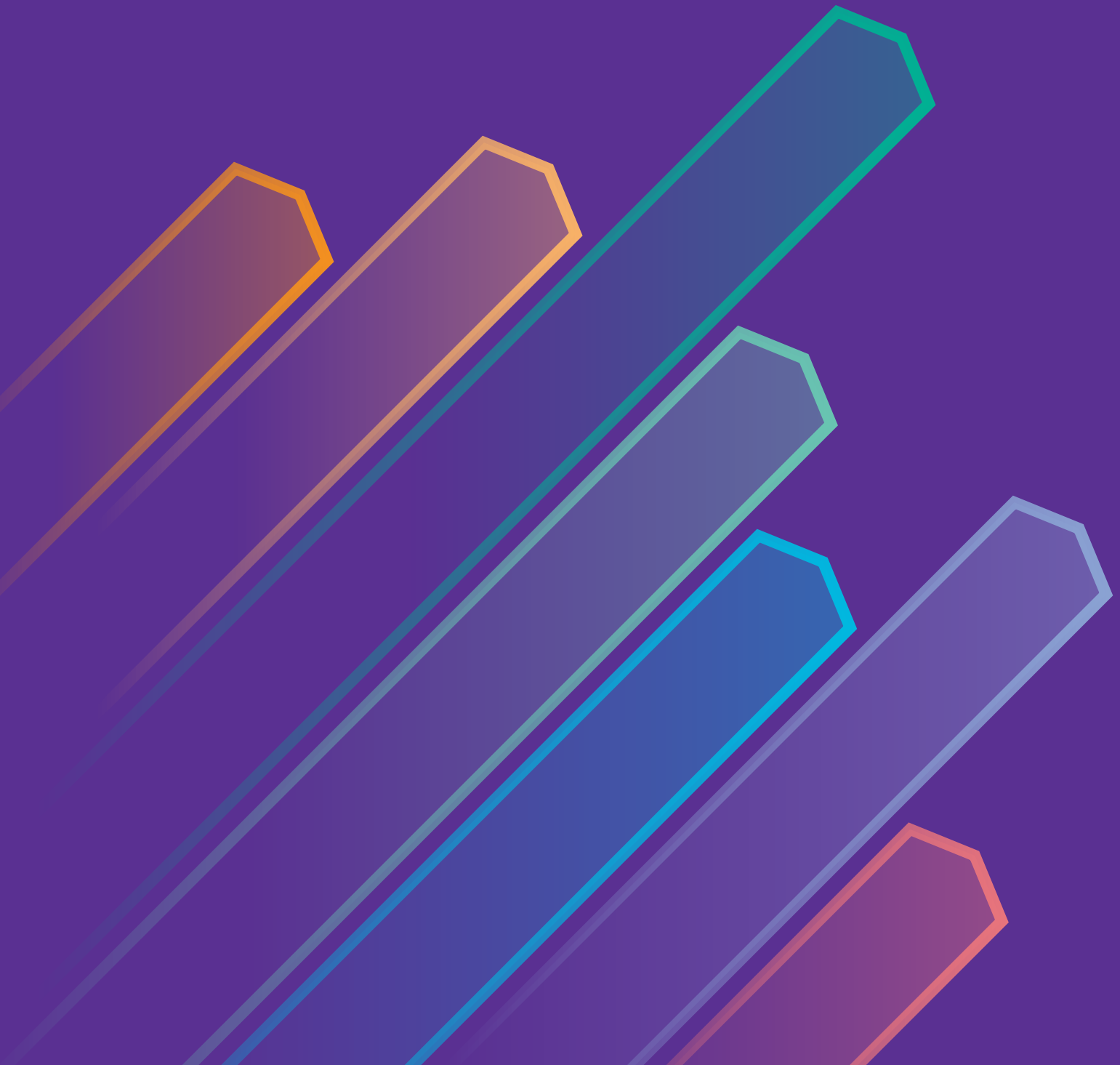


COST MANAGEMENT GUIDELINES

September
2021





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Preface

The National Transport Authority (the NTA) funds public transport projects in the cities and counties of Cork, Dublin, Galway, Limerick and Waterford, and the neighbouring areas of those counties. Such projects are generally sponsored by the NTA's partner organisations (Sponsoring Agencies).

To fulfil its statutory duty to secure the provision of public transport infrastructure on a value for money basis, the NTA requires that Sponsoring Agencies follow clear processes with respect to cost estimation and profiling cost reporting and cost management. Sponsoring Agencies shall follow best practice in implementing these processes, ensuring that the NTA is informed on all cost related issues and that at each milestone in the development of a project the NTA is consulted and sufficiently informed about the developing project costs to make sound decisions on the authorisation of the next stage of work.

These Cost Management Guidelines have been developed to assist Sponsoring Agencies at each phase in the project life cycle. The Guidelines have been structured to allow Sponsoring Agencies to easily identify processes, primary and supplementary phase deliverables and minimum reporting requirements.

While it is recommended that the guidelines are read in their entirety, the applicability of sections of the Guidelines, templates and reporting requirements are specific to the project band and phase. Project flowcharts have been included in the Guidelines to demonstrate the level of information required at each phase and to streamline understanding of the NTA's requirements.

