. These sheets should be updated as additional data is gathered in other projects.

Integrating data into planning

Develop procedures for integration of:

– Asset-related outcomes from incident investigations into asset planning across all asset classes.

– Asset performance/condition monitoring into the corporate and strategic planning framework.

– Monitoring against established targets over time to determine whether assets are being managed effectively, underperforming or are costly to own and operate.

Review and improvement

– Development of QA processes to manage the asset condition and performance data, and to monitor how it is being used in planning processes.

– Development of evaluation and review of effectiveness of corrective actions.

– Periodic review requirements.

Documentation

– Develop the relevant sections in the AM System Manual with the procedures for asset data collection.

– Develop the summary level information in the SAMP and A3 dashboards of the available data – 'current state of the assets.

5.8.5   Project 10A. Asset data improvement – collection

Primary IIMM focus: 4.2 Asset Data and Information

Following the creation of the quick-win tasks in Project 9 there will be sufficient framework and procedures in place to begin a larger program of collection of asset data.

This project should run in parallel with Project 10B.

Asset data collection plan

Plan and implement an asset data collection program. Break the program into defined stages that can be undertaken in short sprints to avoid fatigue and so that progress can be tracked against set milestones rather than a long program that risks confusion if left incomplete. Set each sprint as a new project within the improvement plan.

- Focus first on critical assets, and high-risk assets. Then identify other groups of assets for later sprints.
- Inspect the assets and collect condition/performance data and at the same time collect mandatory and selected desirable data.
- Use the inspections as an opportunity to also check the asset register for accuracy and to identify required componentisation of the assets, and identification of assets not yet recorded (for example some valves, meters/monitors, electrical gear may not be individually identified but could be critical assets).

Asset replacement value

Replacement values against assets and components are required so that a renewals model can be developed to forecast future funding requirements.

– Develop a table of standard replacement costs against asset types and components that can be refined over time. At this stage it is important to have some values assigned to calculate an overall replacements budget, even if the costs estimated for individual items are inaccurate.

– Develop a plan to improve the cost estimates and include a project in the next Improvement Plan.

5.8.6   Project 10B. Asset data improvement – transfer to new asset register

Primary IIMM focus: 4.2 Asset Data and Information

We propose that this project runs in parallel to Project 10A. This will mean that while new data is being collected in 10A, this project will be developing the processes to transfer the existing and new data into the new asset register in the new AMIS.

- Undertake a gap analysis to identify data gaps against minimum requirements and develop a prioritised Asset Data Improvement Plan for closing the data gaps (expected to have short-, medium-, and longer-term requirements).

- Develop a systematic approach to transferring the existing data to the new asset register format. Do not simply import the data 'as-is' to the new register. Ensure there is a process for checking and correcting the data prior to transfer and for quality assurance checks after transfer. A formal plan should be developed for the population of the new asset register.

- Begin transferring data according to the approach above.

- Undertake an analysis of the new asset register and identify the outstanding issues as in dot point one.

- Update the Asset Data Improvement Plan. Focus on critical assets, and critical attributes. Critical attributes are those that will be useful in maintenance and capital planning. For example, asset age, condition, regulatory requirements, replacement value, and ensuring that these attributes are at a sufficiently granular level in the hierarchy to allow costs and planning to be undertaken at the maintenance managed item level.

Documentation

– Plan for transfer of asset data to the new AMIS

– Asset Data improvement Plan – include as project(s) in the next improvement plan iteration

– Develop the relevant sections in the AM System Manual, and the summary level information in the SAMP.

5.9 Commenced after 1 year

5.9.1 Project 11. Capital investment strategy

Primary IIMM focus:
  3.1 Asset Lifecycle Decision Techniques
  3.4 Capital Works Planning

3.5 Asset Financial Planning and Management
2.3 Demand Forecasting and Management
4.5 Outsourcing and Procurement

A capital investment strategy documents consistent approaches to the planning for, and acquisition of new assets. This should be an organisation-wide strategy. At this stage we suggest keeping it simple and incorporating it into the SAMP and AM System Manual until the organisation is more mature and at that point a stand-alone document may be considered. This project brings together the work of previous projects to develop a data-driven decision-making approach.

