

INVESTMENT LIFECYCLE GUIDELINES

Solution implementation

Overview

Strategic
assessment

Options
analysis

Business
case

Project
tendering

Solution
implementation

Post-
implementation
review

Supplementary
guidance

Investment Lifecycle Guidelines

Solution implementation

'Is the investment proceeding as planned?'

Version 1.0

July 2008

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Overview
Strategic Assessment
Options Analysis
Business Case
Project Tendering
Solution Implementation
Post-implementation Review.

More information at: www.lifecycleguidance.dtf.vic.gov.au

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Abbreviations

BMP	benefit management plan
CEO	Chief Executive Officer
CFO	Chief Finance Officer
DPC	Department of Premier and Cabinet
DTF	Department of Treasury and Finance
ERC	Expenditure Review Committee
ICT	information and communications technology
ILM	investment logic map
IT	information technology
IEPG	Investment Evaluation Policy Guidelines
KPI	key performance indicator
MYS	multi-year strategy
PCG	Project Control Group
PPM	project profile model
TEI	total estimated investment

Executive summary

Solution implementation is sometimes referred to as construction and commissioning, implementation or delivery. However because these guidelines are intended for all project types, the broader term, solution implementation, will be used here.

The investment logic map (ILM) is the first step in the Investment Management Standard (IMS) developed by the Department of Treasury and Finance (DTF). It provides a clear understanding of why an investment is being considered (the problem) and some idea of what the solution might be.

However before making any judgement about the relative merit of an investment, investors and decision-makers need a better understanding of the likely best solution, its costs, key sources of uncertainty, timelines and the critical dependencies associated with it.

Shaping solutions at an early stage will help avoid investments that unnecessarily replicate infrastructure or miss opportunities to align solutions with broader policies and strategies, consequently failing to take advantage of new thinking and technologies. It will allow solutions to be integrated with other project outcomes, for example integrating a rail station and additional line with a road realignment and possible grade separation.

Solution implementation has three general stages:

1. initiation
2. contract and delivery (construction) administration
3. commissioning and handover.

Solution implementation is about delivering the project according to a contract established in the tendering stage. As well as essential contract management, project governance and risk management tasks, there may be significant stakeholder management demands, including an expectation that delivery will be on time and on-budget.

During this phase it is essential to monitor and control the project by managing:

- time, cost and quality aspects
- risks, and any issues that emerge (including testing the ongoing investment logic)
- change that results from the realisation of a risk or treatment of an issue
- relationships and communication with suppliers for the procurement
- testing of sub-components and commissioning activities
- training of personnel who will be using the new capability, facility or system
- effective handover to the 'user'
- required documentation, warranties, operation and maintenance manuals and 'as-built' drawings
- stakeholders, particularly clients and end users.

Note: The guidelines are not a comprehensive source or an alternative to project management techniques. Departments are encouraged to prepare their own guidelines and to seek advice about specific project issues if they are not covered here.

1 Introduction

Share the vision and work together with stakeholders to deliver it.

1.1 Investment Lifecycle Guidelines – background

The Investment Lifecycle Guidelines series (the guidelines) are designed to be applied to Victorian Government investments so they provide the maximum benefit for the State's individuals, communities and businesses.

They are mandatory for major¹ investments, but can be used for any investment, whatever its type, complexity or cost.

Every investment needs to address a basic set of questions consistently and robustly. The guidelines provide practical assistance to shape investment proposals, inform decisions about them, monitor their delivery and track the benefits they achieve. They also refer to tools best suited to help at each phase of the investment lifecycle.

The guidelines have seven parts – an Overview and one document for each of the six phases in the process. Their titles and the questions they address are:

1. **Strategic assessment** (What are the business needs and the likely solution?)
2. **Options analysis** (Which option will provide the best solution?)
3. **Business case** (Is there a compelling case for investing?)
4. **Project tendering** (What is the preferred delivery option?)
5. **Solution implementation** (Is the investment proceeding as planned?)
6. **Post-implementation review** (What benefits were delivered and what were the investment lessons?)

Supplementary guidance includes Procurement Strategy and Risk Management.

1.2 Purpose of the guidelines

The guidelines provide standards for activities carried out at various phases of an investment. The Overview explains the whole context of the series and relevant processes. Supplementary guidance material has 'how to' details about processes and methods (available at www.lifecycleguidance.dtf.vic.gov.au).

This guideline addresses solution implementation, the fifth phase of the investment lifecycle. It covers the delivery end of the procurement process.

This guideline also refers to related processes and guidance material regarding solution implementation. A resource directory is provided for web-links.

¹ To meet current government requirements, *major* has a total estimated investment (TEI) > \$5 million.

1.3 Tools and references

Often departments and agencies make the mistake of only using project reporting to track the status of their investment. This reporting often only covers the project implementation phase, mainly tracking the project against time and cost expectations. This has significant limitations. Even if a project is successfully kept to time and budget constraints, the original drivers for the investment may no longer be valid.

1.3.1 Investment Management Standard

DTF's IMS provides tools to help investors define and validate requirements across the investment lifecycle—including the business need, the likely solution and the benefits of a proposed investment.

DTF encourages all departments and agencies to continue to use IMS tools during the solution implementation phase. The IMS tools (investment logic map, investment concept brief and benefit management plan) establish the context and value the investment is likely to provide – early in the project's lifecycle. This gives a baseline to help track the status of the investment.

Investment reviews are reviews performed by or for the investment governance body to determine the continued relevance of the investment. Investment reviews are performed at pre-determined intervals (generally 6 monthly) during the investment lifecycle. The reviews can assist the investor and the project board by testing that the underlying investment logic remains sound. (There is more information at www.dtf.vic.gov.au/investmentmanagement.) The investor can use this information, with project performance data against cost and schedule expectations, to make informed decisions about the future of the investment.

Based on the current investment logic and the project status, the governance body will then decide to continue, discontinue or vary the terms for implementing the investment. The project board endorses the reviewed investment logic map and benefit management plan, incorporating ongoing investment decisions, as valid at that decision point.

1.3.2 Department of Premier and Cabinet Implementation Unit

The Implementation Unit in the Department of Premier and Cabinet (DPC) has a specific role regarding investments linked to major government policy statements. As well as monitoring and reporting on progress against government's strategic objectives, the unit works with agencies to resolve implementation problems.

1.3.3 Building Commission Process Guide

The Building Commission's Building Policy Group has a central policy and advisory role in supporting government agencies involved in public construction projects. The Commission has released a Process Guide that describes the steps in delivering a government service involving constructing or altering a building asset.

The Process Guide is based on industry-recognised project processes, supplemented by access to information, guidelines or websites relevant to each project phase. Some of the linked documents are mandatory for government agencies to implement, including the:

- Code of Practice for the Building and Construction Industry
- Ministerial Directions under the *Project Development and Construction Management Act 1994*.

The Process Guide identifies the mandatory requirements, including those of particular relevance to the solution implementation phase. The guidance material covers managing the construction contract, the role of the principal and superintendent, safety in construction, project cost management and commissioning, and handover of the completed project. (There is more information at www.buildingcommission.com.au.)

Departments are encouraged to make contact with DTF when implementing projects and making them ready for service. For more detailed assistance, departments and agencies can access expert panels of external advisers established by DTF. They can assist departments and agencies in a range of project-related activities, including project implementation and the readiness for service stage. For details on current panels and how to access them, go to www.vgpb.vic.gov.au.

Departments may also access the Construction Supplier Register, a database of pre-qualified building industry consultants and contractors. Victorian Government departments and agencies (and other approved users engaged in public construction) can use this register. For more information, see the Construction Supplier Register² on the website at www.doi.vic.gov.au.

²www.doi.vic.gov.au/DOI/Internet/csproviders.nsf/AllDocs/2BCF71B9C3F7E6F3CA256EC50000C9DD?OpenDocument

2 Solution implementation

2.1 Overview

The solution implementation phase takes the project from the end of the tender stage (when the scope of the project has been defined, a contract has been signed and the costs to deliver the project are known) to project handover (when the asset or service is available for end users).