These Guidelines are not intended to constrain the estimating processes or good practice of the Sponsoring Agencies and their partner organisations / consultants. The Guidelines are intended to ensure consistency of approach, consideration of specific project costs and accountability.

We wish to acknowledge the work of cost consultants ChandlerKBS, who prepared these Guidelines on behalf of the NTA.

1. Introduction

1.1 The National Transport Authority

The NTA is a Statutory non-commercial body established by the Minister for Transport on 1st December 2009. At a national level, the NTA has responsibility for securing the provision of public passenger land transport services. This includes the provision of subvented bus and rail services. Refer to NTA website for details of NTA key functions, www.nationaltransport.ie.

The agencies funded by the NTA to undertake transport related projects include local authorities, transport operators and State bodies.

1.2 Purpose and Objectives of the Guidelines

The NTA predominately carries out the role of Approving Authority for the financing and construction of most public transport infrastructure in the Greater Dublin Area (GDA) and in the cities and counties of Cork, Dublin, Galway, Limerick and Waterford, and the neighbouring areas of those counties. In addition, the NTA administers, on behalf of the Department of Transport several grant programmes operated by the Department.

As an Approving Authority, the NTA has accountability for the expenditure of public funds by Sponsoring Agencies. Consequently, the NTA has a duty to oversee budgeting and management of the costs of capital projects.

These Guidelines define the minimum project cost management requirements for NTA approved and/or sponsored projects.

The primary objective of these Guidelines is to set out a consistent and transparent approach across projects undertaken by agencies in receipt of NTA funding and to provide the NTA with the degree of transparency and certainty that is appropriate for an Approving Authority. It is considered that adherence to these Guidelines should help ensure that the outturn cost of a project is as close to pre-construction cost estimates as possible, by fostering a “No Surprises” approach to project delivery and creating a culture of accountability.

1.3 Interaction with Other Guidance

These Guidelines form part of and should be read in conjunction with the NTA’s most up to date suite of guidance documents, in particular the Project Approval Guidelines (PAGs) and Eligible Expenditure Guidelines for Projects Funded by the NTA.

Should an ambiguity or an inconsistency exist between the Project Approval Guidelines and the Cost Management Guidelines, guidance/requirements set out in the Project Approval Guidelines shall take precedence.

These Guidelines should be read in conjunction with the latest version of other relevant Government guidelines including but not limited to:

1. The Public Spending Code: Expenditure Planning, Appraisal & Evaluation in the Irish Public Service: Standard Rules & Procedures (Department for Public Expenditure & Reform (DEPR));
2. Circular No. 13/2014 entitled ‘Management of and Accountability for Grants from Exchequer Funds’, Department of Public Expenditure and Reform;

3. Capital Works Management Framework (CWMF) including associated Guidance Notes.
4. Common Appraisal Framework for Transport Projects and Programmes (Department of Transport).
5. Guidelines for the Appraisal and Management of Capital Expenditure Proposals in the Public sector (DPER).

1.4 Applicability of the Guidelines

These Guidelines apply to all projects that are approved or sponsored by the NTA and are governed by the PAGs. These Guidelines are not a reference only document, their use is mandatory and the templates referred to herein are to be utilised as part of the cost management process.

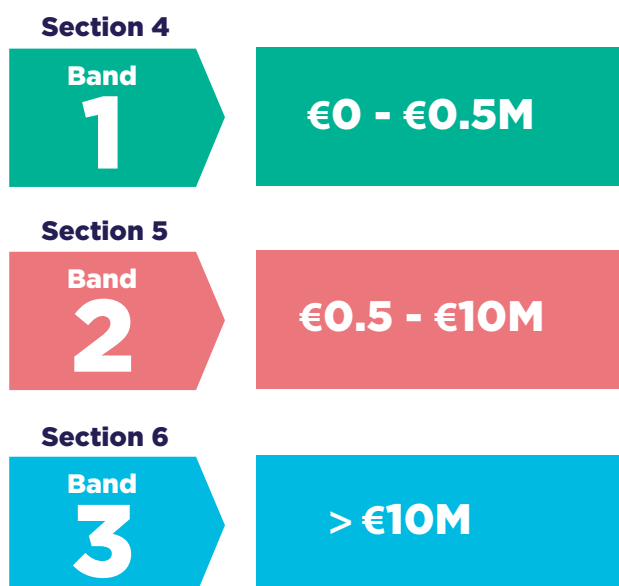
Notwithstanding this, parties are expected to continue to apply their own cost management processes but must address any explicit requirements specified in these Guidelines. Adherence to these Guidelines must always be demonstrable, with deviation from the Guidelines only permitted by the prior written approval of the NTA. It is anticipated that written approval to deviate from the Guidelines may only be granted in unique circumstances or where alternative approaches are being adopted.

These Guidelines do not aim to be a full statement of all duties and obligations. Responsibility for ensuring that projects are progressed in accordance with applicable legislation, standards and other relevant guidelines remains with the project team at the Sponsoring Agency.