This requires developing consistent approaches for the identification of needs, options identification and assessment, prioritisation of projects, planning for new assets and the procurement of new assets in projects and programs.

Project identification, assessment, and prioritisation

– Articulation of the approach to capital investment, risk appetite, drivers.
– The process for determining demand/needs and referring to strategic documentation in making decisions.
– The process for assessing options including consideration of risk, recurrent resource requirements (financial opex and people/skills), check for compliance with relevant policies, standards, and regulations.
– The process for options identification and assessment; including non-asset solutions.
– The process for evaluating and prioritising potential projects considering alignment to objectives, Master Plans and needs; financial and non-financial benefits; risk and change management; and funding considerations.

Considerations include:

– Ensuring decisions are service driven with systematic identification of current and future service delivery needs. including planning for uncertainty – scenario planning or real options, adaptability, and wider consideration of alternatives for staging or project implementation.
– Short-, medium- and long-term planning requirements.
– Disposal planning and appraisal processes, considering relevant criteria and maximising financial benefits where relevant (e.g., fleet turnover).
– A process review period.

Delivery

– The process for planning for new/renewed assets including program and project management from concept development and design through to delivery.
– The process for determining the most appropriate delivery model for assets including consideration of risk, resource requirements, and lifecycle considerations in operation and maintenance.
– Documented procedures for the categorisation of drivers for costs – e.g., renewals, regulatory requirements, efficiency improvements etc. this will allow reporting against drivers to give a better understanding of how expenditure is being allocated.
– References to the procurement policy and processes for management of outsourced activities (e.g., contractor management procedures and templates) to ensure outsourced services meet the standards required.

Documentation

– Various procedures and documentation, population of relevant sections of the AM Systems Manual and AMPs/ACPs

5.9.2   Project 12. Operational planning

Primary IIMM focus: 3.1 Asset Lifecycle Decision Techniques
3.3 Operational Planning
3.5 Asset Financial Planning and Management
2.3 Demand Forecasting and Management
4.5 Outsourcing and Procurement

A maintenance and service delivery strategy documents consistent processes and approaches for maintenance and operation of all assets. This should be a business-wide strategy that is used to guide input to AMPs/ACPs. At this stage we suggest keeping it simple and incorporating into the SAMP and AM System Manual until the organisation is more mature and at that point stand-alone documents may be considered.

This requires developing consistent processes for monitoring and analysis of the maintenance program to allow optimisation, including appropriateness of maintenance efforts and suitable resources.

– Identify the major maintenance services and service performance, cost categories and maintenance risks, aligned with critical assets,
– Identify areas where potential improvements can be made in service delivery, risk mitigation and efficiency.
– Identify current compliance, reactive and preventive maintenance activities and consider the maintenance regime that is best suited to each asset / asset class.

The work in this project will mostly be used to populate the AM System Manual (Project 4), the AMPs/ACPs (Project 14), and to create procedures.

Documenting maintenance activities

◆ **Quick wins**

– Provide documentation on the range of maintenance services provided, e.g., hydraulic, HVAC, mechanical, electrical, ICT, inspections, condition assessment, performance measurement. This will create a range of documentation, much of which can begin to populate the relevant AMP/ACP.
– Document procedures for maintenance task assessment, prioritisation, and allocation. Define standard timeframes for completion / response times.
– Develop a process and standard for the identification of remote monitoring and controls (telemetry/SCADA) requirements, standard equipment specifications etc. Assess the current assets and identify any assets where additional monitoring or control is required.
– Develop, document, and implement procedures for the categorisation of costs (e.g., CM, PM, labour, materials, contractor) and recording of costs against the applicable asset.

Maintenance review

– Identify maintenance data collection, recording, analysis, and reporting requirements using the AMIS. For activities and services outsourced, update procurement procedures to ensure competency requirements are included in the service and contracts.
– Develop a maintenance plan scheduling preventative maintenance tasks and early interventions to reduce reactive maintenance. Determine how PM tasks are prioritised given limited resourcing.
– Procedures for review and update of Operational Manuals, Service Plans, and emergency response plans.
– Define management review requirements to ensure maintenance effort is effective and efficient in delivering to required performance standards and levels of service.
– Identify resource requirements for both initial and ongoing monitoring and analysis of the maintenance program.