Fundamentally, the solution implementation phase translates an initiative (defined in procurement documents like the tender and specifications) into a set of measurable outcomes to be reached in the construction (or development) and commissioning stages. This is usually realised through the contract with the third party.

Key activities in this phase include:

- the initiation phase for construction or development
- contract administration, including progress checkpoints, inspections and pre-occupancy review
- commissioning and handover.

Figure 2.1 shows the main activities in the project implementation and readiness for service stages (described further in the next section).

Figure 2.1: Solution implementation – key elements



This section discusses each of these activities, with a checklist designed to assist investors.

Hints:

- Involve end users, the service delivery agency and operators early in the solution implementation phase.
- Review risks regularly during this phase, and start identifying risks for the next stage of the project.
- Ensure the project schedule has a contingency should there be a delay in the handover date.

2.2 Initiation

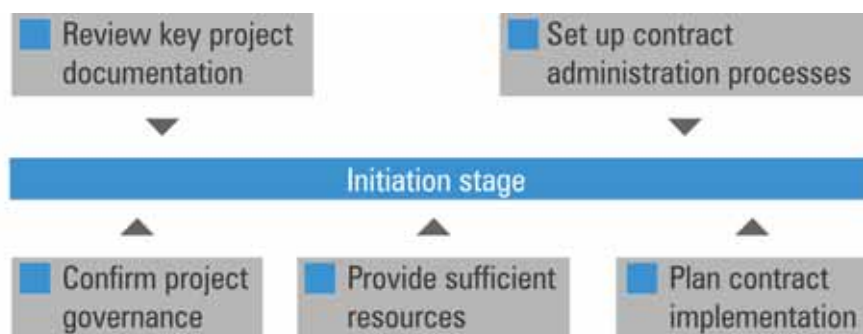
In initiating the solution implementation phase, investors in consultation with the project management team and project board need to reconsider a number of activities that they planned and considered in the earlier phase of the project lifecycle. These include:

- confirming project governance arrangements
- collating and reviewing all critical project documentation (including the business case, the contract, the project plan and the risk register)
- setting up and implementing processes for project administration, including monitoring and reporting
- making sure there are sufficient resources (human, financial and systems) to put the contract into effect and manage it efficiently
- identifying program activities to administer the contract through a planned transition to service delivery
- setting up key related processes and ensuring they continue to develop. These include managing:
 - organisational change
 - stakeholders
 - risks and issues
 - benefits
 - knowledge.

[Knowledge management in this context include recording, retention, storage, dissemination and application of project and contract information to ensure improvement and information continuity throughout the investment lifecycle. This is discussed in section 3.5.]

Figure 2.2 shows the main elements of the initiation stage. These elements link the earlier project lifecycle activities and the solution implementation phase.

Figure 2.2: Key elements of the initiation phase



Project initiation is very much about establishing healthy relationships both internally and externally, particularly with the contractor(s) who are delivering the asset or service. It is important to clearly define roles and responsibilities, and discuss these with all parties. They should be very clear, particularly where there are personnel changes during (or moving into) the solution implementation phase.

Effective solution implementation also requires key project staff to have a comprehensive understanding of:

- the project requirements
- the desired project outcomes
- how the project contributes to client service delivery
- key sources of uncertainty (risks) and lead indicators (issues) that these risks might emerge
- what needs to be done to make the transition to service smooth and planned.

Developing a comprehensive understanding of the project requirements is essential. The project team is expected to develop these in a consistent way throughout the project documentation, planning and project implementation stages.

2.2.1 Review documentation

To implement the solution effectively, the project team is expected to be familiar with, and review, the project documentation. They are also expected to be proficient with managing the delivery of the project in accordance with that documentation.

Typically, the documentation follows project management principles. This includes important regulatory requirements (compliance and approvals) for project implementation. Depending on the nature or size of the project, the documents may include:

- the updated project business case, in some instances translated into a business plan
- Gateway Review Process Gate 4: Tender Decision report, if undertaken
- key contract documents
- design reports and supporting investigation reports
- compliance approvals and conditions affecting the project, and information on outstanding approvals
- the updated project management plan (or stage plan or equivalent)
- the updated risk management plan (including a risk register), with particular emphasis on risks to the successful management of (and within) the contract, project implementation, commissioning, handover, operation and potential defects maintenance
- the issues log and change control process
- project delivery plans
- stakeholder management plans
- organisational policies regarding contract management.

The attainment of compliance approvals can be a significant task involving consideration of a wide range of legislation and policies. Appendix A provides a case study on the Channel Deepening project. Appendix A1 outlines the range of relevant legislation and policy that was considered and Appendix A2 provides a diagram of the iterative process of project development in compliance with the environmental evaluation framework.

2.2.2 Confirm governance

Effective governance arrangements are central to solution implementation. However, governance roles vary according to the type of contract, agency requirements and the characteristics of the project. For small contracts, one person may act in a number of roles.

The contract documents should clearly state the accountabilities, roles and responsibilities of each party to the contract. It is critical to avoid duplication or gaps in responsibilities. Table 2.3 summarises typical roles and responsibilities.

Table 2.3: Typical roles and responsibilities for contract management

Title	Typical role and responsibility
Owner, Principal or client	The organisation or person identified in the contract as the contracting entity. The owner is usually responsible for paying for work undertaken.
Project Board, Project Steering Committee, Governance Committee or Project Control Group	<p>A group consisting of key agency and government stakeholders that is responsible for guiding the project. It may have the following functions:</p> <ul style="list-style-type: none"> ▪ approving changes to the project and its supporting documentation ▪ monitoring and reviewing the project ▪ resolving significant project conflicts and issues³ ▪ formally accepting project deliverables.
Project Director or Project Sponsor	The person representing the owner, who is ultimately accountable and responsible for the project
Project Manager	A person responsible for delivering the defined project
Project Team	The supporting team to the Project Manager
Superintendent (other terms may be used under different contracts)	<p>Person nominated by the principal to administer the contract. Obligations may include:</p> <ul style="list-style-type: none"> ▪ verifying that the work complies with the contract requirements ▪ certifying that the work is satisfactorily completed and assessing and valuing progress and final claims ▪ instructing the contractor (through Superintendent's Instructions) where the contractor is seeking approval or clarification of a contract requirement so they can proceed ▪ ordering and valuing variations to the work and (on approval of the Project Board or other relevant group) approving variations within their designated authority ▪ keeping the Principal informed of progress and contractor performance.

³ The board or steering committee resolves issues of significance that have been escalated through the project management organisational structure.

Title	Typical role and responsibility
Superintendent's representative	Represents the superintendent, with delegated authority under the contract
Contractor	An organisation or person with an obligation to perform certain works or services as described in the contract documents
Contractor's representative	Person nominated by the contractor to supervise and manage the work under the contract.

2.2.3 Provide sufficient resources

Effective solution implementation can only be achieved if departments and agencies provide adequate resources, including:

- financial resources to meet contractual requirements and to provide adequate contract administration
- human resources with the competencies, skills and experience to manage the solution implementation phase
- physical resources (e.g. adequate accommodation and services)
- system support (e.g. information, records systems and knowledge management protocols).

2.2.4 Contract administration processes

Effective solution implementation requires both the principal and the contractor to set up processes to manage project cost, time, quality and contract compliance.

Section 2.3 Contract administration, has more information. For more on managing support processes, refer to Section 3.

2.2.5 Plan contract implementation

Good solution implementation practice calls for the project team to review the contractor's preliminary and detailed implementation program, regarding:

- its feasibility
- potential risks and issues and how these risks and issues are linked
- target dates for principal and superintendent contractual commitments (e.g. provision of information, contractor site access, compliance with permits, approvals etc) and development of plans to achieve these commitments
- identifying and programming users' and operators' involvement in the project.

2.2.6 Project initiation checklist

Initiation checklist

- Is an effective project governance arrangement in place and has this been formally documented and communicated to relevant stakeholders?
- Has the project team reviewed relevant documentation? Are they familiar with project implementation and readiness for service requirements?
- Is there a benefits management plan and a schedule for investment reviews?
- Are there sufficient resources (human, financial and systems) and skills available to adequately manage the contract?
- Have contract administration processes and procedures been set up and documented?
- Has the project team reviewed the contractor's implementation program? Have the full implications of this program been assessed?