2. Layout of these Guidelines

The purpose of these Guidelines is to provide a framework for, and a phased approach to cost management in the development, management and delivery of capital investment projects. The Project Approval Guidelines should be considered the primary reference document for all projects that are approved or sponsored by the NTA.

These Guidelines are band specific. The section of the Guidelines relating to each project band is identified below:



In addition to text guidance, to improve consistency and efficiency of cost delivery a series of templates have been developed to assist cost estimation and reporting. The following templates have been provided:

- Pre-construction phase financial reports.
- Contingency calculators & risk registers.
- Cost estimate templates.
- Deliverable checklists.
- Construction phase financial dashboards and reports.

While this document contains cost management guidance relating to all projects, it has been designed to allow relevant parts to be easily extracted and applied to projects according to their forecast outturn cost. Therefore, there is no requirement to use this document in its entirety, simply the parts that are relevant based on the project value. To facilitate this, an overview of key cost management deliverables for each project band has been provided in Section 7.

Within guidance relating to specific project bands there is a significant volume of repetition (e.g. descriptions of Contingency Calculators and Quantitative Risk Assessments etc). This is intentional by design to avoid those using the Guidelines to cross-reference between different project phases.

Templates required in the cost management of each project band will be available for download on the NTA publications site (www.nationaltransport.ie/publication). The templates required for each project band have been outlined in the matrix included in Section 3 of these Guidelines.

Each template has been allocated a unique code which is referenced throughout the Guidelines. This code is important because it relates to the naming convention utilised on the NTA's publications site.

The reference code is based on the following:

1. The order in which the document is encountered in these Guidelines.
2. Applicability to the project band (e.g. B1 applies to Band 1 projects only, B12 applies to Band 1 & 2 projects).
3. The acronym of the document type (e.g. FR is Financial Report, TPCE is Total Project Cost Estimate etc).
4. Document Appropriate to the Cost Management Guidelines (CMG).

3. CMG Templates Matrix

Guidelines Content	Document Ref.	Band 1	Band 2	Band 3
Band Specific Text		Pg 10-15	Pg 16-26	Pg 27-38
Contingency Calculator	001_ B123_CC_CMG	✓	✓	✓
Grant Application Cost Estimate	002_ B123_GACE_CMG	✓	✓	✓
Phase Checklist	003_ B1_CL_CMG	✓	✗	✗
Quantitative Risk Assessment	004_ B1_QRA_CMG	✓	✗	✗
Preliminary Cost Estimate	005_ B1_PCE_CMG	✓	✗	✗
Total Project Cost Estimate	006_ B1_TPCE_CMG	✓	✗	✗
Final Account Report	007_ B1_FAR_CMG	✓	✗	✗
Pre-Construction Financial Report	008_ B23_FR_CMG	✗	✓	✓
Situation Notification	009_ B23_SN_CMG	✗	✓	✓
Phase Checklist	010_ B23_CL_CMG	✗	✓	✓
Option Comparison Cost Estimate	011_ B23_OCCE_CMG	✗	✓	✓
Feasibility Working Cost Estimate	012_ B23_FWCE_CMG	✗	✓	✓
Quantitative Risk Assessment	013_ B23_QRA_CMG	✗	✓	✓
Preliminary Cost Estimate	014_ B23_PCE_CMG	✗	✓	✓
Cost Estimate Report	015_ B23_CER_CMG	✗	✓	✓
Updated Preliminary Cost Estimate	016_ B23_UPCE_CMG	✗	✓	✓
Pre-Tender Cost Estimate	017_ B23_PTCE_CMG	✗	✓	✓
Total Project Cost Estimate	018_ B23_TPCE_CMG	✗	✓	✓
Construction Phase Financial Dashboard	019_ B23_FD_CMG	✗	✓	✓
Construction Phase Financial Report	020_ B23_FR_CMG	✗	✓	✓
Final Account Report	021_ B23_FAR_CMG	✗	✓	✓
Glossary	022_ B123_CMG	✓	✓	✓

4. Band 1 (€0 - €0.5m)

Unless otherwise approved in writing by the NTA, the cost management requirements identified in this section shall be provided as a minimum.

Where NTA are funding (or are part funding) a project which has a forecast total cost of €0.5m or less, a simplified approach is adopted. The applicable cost management requirements and associated templates for a Band 1 project are outlined in this section of the Guidelines.

A flowchart identifying the cost management deliverables at each Project Phase for Band 1 Projects is detailed in Figure 1 of the key cost management deliverables contained in Section 7 of these Guidelines.

4.1 General Cost Management Requirements

Project Management Support

All members of the project team shall support and facilitate project management throughout delivery of the project. From a cost management perspective, this includes but is not limited to, preparation of the business case, development of the procurement strategy, risk management strategy, project processes, contract administration and project reporting.

Project Control Document

For a Band 1 project, a Project Control Document (PCD) shall be submitted at project phases 2 - 7 to obtain approval to proceed to the next project gateway.

To obtain approval at each gateway, part of the requirements in completing the document is to include actual or estimated costs for each of the project phases. The costs included in each PCD shall be consistent with the cost estimates that have been prepared in accordance with these Guidelines.