Outsourcing requirements documented in the AM System Manual

– The process for determining which services are outsourced, including risk assessment and management, the service scope, and boundaries, and how the service will be managed.

- Include processes for sharing of knowledge and information between the Department and its contracted service providers.
- Processes for conducting Performance Evaluation Reviews of contracted service providers including consideration of the supply of asset information. References to the procurement policy and processes for management of outsourced activities (e.g., contractor management procedures and templates) to ensure outsourced services meet the standards required.

Documentation

- Various procedures and documentation, population of relevant sections of the AM Systems Manual and AMPs/ACPs

5.9.3   Project 13. Asset lifecycle planning

Primary IIMM focus: 3.1 Asset Lifecycle Decision Techniques
3.4 Capital Works Planning
3.5 Asset Financial Planning and Management

Asset lifecycle planning models forecast future capital and operating expenditure required to maintain the desired levels of service. Given limited funding the modelling can also forecast and quantify the increased risks because of not meeting the estimated expenditure. This allows decision makers to have better understanding of the implications of funding decisions.

◆ **Quick wins**

– The quick win tasks are to undertake a very high-level estimate of future renewals liability and maintenance costs. This will be subject to many assumptions and based on incomplete data, but it will provide the first pass estimate from which future refinements can be made.

– Compare the finance system valuations of the buildings to replacement cost estimates and typical componentisation of the building by asset class (structure, fit out etc) obtained from a source such as Rawlinson's Construction Handbook. Recent actual replacement costs should also be considered where available. Typical asset class costs can then be used to convert the finance valuation to typical renewals estimated cost for each site.

– Apply typical asset lives against each asset class and the actual or estimated asset ages.

– Model the estimated renewals liability over the next 30 years.

– Using historical costs model the maintenance costs over time for reactive and preventative works, labour, materials, and contractors. Look for any patterns evident due to aging of assets and if possible, predict out over the 30-year timeframe.

Undertake lifecycle modelling

Undertake short, medium, and long-term lifecycle modelling to predict future liabilities.

– Consideration of inputs from – SAMP (including maintenance and service delivery strategy, capital investment strategy), asset management policies, Master Plans and other policies, strategies, and plans.

– Consider how asset age and condition data, and asset criticality and risk data are used the approach for asset renewals and maintenance (e.g., early intervention or run-to-failure strategies) and in the prioritisation of works given limited budgets.

– Undertake modelling for short-, medium-, and long-term planning of predicted renewals funding requirements.

– Conduct a comparison to current funding levels and identify the 'gap'.

– Where a gap exists, identification of the expected deterioration in asset condition, service provision or risk profile because of different funding levels.

– Use the outputs from the short, medium, and long-term models to inform future budget setting and resourcing levels.

Documentation

– Renewals and future expenditure requirements forecasts.

5.9.4   Project 14. Asset Management Plans

Develop Asset Management Plans (AMPs) or Asset Class Plans (ACPs). At DOH asset classes may cover buildings (possibly considered by location and/or type of service), infrastructure, mechanical equipment etc. These plans would set out the specific strategies and management regimes for each defined asset class over the asset lifecycle.

We suggest that the number of AMPs/ACPs be limited initially to keep the system simpler and easier to manage. We propose the following documents:

– Portfolio AMP – An overarching AMP for each region and Ambulance Tasmania, all using the same template.

– Asset Class Plans – Specific plans for high-level asset classes developed across the whole organisation to ensure a consistent management approach for the same type of assets regardless of where they are located. We suggest a short-list of five plans developed initially which can be broken into more granular plans as more detail is available. Our suggested plans are below, but this should be discussed within the AMSC and a consensus reached prior to commencing the plans.

- Biomedical services (gases, critical power etc.)

- Biomedical equipment

- Building services (hydraulic, mechanical, electrical etc.)

- Buildings and grounds (structure, fit out and fabric, roads, carparks, grounds etc.)

- Telemetry, control systems, and communications.

Considerations include:

– Ensuring consistency with SAMP

– Integrating long term planning in development of AMPs/ACPs based on future service needs and demand as detailed in relevant plans, e.g., Master Plans or Renewals Plans and other management plans.