2.3 Contract administration

Investors need to observe fundamental contract administration principles for effective solution implementation. This overview shows the importance of basic contract administration practices for any project.

Good contract administration helps deliver a project that meets the scope, quality, and cost specified, is on time, and meets all compliance requirements. Successful contract administration relies on both clients and contractors being open and trusting in their dealings with each other and resolving all issues as they occur.

Contract administration is vital. It means:

- the agency obtains value for money from the contract
- the final product or service meets the specified scope and quality specifications
- the project is delivered within the target timeframe, quality criteria and costs
- there has been effective solution implementation regarding final project delivery

Figure 2.3 outlines where contract administration fits in this stage of the project lifecycle

Figure 2.3: Contract administration stage



In general, departments and agencies, particularly those with significant asset programs, already have well established contract administration practices and guidance material.

In addition to using departmental and agency processes and guidance material, they may also use material prepared by the Building Commission and national peak bodies such as Standards Australia or the Australian Procurement and Construction Council.

2.3.1 Scope, time, cost and quality management

Scope, time, cost and quality constraints and management should be incorporated into all project management lifecycle phases in the following ways:

- *Scope management:* Develop a written project scope statement to define the project. This statement is used as the foundation for managing scope and timing. (It may further be defined by using a work breakdown structure.)
- *Time management:* Establish a project schedule defining the (high-level) activities that must be carried out at certain points in the project to deliver the product described in the scope statement. (Flow charts and a critical path analysis might be useful tools for this.)
- *Quality management:* Define the quality criteria, processes and standards that will be used throughout the project.
- *Cost management:* Establish a budget breakdown for the project. (Useful tools for this might include earned value management and 'cost to complete' analysis.)
- *Compliance management:* Identify and adhere to compliance requirements. These may include agency and statutory requirements.

Figure 2.4 summarises the main elements of the contract administration stage.

Figure 2.4: Key elements of the contract administration stage



2.3.2 Scope management

The high-level project scope boundaries are generally set in the ILM, translated into a business case, and are likely to have been further refined with more detail during each phase. Contract documentation should fully define the scope authorised for the project, except to the extent that scope relates to in-house activities.

By the time the project reaches the solution implementation phase, there should be only very limited scope changes—provided those involved have put the appropriate attention into planning and design from the start.

When government agrees to a proposal, it expects the approved scope to be consistent with the scope to be delivered. Significant scope changes that affect the time, costs and quality outcomes during the construction stages generally require project owner acceptance before they are implemented. [Note: The project board may have a defined level of delegation to approve scope changes and some scope changes may require government or Ministerial approval.]

The project owner's acceptance is needed, since significant changes at this point in the project usually add a substantial cost and potential time over-run. Scope changes would then be negotiated with the contractor.

2.3.3 Time management

Time management is achieved by:

- specifying how long the project will take in the contract documents
- agency review of the implementation program that the contractor submitted with the tender, and their negotiation about it (where necessary) and acceptance of it as reasonable
- liquidated damages being included in the contract in the event of late completion by the contractor
- the contractor submitting a detailed program for review shortly after award of the contract, and the agency accepting this as being reasonable
- the project manager or superintendent monitoring progress against the agreed project timelines, milestones and the critical path.

2.3.4 Quality management

The contract specifications clearly and objectively show the required quality of project outputs. These specifications should refer to industry-accepted standards (e.g. Standards Australia). For some contracts, the contractor would be required to have quality accreditation. It is equally important that appropriate quality assurance systems are in place for parties both external (designers, construction managers etc) and internal (project management team) to government.

Quality is managed through:

- the contractor being required to undertake quality control activities to ensure compliance with the contract specifications and provide the results to the project manager or superintendent
- inspection and monitoring (by the project manager or superintendent) of testing of key components
- key quality and performance criteria (such as tests and evaluation) to be achieved before a progress payment, milestone payment or Certificate of Practical Completion is issued under the contract
- the contract defects liability or warranty period, where any defects identified after practical completion are remedied before final construction payment.

2.3.5 Cost management

The parties should agree to contract payments and the basis of all payments, including progress and final payment in the contract documents.

Progress payments are usually based on milestone payment points submitted by the contractor. The project manager or superintendent assesses them for acceptance or adjustment before certification is issued approving payment. The project manager or superintendent should carefully review all invoices to make sure that the payment claimed is in accordance with the contract requirements and is, in fact, payable.

The contract documents should allow for variations to the contract. Some variations affect the cost, quality or time allowed. The project manager or superintendent should analyse and review variations against the contract provisions. Approval procedures should recognise who is delegated to authorise variations before any variation is implemented.

A properly developed project budget includes a risk-adjusted estimate with provision for contingency plans and a sum to provide for unforeseen events. This sum should not be made known to the contractor.

If any increase in cost is expected to exceed the approved expenditure, the investor should seek approval of additional funds. This may involve a request for withheld contingency funds or, in extreme cases, an increase to the project budget approved by the Government. The former case requires a bid to the appropriate authority against agreed provisioning, while the latter case requires a revised submission justifying why Government should be considered an increase. Approval is not automatic, and departments and agencies should aim to manage the project within the agreed parameters, unless the project owner initiates changes to project parameters. Use of an earned value management or 'cost to complete' analysis to monitor project progress is recommended.

2.3.6 Compliance management

Compliance management involves the project manager or their superintendent monitoring the contractor's compliance with:

- the quality management system
- workplace, health and safety
- environmental conditions
- development applications or permits issued by either the Commonwealth, State or local governments
- the currency and adequacy of insurance policies.

The project manager or superintendent should ensure that the department or agency also meets its compliance obligations.

2.3.7 Contract administration checklist

Contract administration checklist

- Have documented processes been established and implemented to manage project scope, time, quality and cost?
- Have documented processes been established and implemented to monitor the contractor's compliance with the contract?
- Have documented processes been established to ensure government [departmental or agency] compliance with the contract?

2.4 Commissioning and handover

The commissioning of a project, and subsequent handover to the controlling entity, marks the end of the solution implementation phase (and the start of the service or asset's operational phase). For complex projects, the commissioning and handover may be a staged process.

The commissioning process ensures that:

- the operator and controlling entity are assured that the project meets agreed specifications
- the entity or operator has sufficient knowledge to manage the infrastructure or process effectively and efficiently to meet service delivery outcomes.

Figure 2.5 outlines where commissioning and handover fits in the project lifecycle.

Figure 2.5: Commissioning and handover stage



2.4.1 Commissioning

Commissioning is usually undertaken before handover to ensure everything is ready for occupation or use. Any works outstanding under the contract should be identified and documented so there is a clear understanding of any work still to be completed as part of the project.

There should be a clearly documented history that outlines the necessary commissioning tests, acceptance criteria, tolerance levels, reporting requirements and the means for measuring the criteria. The criteria and measurements should be as quantitative as possible and relate to agreed standards (e.g. Australian Standards).

During the defects liability period of the contract (if there is such a period), the contractor is responsible for completing omissions and defects outstanding at practical completion and for rectifying additional identified defects.

Commissioning usually starts after the project manager or superintendent accepts that contract quality and performance criteria have been achieved. The commissioning team should have sufficient skills and experience in the type of infrastructure, or in complex processes, to assess its acceptability.

A commissioning plan should be developed by the contractor and when acceptable agreed to by the project manager or superintendent. A commission test log, checklist or report provides written evidence of tests and results. It identifies:

- areas of compliance and non-compliance
- what corrective action is required in the event of non-compliance
- any re-testing requirements
- a documented plan for re-testing or corrective action.

Involving operators in the commissioning and handover process is a key element in the transition process.

2.4.2 Handover

Once the project has reached practical completion, handover from the contractor to the service delivery agency and its users can take place. From this time on, the service provider agency takes responsibility for the asset or process, although a period of time for the contractor to rectify defects is normally allowed before finalising the contract.