4.2 Phase 1 – Scope & Purpose

Contingency Quantification

In assessing project contingency allowances, the contingency calculator in template (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Grant Application Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

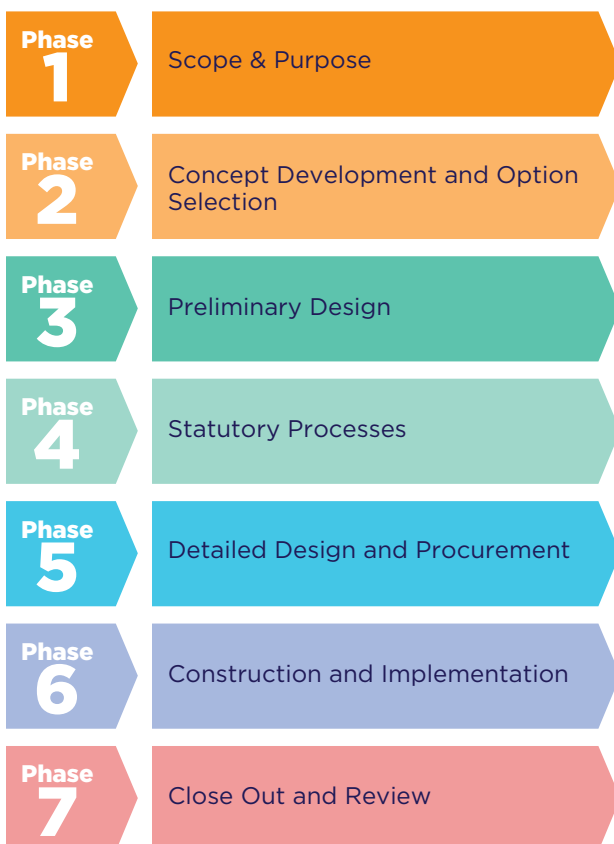
The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Grant Application Cost Estimate

As part of the preliminary work required to support the Project Grant Application Form, a Grant Application Cost Estimate shall be prepared using the template included in template (002_B123_GACE_CMG). This is an assessment of the total cost of the project. The following shall be included as a minimum:

- A project description.
- Estimated project construction costs, preparation and administration costs (including project management and client costs), land costs (including provision for contingency) and traffic management related costs.
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- Confirmation of the source of cost data.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The above information will generate the grant application cost estimate section of template (002_B123_GACE_CMG), against the following seven estimate parameters;



Accurate estimating for inclusion within the grant application form will be vital as this will form the basis for determining the funding required for the project and the appropriate project band.

Gateway approval must be obtained prior to proceeding to Phase 2.

Phase 1 Checklist

Phase 1 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 1 Checklist (003_B1_CL_CMG).

4.3 Phase 2 – Concept Development and Option Selection

General

For Band 1 projects there are no pre-defined cost management deliverables for Phase 2. However, the NTA may instruct Sponsoring Agencies to comply with specific instructions on a project-by-project basis.

4.4 Phase 3 – Preliminary Design

Risk Quantification

To assess project risk, a Quantitative Risk Assessment (QRA) shall be carried out using the relevant template (004_B1_QRA_CMG). This template will generate a risk value that shall be incorporated into the Preliminary Cost Estimate.

It is important to ensure that identified risks are given an accurate risk rating in terms of the probability and impact, failure to do so could result in a disproportionate risk value being generated relative to a particular project.

The requirement to use the QRA template may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA.

If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how risk shall be calculated.

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Preliminary Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Preliminary Cost Estimate

A Preliminary Cost Estimate shall be prepared using the template (005_B1_PCE_CMG). This estimate should reflect the total project cost based on the preliminary design and information assembled during the project phase.

The Preliminary Cost Estimate shall reflect the level of detail developed during Phase 3. As a minimum the Preliminary Cost Estimate should include:

- A project description.
- Forecast project construction costs broken down to relevant construction series headings, preparation and administration costs (including project management and client costs) and traffic management related costs.
- Risk using the uplift percentage generated from the QRA template (004_B1_QRA_CMG).
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- Detailed land costs based on the land take requirements established during design development (including provision for contingency).
- Confirmation of the source of cost data.
- A comparison between the Preliminary Cost Estimate and the Option Comparison Cost Estimate, prepared in Phase 2 (if prepared).
- A forecast expenditure profile of total project costs per quarter.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The Preliminary Cost Estimate Template (005_B1_PCE_CMG) is intended to ensure consistency in the reporting of project costs, it is not intended to constrain the detail or methodology of cost estimating conducted by the project team. The Preliminary Cost Estimate shall be prepared commensurate to the design detail and information available, which may include the production of a priced Bill of Quantities.

The NTA reserves the right to request and receive substantiation of how the cost estimate has been produced and the information used to develop the cost estimate.

Phase 3 Checklist

Phase 3 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 3 Checklist (003_B1_CL_CMG).

4.5 Phase 4 – Statutory Processes

General

For Band 1 projects there are no pre-defined cost management deliverables. However, the NTA may instruct Sponsoring Agencies to comply with specific instructions on a project-by-project basis.

4.6 Phase 5 – Detailed Design and Procurement

Development of Commercial Tender Documents

The development of tender documents remains the responsibility of the Project Manager, however it may be a cost management requirement to prepare documents relating to the commercial section of the tender. This may include, but is not limited to, the development of Bills of Quantities, Activity Schedules or other Pricing Models.