– Document the asset base, its service performance requirements, current and future performance, condition, and capability/utilisation.

– Document the critical assets and asset risks.

– Whole of life risk assessment and criticality assessment that integrate with corporate risk processes and proposes risk management measures and plans to mitigate risks including preventive management.

– Long term investment and performance profiles.

Document the process for developing and updating Asset Management Plans.

Documentation

– Portfolio AMPs

– Asset Class Plans.

5.9.5 Project 15. Process review

Primary IIMM focus: 4.5 Continual Improvement
4.4 Process Management

By this stage there should be numerous processes and procedures developed and it presents a good time to implement good practice process management.

The project is to systematically review the Asset Management System Manual, SAMP and other documentation that has been created.

– Review of organisational context and objectives.
– Review and updating of the scope and boundaries of the AMS, including interaction with other DOH management systems.
– Review of governance, leadership, and accountability arrangements.
– Managing of asset condition and performance monitoring, evaluation, and reporting, including integration of asset performance monitoring into the corporate and strategic planning framework.
– Managing of asset data management and information systems.
– Arrangements for communication and promotion of asset management.
– Ensuring consistent processes across all asset classes

Develop/update a documentation and resources map for distribution to all staff involved in AM to ensure understanding of the available resources, plans and guides for undertaking their tasks and the wider framework they operate within. Clearly identify the status of documents; current, draft/in-progress, and proposed.

An Asset Management Process Map can be utilised to provide supporting detail to the SAMP and will reveal gaps in processes for more detailed documentation. A process map could potentially depict current 'as is' processes, and a further version could depict the desired state 'to be' processes. The process gaps should be prioritised and a path towards completion of gaps included in the Improvement Plan.

– Develop a high-level integrated AM process map that:
  • Focuses on stakeholder outcomes and requirements.
  • Integrates asset planning with service delivery.
  • Includes asset lifecycle assessment process.
  • Is consistent across all asset classes.
  • Includes AM continuous improvement.
– Includes requirements for:
  • Monitoring and recording asset condition and performance.
  • Risk-based processes for asset decision making, including review and monitoring of risk management processes for assets.
  • Corrective actions including prioritisation for critical assets.
  • Dealing with critical asset failures.
  • Monitoring and reporting compliance.
  • Management review of effectiveness.
– Depicts how information flows between asset management and other functions and the Asset Management Information System (AMIS).
– Integrates asset performance management outcomes with the Corporate Risk Framework.
– Undertake revisions to the SAMP and other documents that may be required as a result of the findings/recommendations of the process mapping.

Conduct a full review of the Asset Management System to ensure it is meeting the intended outcomes of the system, including:

– Review and update of asset management objectives so that they have an objective or target to achieve. Review to ensure alignment with the updated strategic objectives.

- Review and update internal and external factors to the Asset Management System, using a systematic approach.
- Review the Infrastructure Asset Management Policy, to ensure it provides the commitment to achieve the objectives.
- Develop and document the management system review process. The asset management system review should include:
  - Status of actions from previous management reviews
  - Changes in external and internal issues that are relevant to the asset management system
  - Information on asset management performance including trends in:
    - Non-conformities and corrective actions
    - Monitoring and measurement results
    - Audit results.
  - Asset management activity
  - Opportunities for continual improvement
  - Changes in the profile of risks and opportunities.
- Ensure achievement of asset management and organisational objectives.

5.9.6 Project 16. Improvements progress review

Primary IIMM focus: 4.5 Continual Improvement
4.1 People and Leaders

Continual reporting of progress to the AMSC, reassessment of priorities, and refinement of the improvement projects scope should be a continual process. However, we also see value in undertaking a formal review of progress to date, reassessment of priorities and development of the Improvement Plan for the next period.

Review asset management resource requirements to ensure that all AM functions are appropriately resourced, especially in relation to roles identified in the improvement plan that are not adequately resourced, do not currently exist, or are not allocated, including:

– Maintenance analysis and optimisation.

– Management and delivery of an audit regime for AM processes and effectiveness of the AM system.