The handover process generally includes:

- provision of 'as constructed' (or 'as built') drawings (hard copy and digital) in an agreed format to the controlling entity and operators
- training of the controlling entity and operators, particularly regarding specialist equipment or procedures. Most of this training is likely to need completing before asset handover
- provision of operation and maintenance manuals (hard copy and digital) in an agreed format to the controlling entity and operators. These should be provided to the project manager or their superintendent well before handover. The manuals should be clearly specified in the contract documents.
- provision of an asset management plan
- unit rates or costs per functional unit for various components: these should be collated along with reasons for rate variation; and this should feed back into the department or agency's estimating database
- provision of copies of all approvals, development conditions and permits associated with the development
- a benefits management plan and reporting criteria
- a commissioning report and supporting information (e.g. test results and certificates)
- provision of a schedule of warranties (from the contractor(s), sub-contractor(s) and supplier(s)), and confirmation that items identified during the defects and dilapidation surveys are covered under the associated warranty (or warranties)
- a photographic dilapidation survey (particularly useful in construction projects) as evidence of the actual condition at the time of practical completion and associated handover; this is useful in identifying any further defects or damage that may be caused by the new operator, or contractors themselves, during the defects liability period (this protects against further costs or variations)
- in certain circumstances, provision of a business plan for the operation of the asset
- performance reports on contractors, sub-contractors and consultants, completed and stored in the department or agency's database for future reference
- a management review: in certain circumstances, an audit of the project or contract management process may be warranted: the opportunity may be lost once the project team has disbanded, and it will be difficult to capture lessons learned
- indexing and archiving of contract documentation at the appropriate time, with the indexing substantially completed soon after practical completion
- planning for the defects liability period, when rectification and make-good arrangements take place.

The following information should be supplied so the department or agency can update its asset register:

- asset attributes and costs, disaggregated in a logical and acceptable way that is consistent with the agency's asset register hierarchy and the standards to be met
- asset valuation, including 'useful life' and annual depreciation
- post-occupancy evaluation and evaluation of consultants and contractors.

The project manager is accountable that this has been achieved and that it is consistent with department and agency knowledge management requirements.

2.4.3 Documentation

At this stage, the business case should be updated, particularly regarding:

- capital costs
- risk management: Did the predicted risk events occur and what were the final consequences? What were the costs associated with contingent responses? Were there any useful lessons learned?
- other implementation issues that affected the project, particularly those not anticipated (unforeseen risks) in the original business case
- the areas of the business case that continue to be valid (provide a brief commentary)
- whether the benefits proposed at the start of the project are still valid

The updated business case provides a historical record for reference, particularly if similar projects are considered in the future.

Lessons learned from project implementation should be documented using a project wrap-up report. Refer Appendix B for a template project wrap-up report. The purpose of this report is to:

- provide a recommendation as to whether or not the project should be closed
- summarise key project factors and recommendations, post implementation
- outline any unresolved project factors and how they could be managed.

This report is a communications tool and will be used to seek authorisation from the PCG to close the project

An important project completion task is ensuring knowledge is not lost in transition. A suitably qualified and experienced person, independent of the project, should check and validate that the project manager has completed all necessary actions to ensure knowledge management requirements have been met.

2.4.4 Commissioning and handover checklist

Checklist for commissioning and handover

- Have acceptance criteria been explicitly documented in the contract documents?
- Does the commissioning team have sufficient skills and experience?
- Is the contractor's commissioning plan acceptable?
- Are the future operators involved in the commissioning and handover process?
- Do test logs, checklists or reports provide adequate evidence of acceptability or non-acceptance?
- Have the following been undertaken as part of the handover process?
 - provision of 'as constructed' ('as built') drawings
 - training of controlling entity and operators
 - provision of operation and maintenance manuals
 - sufficient information to establish or update the asset register
 - provision of the asset management plan
 - preparation of performance reports and their entry into a database
 - management review (where appropriate)
 - indexing and archiving of contract documentation
 - provision of a schedule of warranties, and confirmation that items identified during the defects or dilapidation surveys are covered under the associated warranty (or warranties)
 - provision of all certificates, permits, approvals and conditional development documentation.
- Has the business case been reviewed or updated?
- Have project learnings been captured in a project wrap-up report?
- Are you confident that the project deliverable is ready for service? What is the basis for this confidence?
- Has an independent person, suitably qualified and experienced, checked and validated that the project manager has completed all necessary actions to ensure knowledge management requirements have been met?
- Finally, would you personally be prepared to take over and manage the infrastructure or process based on what you've been provided?

3 Related processes

Hints:

- Start with the end in mind: What will be the major issues when you are about to hand over the project?
- The project will be judged on time, cost and quality outcomes: What can be done to make sure these outcomes are met?
- Relationships are important in delivering major projects.
- Get your stakeholders involved early. It may take time, but it will pay off in the end.
- Spend five per cent more time planning.

This guideline refers to activities or 'key related processes'. These are important for effective solution implementation, but are undertaken in other lifecycle phases required to facilitate the contract administration process. (Figure 3.1 outlines these.)

These activities should enhance processes already established earlier in the project lifecycle, including stakeholder, change, risk, issues, and knowledge management.

Having sound processes in place for these activities helps develop an organisational culture that is prepared for the project and its ongoing requirements. This preparation:

- means that the organisation is effective in identifying risks and recognising and responding to issues so that they can be managed well before the risk emerges as a reality, and as a substantial problem
- facilitates communication with all stakeholders
- minimises project risk at the strategic and operational levels which helps make contract management and the handover to operators more effective and efficient
- helps with knowledge sharing and learning from experiences, leading to continuous improvement in the project lifecycle processes.

Figure 3.1: Key related processes



3.1 Stakeholder management

A stakeholder may be defined as anyone who directly or indirectly receives a benefit, or sustains a cost, resulting from the implementation of a project.

Primary stakeholders are those closely linked to a particular aspect or phase of the project or asset lifecycle. During the project implementation stage, the primary stakeholders may include the contracting parties, the funding agency, future operators and users, the community, regulators and those who will be affected by the project (neighbours or consumers of the benefits of the project, for example).

Investors identify and assess key stakeholders and their importance, involvement or influence in the strategic assessment, options analysis and business case phases of the project lifecycle.

You should review stakeholder requirements at each stage of a project, as they are likely to change as the project progresses. For larger projects, a stakeholder management plan should be developed to manage stakeholder needs. Departments or agencies that generate many similar projects should have generic checklists of stakeholders and their needs.

Communication is an essential part of managing and developing stakeholder relationships, and managing the project. You should document communication strategies in the stakeholder management plan or communications plan.

Effective communication between the contracting parties is also essential for effective contract management, and to minimise the risk of contract disputes. In some instances, the project team may include a person whose role is to liaise with certain primary stakeholders (e.g. facility operators or users). This can help make project implementation successful.

3.2 Change management

A project can be seen as delivering a change—whether a new service, a new asset or a new way of doing business. Organisational change management involves identifying the impacts of a project on an organisation, and developing and managing activities leading to a smooth implementation and acceptance of project outputs.

Change management strategies and tools should have been developed in the strategic assessment, options analysis and business case phases of the investment lifecycle.

At handover, the organisation accountable for service delivery must be ready to provide the governance and oversight to operate the infrastructure effectively and efficiently in an appropriate operational environment. For this to happen, appropriate change management activities and processes must be implemented through the project lifecycle stages leading up to readiness for service. Change management strategies for this stage should be developed in conjunction with the organisation and management responsible for service delivery.

Change management activities relevant to the solution implementation phase include:

- reviewing, updating or developing policies, processes or procedures for long-term project success
- developing a training plan to ensure operators have the necessary skills to manage and operate the infrastructure or process
- job re-design

- allocated responsibilities for operation and maintenance: if these services are to be provided externally or as shared services, then contracts should be arranged
- changes in organisational culture required to manage the infrastructure or process
- confirmation with the organisation responsible for service delivery that:
 - costs and resources required to sustainably manage the infrastructure or process have been adequately budgeted for
 - resources (e.g. financial, staff, systems, etc) are adequate for sustained service delivery
 - systems are in place to effectively manage the infrastructure or process (e.g. there is an appropriate maintenance management system)
 - processes are in place to manage outstanding issues (see section 3.4)
 - Provide sufficient resources) and residual risk (see section 2.2.4)
 - processes exist to ensure that documentation and information provided at handover will be properly stored or archived and accessible to operators
 - systems are in place to monitor service delivery and that suitable outputs (e.g. KPIs) are set up so that an effective post-implementation review can be undertaken
 - processes are in place so that the public or users are aware of the availability of the facility or service
 - processes are in place to respond to user feedback when the service starts.