The following documents, inter alia, should be considered:

- GN 1.4 Procurement & Contract Strategy for Public Works Contracts;
- GN 1.5 Public Works Contract; and
- GN 2.3 Procurement Process for Works Contractors.

The format of tender documents shall comply with the DoF CWMF (Department of Finance, Capital Works Management Framework) Guidance Note, and such compliance is to be confirmed to the NTA.

Commercial Assessment of Tender Returns

Following receipt of tenders, assessment of the commercial sections of tender returns shall comprise:

- Summary comparison of each the returned tenders.
- Identification of any ambiguities or inconsistencies within the returned tenders.
- Identification of any of tender prices that appear to be abnormally low.
- Identification and drafting of requests for clarification.

Findings shall be submitted to the Project Manager who is responsible for preparing the Tender Report.

Risk Quantification

To assess project risk, a Quantitative Risk Assessment (QRA) shall be carried out using the relevant template (004_B1_QRA_CMG). This template will generate a risk value that shall be incorporated in the Total Project Cost.

It is important to ensure that identified risks are given an accurate risk rating in terms of the probability and impact, failure to do so could result in a disproportionate risk value being generated relative to a particular project.

The requirement to use the QRA template may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how risk shall be calculated.

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Total Project Cost. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Total Project Cost

A Total Project Cost shall be prepared using the relevant template (006_B1_TPCE_CMG). The Total Project Cost shall take account of the Contract Sums for the main contracts and any changes to other costs as necessary.

The Total Project Cost shall include as a minimum:

- A project description.
- Contract sums for main contracts.
- Preparation and administration cost allowances (which includes project management and client costs).

- Traffic management related cost allowances.
- Land and property costs (including provision for contingency).
- Risk using the uplift percentage generated from the QRA template (004_B1_QRA_CMG).
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- A comparison between the Total Project Cost and the Preliminary Cost Estimate, prepared in Phase 3. This shall include a narrative explaining the reason for any variances.
- A forecast expenditure profile of total project costs per quarter.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

Any additional budget requirements which were not foreseen or accounted for in the Preliminary Cost Estimate shall be approved in writing by the NTA prior to proceeding. Unapproved costs may be declined at a later stage.

Phase 5 Checklist

Phase 5 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 5 Checklist (003_B1_CL_CMG).

4.7 Phase 6 – Construction and Implementation

General

During the construction and implementation phase of the contract there may be a requirement to provide cost management services to facilitate project delivery. Instructions will be provided on a project-by-project basis and may include but is not limited to preparing Financial Reports, assessing Payment Claim Notices, Risk Management, advising on and assessing contract claims and assisting with the agreement of the Final Account.

Final Account Report

A Final Account Report shall be prepared using the relevant template (007_B1_FAR_CMG). The Final Account Report shall include the following as a minimum:

- The outturn costs allocated to their specific cost heads.
- An expenditure profile comparison with the Total Project Cost.
- A cost and programme comparison with the Total Project Cost.
- Substantiation for variances exceeding 10%.

4.8 Phase 7 – Close-out and Review

Capture Tender & Outturn Cost Information

Tender and outturn cost data shall be captured and submitted in a format that is acceptable to NTA.

Effective capture of outturn cost information will ensure that NTA and Sponsoring Agencies have access to reliable raw cost data to inform and prepare future cost estimates.

Compile and Submit Commercial Lessons Learned

A commercial lessons learned workshop shall be conducted with project team members. Following this workshop, a register of commercial lessons learned experienced throughout the delivery of the project shall be compiled.

Lessons learned registers shall include the following as a minimum:

- The lesson learned.
- The applicable Gate Review Phase.
- The impact that the issue had in terms of time or cost.

- How the project team can apply these lessons to future projects.
- Commercial lessons learned registers shall be submitted to the NTA within three months of Substantial Completion.

5. Band 2 (€0.5 - €10m) Projects

Unless otherwise approved in writing by the NTA, the cost management requirements identified in this section shall be provided as a minimum.

If these Cost Management Guidelines are considered unsuitable for specific projects, the Sponsoring Agency may submit alternative proposals to the NTA for acceptance. These alternative proposals must incorporate the principles of these Cost Management Guidelines at a minimum.

Where NTA are funding (or are part funding) a project which has a forecast total cost which is between €0.5 million and €10 million, Band 2 cost management requirements apply and these are outlined in this section of the Guidelines.

A flowchart identifying the cost management deliverables at each Project Phase for Band 2 Projects is detailed in Figure 2 of the key cost management deliverables contained in Section 7 of these Guidelines.

5.1 General Cost Management Requirements

Preconstruction Financial Reporting (Phases 1 – 5)

During Phases 1 to 5 reports shall be prepared and provided to the Project Manager monthly. The Project Manager is responsible for reviewing Financial Reports and submitting these to the Sponsoring Agency and Approving Authority.

The relevant template (008_B23_FR_CMG) shall be used to prepare Financial Reports.