– Monitoring of asset performance and condition, utilisation, and functionality, covering all asset classes.

– Assessment, monitoring, and evaluation of asset risk and criticality.

– Asset lifecycle planning and decision making.

– Management review of effectiveness of corrective actions, including prioritisation for critical assets and procedures for dealing with failures.

– Seek approval for any identified structure and resource requirements, considering overall business and financial constraints and efficiency requirements. Implement structure and resource improvements.

Review and update the AM Improvement Plan (AMIP)

– Monitor progress to date and report to AMSC

– Check alignment with policies, strategies, and risks that have been identified to date.

– Review and prioritises improvements against corporate objectives, business needs and constraints.

– Develop detailed project scopes for the next 12 months and assign responsibility to manage, report and implement.

– Report to the AMSC for review and approval.

5.9.7 Project 17. Maturity assessment

Primary IIMM focus: 4.5 Continual Improvement

– We recommend that an independent maturity assessment, similar to this one, be undertaken at 2 years.

Documentation

– Maturity assessment report

5.9.8   Other projects

Future projects may consider:

- Implementation of procedures to ensure that the tasks in the current improvement plan do not become once-off actions. For example, identification and rating of asset risks must be continuous, the risk register should be live with new risks added, and mitigated risks removed or downgraded as appropriate. Documentation should be added to a register for review cycles, including the Policy, procedures, SAMP and AMPs.

- Further development of levels of service for different asset classes.

- Data improvement projects, focussing on closing gaps in the asset registers, adding additional fields to the data. Develop a rolling program of condition assessments across all assets. Implement a procedure to allow updating of condition ratings at any time, for example when an asset is being worked on this could trigger a new condition inspection at that time.

- Implement an Opportunities for Improvement Register so that all staff can raise an improvement request to systems, procedures, or processes.

- Implement a Lessons Learned library.

- Further development of maintenance and operations manuals, continual improvement in maintenance systems to increase preventative maintenance and decrease reactive/unplanned activities.

- Further refinement of the lifecycle cost model. Improve the unit costs used in the model for renewals and for maintenance. Develop the model to allow modelling of the balance between replacements, maintenance, and risk costs. Provide a reporting platform from the model and updates to AMPs. Use the outputs in development of business cases and funding requests.

- Adopt standards for construction as-constructed information including manuals and 3D models ready for a future BIM system.

- Undertake a project to review existing asset manuals and drawings. Implement a records management system and link the documents to the assets. Provide a portal with links to up-to-date key asset information accessible to staff and contractors. Ensure the information on the portal is always up to date and correct so that it can become the source of truth. Implement a procedure for updating the documents/drawings whenever a change is made.

6. Conclusion

6.1 Maturity assessment

On the basis of our findings from a series of workshops and interviews we have rated the Department of Health against the International Infrastructure Management Manual (IIMM) Asset Management Framework. An overall rating of 25% - Basic, is considered appropriate. Performance is not significantly better or worse in any particular area providing an opportunity to build the asset management system from the ground up.

In all workshops and interviews there was a strong desire to improve and good understanding of the shortcomings of current practices. Some staff demonstrated a good understanding of the gaps in current AM maturity. While for other staff there is a need to improve knowledge of what best practice asset management looks like.

6.2 Improvement program

Given the varying levels of knowledge there is a need to provide some training to all staff to provide a baseline of fundamental knowledge in order to progress any development of the AM system improvements. A glossary of standard terminology would also be beneficial.

Our improvement plan has been divided into 17 projects addressing various areas of asset management. The projects are not a comprehensive roadmap to competent asset management maturity. The plan sets out detailed steps for the next approximately two years to put in place the framework of the AM system and to begin populating the core documents. At each step additional gaps and opportunities will be identified and should be recorded for future improvement projects.

After around 18 months we have suggested a reassessment of progress to date, changing priorities, and review and updating of the Improvement Plan. At two years we suggest a new maturity assessment be undertaken to monitor progress and provide independent review of progress.

The next improvement plan will be able to focus on improvements to the practices that have been developed between now and the next maturity assessment. A framework for the AM System will be in place and the next projects could be expected to be more specific in their focus of where to make improvements – which areas of data to focus on, or which processes should be refined.

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