3.3 Risk management

Traditionally, 'risk' refers to the chance of something happening that will have an impact on an objective, or will possibly lead to harm or loss. Risk management refers to the processes for realising potential opportunities while managing adverse effects. Risk management optimises project outcomes by reducing the level of uncertainty with respect to achieving project outcomes.

Risk management is a systematic methodology applied to the identification, evaluation, treatment and control of risks. It is not just a one-off process at project start-up. It is a dynamic and fluid process that needs continuous attention throughout the project lifecycle. Systematic and holistic risk management involves:

- communication and consultation with stakeholders in the activity
- establishing the context (strategic and operational environment)
- risk identification, analysis and evaluation
- risk treatment (identification of action plans of provisioning for contingent items)
- monitoring of the risks and system, and review of the context, hazards and risks.

Effective project risk management leads to

- reduce uncertainty
- increased comfort for the project teams, executives and politicians
- fulfilment of the government's fiduciary responsibility to the taxpayer
- optimising project outcomes
- improved schedule performance
- improved budget performance

Some departments have developed guidelines for applying risk management to projects and supplementary guidance has been developed for the Investment Lifecycle series. Standards Australia and Standards New Zealand have jointly published AS/NZS 4360:2004 that also provides guidance on applying risk management (further information can be found at www.standards.org.au).

The link between issues and risk

The nature of the relationship between risk and issues is an important concept. A risk, to an extent, is a hypothetical assessment of sources of uncertainty. An issue is an event that reflects the 'emergence or realisation' of a previously identified, or otherwise unidentified risk. An issue must be managed in order to avoid the full adverse consequences identified in the risk assessment.

Ideally, an issue should be able to be linked to an identified risk. The issue requires observation or active management in order to reduce the likelihood or impact of risk should it become a reality.

Effective issue management can reduce identified risks to low or non events. When obvious that an issue cannot be resolved within existing resources (and the associated risk is emerging as a reality) the issue should be escalated to an authority or delegate capable of managing the risk.

When an issue requires management, and cannot be associated with a previously identified risk, it is most likely an indication of the emergence of an 'unknown' risk and would indicate further investigation of the potential scale of the newly identified risk is warranted.

3.4 Issues management

Issues management involves monitoring, reviewing and addressing issues or concerns as they occur throughout the life of the project.

Issues should be managed in order to prevent (or reduce) the likelihood or consequence of a major risk to the project having a significant negative impact on the project objectives. Issues can arise from a range of sources, such as stakeholders or the administration of the contract. Project teams should by this stage be maintaining an issues register or log. The issues log (or at least a summary of it) should be included in the regular reporting process.

An example of a regularly occurring issue is contractor's claims for variations. Reasons for this include perceived (or real) scope changes, schedule changes or schedule constraints. In these cases, contractors raise claims to formally seek financial compensation for having to make adjustments to pre-arranged methods, work plans and rates specified in the contract.

Many claims can be readily resolved. However, some claims can be contentious and complex and lead to disputes between contracting parties. The project risk assessment (proactively) identifies the need for dispute resolution processes to be specified in the contract. Alternative dispute resolution processes are available so disputes can be resolved in a mutually acceptable timeframe. This reduces the need for lengthy and expensive legal proceedings. The parties are not obliged to use the dispute resolution processes in the contract. They can agree to use a different process if both view it as more likely to lead to a satisfactory outcome. The active management of the dispute in one of the elected processes is an example of the reactive management of issues.

3.5 Knowledge management

Knowledge and information management are connected. Knowledge management involves making the best use of knowledge by applying it in the collective interest of users. Information management is the process for managing how information is created, stored, retrieved and distributed.

Knowledge and information management are essential related processes for contract management. They:

- ensure continuity and availability of project knowledge for effective contract management
- help meet legislative, policy and contractual requirements
- facilitate organisational learning and use of these learnings to continuously improve
- ensure that systems are established to deliver information that is readily accessible, accurate, consistent and current
- facilitate cooperative sharing of knowledge within and beyond the project team and with relevant stakeholders to help meet ongoing governance expectations.

Document and records management are critical to information management. For contract administration, records should include:

- correspondence with contractors and other stakeholders
- records of discussions, including minutes of meetings
- monthly reports to owner, project steering committee and other agency stakeholders
- financial records, including contractor claims, approvals of progress and final claims and contract variations
- issues log
- risk management plan and the associated risk register
- documents (e.g. drawings) issued and revisions
- original contract documents
- approvals from regulatory authorities.

Knowledge sharing can take place in a number of ways, including:

- project managers reporting to senior management
- internal agency project team meetings
- meetings with contractors or other stakeholders
- monthly project reporting to the owner or principal
- updating databases (e.g. contractor performance)
- training programs for service operators
- updating key project documentation (e.g. business case or business plan)
- transferring knowledge to the agency and other agencies through formal briefings and project audit reports
- ensuring documentation is maintained electronically and accessibly in the agency's information system to maximise value to the organisation particularly of lessons learnt for reference in future investments or subsequent stages of the existing investment.

It is essential to report regularly (e.g. weekly, monthly, quarterly) on contract performance. This covers the scope, cost, time and quality indicators. It gives the owner or principal the knowledge to make informed decisions on the contract and other related issues, activities or projects.

The project team must encourage a culture of adherence to knowledge and information management processes, tools and systems. Fostering an appropriate culture is also useful for sharing and transferring tacit knowledge within the agency and to other State Government agencies. Project team must always treat any 'commercial-in-confidence' information appropriately.

3.6 Checklist – key related processes

Checklist for key related processes

- Have processes been set up to ensure that the organisation is accountable for ongoing service delivery, will be ready to operate the infrastructure, or is prepared for the new operational environment? What are these processes?
- Have key stakeholders been identified and communication strategies developed and applied?
- Have processes been developed to monitor, review and address issues or concerns as they arise? How will these be reported?
- Is a risk management plan available? Does it make clear the approach to managing risk throughout the project life? Does it clarify roles and responsibilities for managing risk throughout the project life?
- Is a risk register available and how will it be reviewed and updated? What are the ten top risks to the project? Are the treatment strategies relevant and clear?
- Have adequate document and records management systems been set up?
- Has a documented process for regular reporting on contract performance to the project owner or principal been established and implemented?
- How do you propose to share knowledge? Is there a culture of sharing this knowledge? If not, how do you propose to change this culture?

4 Project assurance

There is a range of options for reviewing projects and making sure they have effective governance. Gateway Reviews may be required for medium or high-risk projects. Whether required or not, it may be useful to review the issues that would normally be considered in a Gateway Review.

The fifth Gateway Review focuses on assessing:

- whether the business solution is robust before it is delivered into service
- how ready the organisation is to implement the business changes that occur before and after delivery
- what contract management arrangements are in place or being arranged
- whether there is a basis for evaluating ongoing performance.

There is more information at www.gatewayreview.dtf.vic.gov.au and in the Gateway Review Process guidance material.

4.1 Gateway Review Gate 5: Readiness for Service

Gateway Review Gate 5 investigates the organisation's readiness to make the transition from the solution to implementation. Where appropriate, it assesses the capabilities of delivery partners and service providers.

The aims of the review include, but are not limited to, confirming that:

- contractual arrangements are up to date
- the business case is still valid and is not affected by internal and external events or changes
- the original projected business benefit is likely to be achieved
- there are processes to ensure the long term success of the project
- necessary testing (commissioning, business integration and acceptance testing) has been done
- agreed plans for training, communications and roll-out are complete and robust
- all defects and incomplete works have been identified
- all parties have agreed plans for managing risk and that ongoing risks are being managed effectively
- arrangements for handover to the operational business owner
- the original projected business benefit is likely to be achieved
- lessons for future projects are identified and recorded.