Situation Notification (Phases 2 – 6)

The NTA shall be notified immediately as events occur or knowledge of the potential to occur arises. Events include those that:

- May impact the band the project should be assessed at.
- Could impact on whether the project is considered value for money.
- Could impact on the affordability of the project.
- Could delay project/phase completion or meeting a key date.

To notify the NTA, the Situation Notification Template (009_B23_SN_CMG) shall be submitted. A summary of Situation Notifications is also included as part of this template to ensure that consideration is given to the cumulative impact of all Situation Notifications.

Situation Notifications provide the project team with an opportunity to collaboratively manage risks and opportunities. The issue of Situation Notifications should be mutually beneficial, helping to ensure that informed decision making occurs at the earliest opportunity.

Project Management Support

All members of the project team shall support and facilitate project management throughout delivery of the project. From a cost management perspective, this includes but is not limited to, preparation of the business case, development of the procurement strategy, project processes, contract administration and project reporting.

Project Control Document

For a Band 2 project, a Project Control Document (PCD) shall be submitted at project phases 2 – 7 to obtain approval to proceed to the next project gateway.

To obtain approval at each gateway, part of the requirements in completing the document is to include actual or estimated costs for each of the project phases.

The costs included in each PCD shall be consistent with the cost estimates that have been prepared in accordance with these Guidelines.

5.2 Phase 1 – Scope and Purpose

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Grant Application Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency’s assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of “Reference Class Forecasting”, with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Grant Application Cost Estimate

As part of the preliminary work required to support the Project Grant Application Form, a Grant Application Cost Estimate shall be prepared using the relevant template (002_B123_GACE_CMG). This is an assessment of the total cost of the project. The following shall be included as a minimum:

- A project description.
- Estimated project construction costs, preparation and administration costs (including project management and client costs), land costs (including provision for contingency) and traffic management related costs.
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- Confirmation of the source of cost data.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The above information will generate the grant application cost estimate section of the template (002_B123_GACE_CMG), against the following seven estimate parameters:



Accurate estimating for inclusion within the grant application form will be vital as this will form the basis for determining the funding required for the project and the appropriate project band.

Gateway approval must be obtained prior to proceeding to Phase 2.

Phase 1 Checklist

Phase 1 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 1 Checklist (O10_B23_CL_CMG).

5.3 Phase 2 – Concept Development and Option Selection

Option Comparison Cost Estimates

Option Comparison Cost Estimates shall be prepared and shall form a section of the Option Selection Report prepared by the Project Manager, which will be used to support the identification of the Preferred Option.

Option Comparison Cost Estimates shall be prepared to facilitate the Option Selection process using the relevant template (O11_B23_OCCE_CMG) unless otherwise approved in writing by the NTA.

Substantiation of the information and data used to develop the Option Comparison Cost Estimate shall be provided whenever requested by the NTA.

Due consideration should be given to the characteristics of each option in determining add-on costs for preparation and administration, traffic management related costs, land and property and contingency. Where options display similar characteristics and complexity, add-on costs (or the percentages applied thereto) should be consistent.

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (O01_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Feasibility Working Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Risk Management

Support shall be provided to the project team in identifying key project risks associated with the Preferred Option, particularly in relation to commercial risks.

Feasibility Working Cost Estimate

Upon identification of the Preferred Option, a Feasibility Working Cost Estimate shall be prepared using the relevant template (O12_B23_FWCE_CMG). This is an assessment of the total cost of the project, which should be as detailed as possible taking account of the level of project information and the maturity of the design.

The following shall be included as a minimum:

- A project description.
- Forecast project construction costs, preparation and administration costs (including project management and client costs), land costs (including provision for contingency) and traffic management related costs.
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).
- Confirmation of the source of cost data.
- A forecast expenditure profile of total project costs per quarter.
- A comparison between the Feasibility Working Cost Estimate and Option Comparison Cost Estimate prepared for the Preferred Option, prepared earlier in Phase 2.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The requirement to prepare a Feasibility Working Cost Estimate may be relaxed subject to prior written approval from the NTA. If the requirement to prepare a Feasibility Working Cost Estimate is relaxed, Sponsoring Agencies are required to provide a cost estimate range of total project costs unless the NTA has confirmed that there is no requirement to provide a cost estimate at Phase 2.

Phase 2 Checklist

Phase 2 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 2 Checklist (010_B23_CL_CMG).

5.4 Phase 3 – Preliminary Design

Application of Value Management and Value Engineering Processes

Value Management and Value Engineering processes shall be adopted throughout Phase 3, which will assist with defining, maximising and achieving value for money on each project.

In carrying out Value Management and Value Engineering processes, the following should be considered as a minimum:

- Whether the design achieves the optimum balance between functionality and cost.
- Whether the Specification can be changed without impacting the functional quality.
- Programme alteration to facilitate a more efficient works delivery.
- Possibility of enabling works or advanced works packages.
- A Value Management report should be appended to the project cost estimate reports.

Risk Quantification

In establishing risk and contingency allowances, support shall be provided to the project team in identifying, assessing and mitigating project risks. A particular focus from a cost management perspective relates to commercial risks.

To assess project risk, a Quantitative Risk Assessment (QRA) shall be carried out using the relevant template (013_B23_QRA_CMG). This template will generate a risk value that shall be added to base costs in the Preliminary Cost Estimate.