Documentation reviewed during Gate 5 includes:

- updated requirements definition

- updated business case (plans for benefits realisation)
- close-out (if completion at implementation) or status reports (for budget versus cost, actual versus planned schedule, risk management, communications, environmental performance, change management, benefits management plan, a plan for performance measurement, updated contract).

Resource directory

Further information may be obtained from the following publications/websites. Please advise the Department of Treasury and Finance if your agency, or other agencies, have additional information that should be included in this listing.

Resource name	Access details
Investment Management Standard	
Problem Definition (Investment Logic Map)	www.dtf.vic.gov.au/investmentmanagement investmentmanagement@dtf.vic.gov.au
Solution Definition (Investment Concept Brief)	
Benefit Definition (Benefit Management Plan)	
Business Case	
Investment Reviews	
Benefit Report	
Gateway Review Process	
Project Profile Model	www.gatewayreview.dtf.vic.gov.au gateway.helpdesk@dtf.vic.gov.au
Program Reviews	
Gate 1 Review: Strategic Assessment	
Gate 2 Review: Business Case	
Gate 3 Review: Readiness for Market	
Gate 4 Review: Tender Decision	
Gate 5 Review: Readiness for Service	
Gate 6 Review: Benefits Evaluation	
Investment Lifecycle Guidance	
Overview	www.lifecycleguidance.dtf.vic.gov.au
Strategic Assessment	
Options Analysis	
Business Case	
Project Tendering	
Solution Implementation	
Post-implementation Review	
Supplementary Guidance	
Investment Evaluation Policy and Guidelines	www.lifecycleguidance.dtf.vic.gov.au
Project Alliancing Practitioners' Guide	
Procurement Strategy Supplementary Guideline	
Melbourne Water Triple Bottom Line	
Asset Investment Reporting	www.dtf.vic.gov.au/assetinvestmentreporting
Asset Management Policy	www.dtf.vic.gov.au/assetmanagementpolicy
Multi Year Strategy	www.dtf.vic.gov.au/multiyearstrategy
Partnerships Victoria Guidance	www.partnerships.vic.gov.au
Other Guidance	
Building Commission Guidance	www.buildingcommission.com.au
Capital Development Guidelines	www.dhs.vic.gov.au/capdev.htm
Construction Supplier Register	www.doi.vic.gov.au
Environmental Sustainability Framework	www.dse.vic.gov.au
Health Privacy Principles	www.health.vic.gov.au/hsc/
Human Rights Charter	www.justice.vic.gov.au
Information Privacy Act	www.privacy.vic.gov.au
Multimedia Victoria	www.mmv.vic.gov.au/policies
Standards Australia	www.standards.org.au
Tender Documentation	www.tenders.vic.gov.au
Whole of Government Contracts	www.vgpb.vic.gov.au

Glossary

Asset management framework: A Victorian Government initiative to allow the Expenditure Review Committee to exercise greater strategic control over the asset base, with a tighter focus on adapting the asset base to better support output delivery. The framework has a series of linked strategies (service strategy, asset strategy and multi-year strategy) that guide investment planning in departments and agencies.

Appraisal: The process of defining objectives, examining options and weighing up the costs, benefits, risks and uncertainties of those options before a decision is made.

Asset option: An asset option is a means of satisfying service needs by investing in existing assets or creating new assets.

Asset strategy: Sets the direction and communicates up-front the assumptions and decisions about levels of service and who provides them; is the means by which an entity proposes to manage its assets over all phases of their lifecycle to meet service delivery needs most cost-effectively.

Assets: Service potential or future economic benefits controlled by an entity (e.g. a department) as a result of past transactions or other past events. Assets may be physical (e.g. plant, equipment or buildings) or non-physical (e.g. financial investments). Assets may also be current (having a store of service potential which is consumed in one year or less) or non-current (having a store of service potential that is consumed over a period of more than one year).

Base case: The base case is a realistic option that involves the minimum expenditure to sustain existing standards of service delivery or to achieve previously agreed service standards. Therefore, the base case does not always mean 'do nothing'; rather it is the minimum essential expenditure option (e.g. carrying out obligatory works to meet safety and health regulations).

Benefit: The value that the investment will provide to the organisation or its customers. Benefits are normally a positive consequence of responding to the identified driver. Each claimed benefit must be supported by key performance indicators that demonstrate the investment's specific contribution to the identified benefit.

Benefit management plan: A short document that defines the pre-requisites for delivering each expected benefit, how the delivery of each benefit will be measured, and who will be responsible for measuring and realising each benefit.

Benefit reports: Regular reporting of the delivery of benefits, which are tracked and reported consistently with the benefit management plan.

Business case: A document that forms the basis of advice for executive decision-making for an asset investment. It is a documented proposal to meet a clearly established service requirement. It considers alternative solutions, and identifies assumptions, benefits, costs and risks. The development of the business case is based on the logic in the investment logic map.

Capital expenditure: Expenditure involved in creating or upgrading assets.

Change: The things that must be done by the business if the benefits are to be delivered. The changes provide detail of how the strategic intervention defined in the objective will actually happen.

Cost: An expense incurred in the production of outputs.

Cost-benefit analysis: Cost-benefit analysis is a technique that can express in a comparable (monetary) way the net effect of the costs and benefits associated with an investment proposal.

Demand management: A management technique used to identify and control demand for services.

Depreciation: The allocation of the cost of an asset over the years of its useful life.

Disposal: The process in which an asset is disposed of or decommissioned – resulting in removal from an entity's balance sheet.

Dis-benefit: A negative impact that might occur as a direct consequence of implementing a particular solution.

Driver: The reason that action needs to be considered at this time. Drivers are normally couched in negative terms such as 'Climate change is demanding new ways of living in Australia'. A driver should capture the essence of what is broken and the consequences.

Economic cost (or opportunity cost): The value of the most valuable of alternative uses.

Enabling asset: Any physical asset that must be built or purchased for the identified changes to occur. This may be, for example, a hospital, a pipeline or an IT system.

Evaluation: The process of defining objectives, examining options and weighing up the costs and benefits before a decision is made to proceed.

Financial analysis: An investment evaluation technique that is confined to the cash-flow implications of alternative options and is undertaken from the perspective of the individual department or agency or government as a whole.

Gateway Review Process: A review of a procurement project or a program of works/activities carried out at critical points of a project/program's development by a team of experienced people, independent of the project team. These critical points are known as Gateways or Gates. There are six gateways during the lifecycle of a project and reoccurring program reviews for programs of works/activities.

Growing Victoria Together: A ten-year Government vision that articulates what is important to Victorians and the priorities that the Victorian Government has set to build a better society.

ICT-dependent: Information and communications technology (ICT)-dependent projects meet any of the following conditions: The ICT component of the project is critical to the overall success of the investment; or \$5 million or more of the total estimated investment (TEI) is assigned to the ICT component; or 50 per cent or more of the TEI is assigned to the ICT component. Examples of ICT components include hardware purchases, software development and IT project management costs (i.e. anything that is covered by the whole-of-Victorian Government ICT classification).

Impact: The cost, benefit or risk (either financial or socio-economic) rising from an investment option.

Investment: The expenditure of funds intended to result in medium to long-term service, or financial benefits rising from the development or use of infrastructure or assets by either the public or private sectors. A single investment proposal may contain a number of related investment expenditures addressing the same service need.

Investment concept brief: A two-page document that shows the logic underpinning an investment and identifies the likely costs, risks, dependencies and deliverables of the proposed solution. It summarises the merits of an investment and allows decision-makers to prioritise competing investments before proceeding to the business case.

Investment logic map: A simple single-page depiction of the logic that underpins an investment. It provides the core focus for an investment and is modified to reflect any changes to the investment logic throughout its lifecycle.

Investment Management Standard: A best-practice approach applied over the life of an investment that aims to reduce the risk of investment failure, provide greater value-for-money and drive better outcomes. It has been designed to enable the *investor* to shape and control investments throughout their lifecycle.