The requirement to use the QRA template may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA.

If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how risk shall be calculated.

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Preliminary Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Preliminary Cost Estimate

A Preliminary Cost Estimate shall be prepared using the relevant template (014_B23_PCE_CMG). This estimate should reflect the total project cost based on the preliminary design and information assembled during the project phase.

The Preliminary Cost Estimate shall reflect the level of detail developed during Phase 3. As a minimum the Preliminary Cost Estimate should include:

- A project description.
- Forecast project construction costs broken down to relevant construction series headings, preparation and administration costs (including project management and client costs) and traffic management related costs.
- Risk value generated using the QRA template (013_B23_QRA_CMG).
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).
- Detailed land costs based on the land take requirements established during design development (including provision for contingency).
- Confirmation of the source of cost data.
- A comparison between the Preliminary Cost Estimate and the Feasibility Work Cost Estimate, prepared in Phase 2 (or Option Comparison Cost Estimate if the Feasibility Working Cost Estimate was not required).
- A forecast expenditure profile of total project costs per quarter.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The Preliminary Cost Estimate Template (O14_B23_PCE_CMG) is intended to ensure consistency in the reporting of project costs, it is not intended to constrain the detail or methodology of cost estimating conducted by the project team. The Preliminary Cost Estimate shall be prepared commensurate to the design detail and information available, which may include the production of a priced Bill of Quantities.

The NTA reserves the right to request and receive substantiation of how the cost estimate has been produced and the information used to develop the cost estimate.

A Cost Estimate Report shall be prepared, and the Preliminary Cost Estimate shall be submitted as part of this report. The Cost Estimate Report Template (O15_B23_CER_CMG) details the minimum requirements.

Independent Peer Review of Pre-Tender Estimate

A Peer Review of the Preliminary Cost Estimate and Cost Estimate Report may be undertaken by a Peer Review Panel if directed by the NTA. The Peer Review Panel members will be agreed with the NTA.

Any issues or queries raised by the Peer Review shall be logged in the Cost Estimate Report and the Cost Estimate shall be updated accordingly.

Prepare Whole Life Cost Analysis

In addition to preparing cost estimates based on capital costs only, Whole Life Cost Estimates may be prepared for the project if directed by the NTA. In addition to capital costs, Whole Life Cost Estimates will include forecasts of operating, maintenance and renewal costs for the period of appraisal (to be advised by the Project Manager).

Phase 3 Checklist

Phase 3 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 3 Checklist (O10_B23_CL_CMG).

5.5 Phase 4 – Statutory Processes

General

For Band 2 projects there are no pre-defined cost management deliverables. However, the NTA may instruct Sponsoring Agencies to comply with specific instructions on a project-by-project basis.

For example, the NTA may request that the Sponsoring Agency update the Preliminary Cost Estimate (O16_B23_UPCE_CMG) based on documents issued for Statutory Approval.

5.6 Phase 5 – Detailed Design and Procurement

Preparation of a Pre-Tender Cost Estimate

A Pre-Tender Cost Estimate shall be prepared using the relevant template (O17_B23_PTCE_CMG). This estimate should reflect the total project cost based on the detailed design and information assembled up to the date of the Pre-Tender Cost Estimate.

The Pre-Tender Cost Estimate shall reflect the level of detail developed during Phase 5. As a minimum the Pre-Tender Cost Estimate should include:

- A project description.
- Forecast project construction costs broken down to relevant construction series headings, preparation and administration costs (including project management and client costs) and traffic management related costs.
- Risk value generated using the QRA template (O13_B23_QRA_CMG).

- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).
- Detailed land costs based on the land take requirements established during design development (including provision for contingency).
- Confirmation of the source of cost data.
- A comparison between the Pre-Tender Cost Estimate and the Preliminary Cost Estimate, prepared in Phase 3. This shall include a narrative explaining the reason for any variances.
- A forecast expenditure profile of total project costs per quarter.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The Pre-Tender Cost Estimate Template (017_B23_PTCE_CMG) is intended to ensure consistency in the reporting of project costs, it is not intended to constrain the detail or methodology of cost estimating conducted by the project team. The Pre-Tender Cost Estimate shall be prepared commensurate to the design detail and information available, which may include the production of a priced Bill of Quantities.

The NTA reserves the right to request and receive substantiation of how the cost estimate has been produced and the information used to develop the cost estimate.

A Cost Estimate Report shall be prepared and the Pre-Tender Cost Estimate shall be submitted as part of this report. The Cost Estimate Report Template (015_B23_CER_CMG) details the minimum requirements.

Development of Commercial Tender Documents

The development of tender documents remains the responsibility of the Project Manager, however it may be a Cost Management requirement to prepare documents relating to the commercial section of the tender. This may include, but is not limited to, the development of Bills of Quantities, Activity Schedules or other Pricing Models.

The following documents, inter alia, should be considered:

- GN 1.4 Procurement & Contract Strategy for Public Works Contracts;
- GN 1.5 Public Works Contract; and
- GN 2.3 Procurement Process for Works Contractors.