Investment reviews: Formal scheduled periodic reviews that aim to confirm that the logic for an investment remains valid.

Investor: The person who has an identified business problem (or opportunity), will be responsible for making (or advocating) a decision to investment, and who will be responsible for delivering the expected benefits. This person is often referred to as the 'senior responsible owner'.

Lifecycle cost: Lifecycle cost is the total cost of an item or system over its full life. It includes the cost of development, production, ownership (operation, maintenance, support), and disposal, if applicable.

Key performance indicator (KPI): A measure that has been selected to demonstrate that a benefit expected from an investment has been delivered. The KPI must be directly attributable to the investment.

Multi-year strategy: An agreed listing of asset and non-asset initiatives intended to be implemented in the medium term (generally, the next 5-10 years).

New asset option: Acquisition, transfer or commissioning of an existing asset, or creation of a new asset.

Non-asset option: Under this option, service capacity is met without creating additional assets. This could be done through reconfiguration of the way the services are provided (contracting out, increased use of existing or private assets, or reduction of demand through selective targeting).

Objective: The high-level action (or strategic intervention) that is proposed as the response to the identified driver. This intervention must be framed within the context of the organisation's purpose.

Optimism bias: The demonstrated systematic tendency for appraisers to be over-optimistic about key project parameters, including capital costs, operating costs, works duration and benefits delivery.

Options analysis: A process in which a range of options (both asset and non-asset) are evaluated. The most cost-effective options are then selected for more detailed evaluation through a business case.

Outcome(s): In the Government's output/outcome framework, outcomes equate to benefits.

Partnerships Victoria: The Victorian framework for a whole-of-government approach to the provision of public infrastructure and related ancillary services through public-private partnerships. The policy focuses on whole-of-life costing and full consideration of project risks and optimal risk allocation between the public and private sectors. There is a clear approach to value for money assessment and the public interest is protected by a formal public interest test and the retention of "core" public services. Partnerships Victoria is most useful for major and complex capital projects with opportunities for innovation and risk transfer.

Project alliancing: A form of procurement where the State or another government entity collaborates with one or more service providers to share the risks and responsibilities in delivering the capital phase of a project. It seeks to provide better value for money and improved project outcomes through a more integrated approach between the public and private sectors in the delivery of infrastructure. Project alliancing should generally only be considered in the delivery of complex and high-risk infrastructure projects, where risks are unpredictable and best managed collectively.

Project lifecycle: The stages of an asset lifecycle between the identification of the need and the delivery and handover of an initiative.

Proposal: An idea for a policy, program or project that is under development and appraisal.

Residual value: The net value applied to the asset at the end of the investment lifecycle or evaluation period; this may result in either a positive or a negative value.

Resources: Labour, materials and other inputs used to produce outputs.

Revenue: Inflows or other enhancements, or savings in outflows, of service potential or future economic benefits in the form of increases in assets or reductions in liabilities of the entity (other than those relating to contributions by owners) that result in an increase in equity during the reporting period.

Risk: Risk is often characterised by reference to potential events, consequences, or a combination of these and how they can affect the achievement of objectives. Risk is often expressed in terms of a combination of the consequences of an event or a change in circumstances, and the associated likelihood of occurrence.

Risk versus uncertainty: Uncertainty is the extent of variability in the capacity to achieve the desired outcomes or the outcomes themselves. Risks lead to uncertainty.

Scenario analysis: Scenario analysis is a procedure for providing the decision-maker with some information about the effect of risks and uncertainties on an investment. In a scenario analysis, a set of critical parameters and assumptions that define a particular scenario are identified and varied to reflect a best-case and a worst-case scenario.

Service strategy: The strategy for the supply of appropriate services to the community, which is consistent with the entity's corporate goals. It is based on strategic analysis and review of how services are presently provided.

Social benefit: The estimated direct increase in the welfare of society from an economic action. It is the sum of the benefit to the agent performing the action, plus the benefit accruing to society as a result of the action.

Social cost: The estimated direct total cost to society of an economic activity. It is the sum of the opportunity costs of the resources used by the agent carrying out the activity, plus any additional costs imposed on society from the activity.

Strategic assessment: The phase of the project lifecycle during which a need is translated, where justified, into a proposal where outcomes, purpose, critical success factors and the level of strategic alignment are clearly defined.

Value management: Value management is a technique that seeks to achieve optimum value for money, using a systematic review process. The essence of value management is a methodical study of all parts of the product or system to ensure that essential functional requirements are achieved at the lowest total cost. Value management examines the functions required from a product, functions actually performed, and roles of the product's components in achieving the required level of performance. Creative alternatives which will provide the desired functions better or a lower cost can also be explored.

Weighting and scoring: A technique that assigns weights to criteria, and then scores options in terms of how well they perform against those weighted criteria. Weighted scores are summed, and then used to rank options.

Appendix A1: Channel deepening compliance

This information is from the Channel Deepening Environmental Effects Statement (EES) Panel Report, 11 February 2005.

The statutory and policy compliance for the Channel Deepening Project included the following conventions, acts of legislation (Victorian unless separately annotated) and policies. It is presented as a case study to show the complex legal frameworks with which a project may have to comply.

Primary environment assessment and protection legislation and policy:

- *Environment Protection and Biodiversity Conservation Act 1999 (Cwth) (EPBC)*
- *Environment Effects Act 1978*
- *Environment Protection Act 1970*
- *Planning and Environment Act 1987*

Relevant generic policy

- *National Strategy for Ecological Sustainable Development 1992 (Cwth)*
- *Inter-Governmental Agreement on the Environment 1992 (inter-governmental)*
- *Growing Victoria Together*
- *Melbourne 2030*
- *Linking Victoria*

Ports and freight legislation and policy:

- *Port Services Act 1995*
- *Channel Deepening Facilitation Bill*
- *Victorian Ports Strategic Framework 2004*
- *Melbourne Port@L 2002*
- *Victoria: Leading the Way 2004*
- *Shaping a Prosperous Future, Prospects Issues and Choices, 2003*
- *Next Wave of Port Reform in Victoria 2001*
- *Linking Melbourne –Metropolitan Transport Plan 2004*
- *Future Directions 2001*

Marine and water environment legislation and policy:

- *Quarantine Act 1908 (Cwth)*
- *National Ocean Disposal Guidelines for Dredged Material 2002 (Cwth)*
- *Australia's Ocean Policy 1998 (Cwth)*

- *Australian and New Zealand Water Quality Guidelines for Fresh and Marine Waters 2000 (Inter-governmental)*
- *Coastal Management Act 1995*
- *Marine Act 1998*
- *Pollution of Waters by Oil and Noxious Substances Act 1986*
- *State Environment Protection Policy (Waters of Victoria) Act 1988*
- *Schedule F6 Waters of Port Phillip Bay 1997*
- *Schedule F7 Waters of the Yarra Catchment 1999*
- *State Environment Protection Policy (Groundwaters of Victoria) Act 1998*
- *Victorian Coastal Strategy*
- *Victorian Biodiversity Strategy*
- *Waste Management Policy (Ships' Ballast Water) 2003*
- *Industrial Waste Management Policy (Waste Acid Sulphate Soils)1999*
- *Best Practice Environmental Management Guidelines for Dredging 2001*

Resource conservation and management legislation and policy

- *EPBC Act (Cwth)*
- *Fisheries Act 1995*
- *National Parks Act 1975*
- *National Parks (Marine National Parks and Marine Sanctuaries) Act 2002*
- *Crown Land (Reserves) Act 1978*
- *Flora and Fauna Guarantee Act 1988*
- *Wildlife Act 1975*
- *Water Act 1989*
- *Water Industry Act 1994*
- *Catchment and Land Protection Act 1994*
- *Land Act 1958*
- *Victoria's Biodiversity Strategy 1997*
- *Victoria's Native Vegetation Management: A Framework for Action 2002*

Cultural resource legislation and policy

- *EPBC Act (Cwth)*
- *Native Title Act 1993 (Cwth)*
- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwth)*
- *Historic Shipwrecks Act 1976 (Cwth)*
- *Archaeological and Aboriginal Relics Preservation Act 1972*
- *Heritage Act 1995*

Noise policy

- *State Environment Protection Policy (Control of Noise from Commerce Industry and Trade) 1992*
- *Interim Guidelines for Control of Noise from industry in Country Victoria 1989*
- *EPA Noise Control Guidelines (Construction)*

Air policy

- *State Environment Protection Policy (Ambient Air Quality) 1999*
- *State Environment Protection Policy (Air Quality Management) 2001*
- *Industrial Waste Management Policy National Pollutant Inventory*
- *Victoria's Greenhouse Strategy 2002*

Tourism and recreation policy

- *A Medium to Long Term Strategy for Tourism – Green Paper 2003 (Cwth)*
- *Victoria's Tourism Industry Strategic Plan 2002-2006*
- *Melbourne Surrounds Regional Tourism Development Plan 2004-2007*
- *Victoria's Food and Wine Tourism Plan 2004-2007*
- *Victoria's Adventure Tourism Action Plan 2002-2004*
- *Victoria's Nature Based Tourism Directions and Opportunities for Victoria 2000-2003*

State Planning Policy Framework

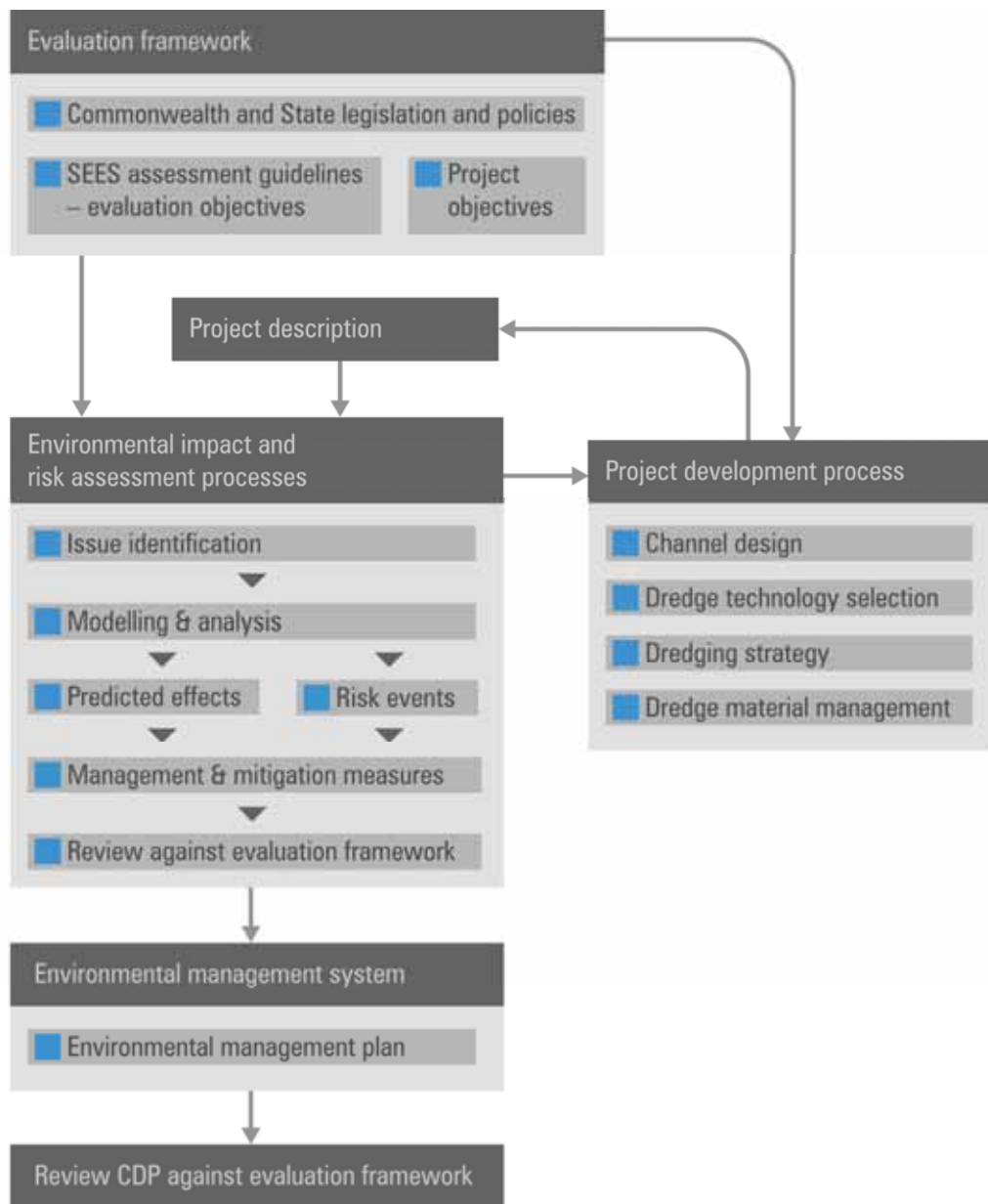
Local Planning Policy Framework

Other legislation and policy

- *Occupational Health and Safety Act 2004*
- *Essential Services Act 1958*
- *Electrical Industry Act 2000*
- *Mineral Resources (Sustainable Development) Act 1990*
- *Gas Safety Act 1997*
- *Pipelines Act 2005*
- *Health Act 1958*
- *Seafood Safety Act 2003*
- *Victorian Shellfish Quality Assurance Program*
- *Dredging Strategy for the Port Waters of Geelong and Melbourne Environmental Management Plan 2000*
- *Victoria Emergency Management Manual*
- *Melbourne Port Emergency Management Plan 2004*
- *Port Phillip Region Marine Pollution Contingency Plan 1999*

Appendix A2: Channel deepening environmental evaluation

This flowchart shows the statutory and policy requirements that the Channel Deepening Project needed to comply with.



Source: Channel Deepening Supplementary Environment Effects Statement 2007

Appendix B: Project wrap-up template

1. Background

Describe in one paragraph the project that is being wrapped up.

2. Risks and issues

Outstanding risks

Complete the table below to describe outstanding risks. These are risks in the area that need to be managed following closure of the project. (Add lines as required.)

Outstanding risks (Post Implementation Review)	Mitigant	Proposed area of responsibility
1.		
2.		
3.		
4.		

Outstanding issues

Complete the table below to describe outstanding issues. These are issues that need to be managed by someone following the closure of the project.

Outstanding Issues (Post-implementation Review)	Proposed management approach	Proposed area of responsibility
1.		
2.		
3.		
4.		

3. Deliverables

Complete the following table to show completion of all project deliverables as documented in the implementation plan.

Deliverable	Actual completion date	Reason for non-delivery (if applicable)
1.		
2.		
3.		
4.		
5.		

4. Lessons learned

Report	Scheduled	Report approved
Post-implementation Review		Y/N
Outcomes evaluation		Y/N

Plan for outcomes evaluation

If outcomes report has not been done, explain plan for completion of outcomes review.

5. Finance and administration checklist

Use the following checklist to prepare to wrap-up project finance and administration. You may add additional tasks.

Task	Y/N	Actual date (Day/Month)
Received final invoices		
Final payments made		
Ensure all staff expenses paid		
New pay points determined for staff transferred		
Advise APU		
Finalise contracts		
Transfer of assets on Asset Management System		
Transfer project files		
Transfer Issues Log		
Transfer Risk Log		
Transfer project resources/equipment		
E-File project documentation		
File project documentation		
Submit Project Documentation to Project Office		
Update Oracle/MIS		
Finalise contracts		
Project team celebration		
Final communication to stakeholders.		
Project marked as completed in BPR		

6. Authorisation

This wrap-up document must be authorised. Authorisation is achieved by obtaining signatures from relevant officers including the Senior Responsible Owner. (This text may be adapted to incorporate the approval process specific to the project.)

Author

/ /

Name:

Position:

Department/Agency:

Senior Responsible Owner

/ /

Name:

Position:

Department/Agency:

/ /

Name:

Position:

Department/Agency:

This template is based on the Project Wrap-up Report used by the Department of Sustainability and Environment.