The format of tender documents shall comply with the DoF CWMF (Department of Finance, Capital Works Management Framework) Guidance Note, and such compliance is to be confirmed to the NTA.

Commercial Assessment of Tender Returns

Following receipt of tenders, assessment of the commercial sections of tender returns shall comprise:

- Summary comparison of each of the returned tenders.
- Identification of any ambiguities or inconsistencies within the returned tenders.
- Identification of any tender prices that appear to be abnormally low.

- Identification and drafting of requests for clarification.

Findings shall be submitted to the Project Manager who is responsible for preparing the Tender Report.

Risk Quantification

In establishing risk and contingency allowances, support shall be provided to the project team in identifying, assessing and mitigating project risks. A particular focus from a cost management perspective relates to commercial risks.

To assess project risk, a Quantitative Risk Assessment (QRA) shall be carried out using the template and supplemental guidance (O13_B23_QRA_CMG).

The requirement to use the QRA template may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how risk shall be calculated.

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (O01_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Preliminary Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance.

If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Total Project Cost

A Total Project Cost shall be prepared using the relevant template (O17_B23_TPCE_CMG). The Total Project Cost shall take account of the Contract Sums for the main contracts and any changes to the base costs (e.g. land & property) if necessary.

The Total Project Cost shall include:

- A project description.
- Contract sums for main contracts.
- Preparation and administration cost allowances (including project management and client costs).
- Traffic management related cost allowances.
- Land and property costs (including provision for contingency).
- Risk value generated using the QRA template (O13_B23_QRA_CMG).
- Contingency based on percentage uplift generated from the Contingency Calculator (O01_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).

- A comparison between the Total Project Cost and the Pre-Tender Cost Estimate, prepared earlier in Phase 5. This shall include a narrative explaining the reason for any variances.
- A forecast expenditure profile of total project costs per quarter.

A Cost Estimate Report shall be prepared, and the Total Project Cost shall be submitted as part of this report. The Cost Estimate Report Template (O15_B23_CER_CMG) details the minimum requirements.

Any additional budget requirements which were not foreseen or accounted for in the Pre-Tender Estimate completed in Phase 5 shall be approved by the NTA prior to proceeding to Construction, Phase 6.

Phase 5 Checklist

Phase 5 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 5 Checklist (O10_B23_CL_CMG).

5.7 Phase 6 – Construction and Implementation

Monthly Financial Reporting

To ensure that the NTA is fully informed of current and potential future project costs, a Construction Phase Financial Dashboard shall be prepared and submitted to the NTA monthly. The Construction Phase Financial Dashboard template (O19_B23_FD_CMG) shall be utilised.

The Sponsoring Agency are also required to prepare Financial Reports that are to be made available to NTA upon request. The Financial Report Template (O20_B23_FR_CMG) shall be utilised.

Financial Reports shall include as a minimum:

- Detailed analysis of cumulative amounts certified.
- Updated Contract Sum.

- Value of agreed and pending and disputed Change Orders, Compensation and Delay Events and Employer Claims.
- Value of other potential liabilities.
- Forecast final account value.
- Key dates.
- Updated expenditure profile.

Effective financial reporting will provide the NTA with the opportunity to budget effectively and to implement mitigation measures where projects have or could become unaffordable.

Monthly Assessment of Payment Claim Notice

Payment claim notices (interim applications) from the Contractor shall be received and the amount due determined in accordance with the specific conditions of contract. A recommendation for payment shall be submitted to the Project Manager or such other appropriate designated person within the Sponsoring Agency.

It is the responsibility of the Sponsoring Agency to ensure that payments are made within the period specified in the contract following receipt of the recommendation.

Advice and Assessment of Contract Claims

Advice and assessment of entitlement (including value) of Contract Claims shall be provided in relation to both Change Orders and Claims for Compensation and Delay Events.

Change Orders

The Change Order process comprises requests for written approval from the NTA for Change Orders with a value exceeding €25,000.

Change Orders with values that do not require written approval from NTA shall be notified in the next Project Report. Failure to notify of these Change Orders in the Project Report

will require requests to be made for written approval from the NTA irrespective of value.

When the cumulative value of Change Orders and Claims for Compensation and Delay Events exceed a value advised by NTA, Change Order Requests shall be submitted for all future Change Orders irrespective of the value.

A Justification Report shall be prepared to support all Change Order Requests. It is a Cost Management requirement to contribute to the commercial parts of the Justification Report.

A register of all issued Change Orders shall be maintained. This register shall be included in the Financial Reports and Progress Reports which are to be issued monthly to the NTA.

All parties must comply with the conditions of the main contract in respect to the assessment of claims and timescales for reply.

Claims for Compensation and Delay Events

Assist the Employer's Representative in acknowledging and processing claims for Compensation and Delay Events, in addition to other contractual claims. This process shall include assessing validity and the value of the claim, as well as advising on how the Employer's Representative should respond to the claim. The NTA shall be advised of the potential liabilities associated with these claims.

It is the responsibility of the Sponsoring Agency to notify the NTA at the earliest opportunity of any potential claims liability which may impact on scope, quality, cost or completion date of the project. Contribution to and facilitation of this process is to be provided by preparing requisite information and ensuring that Sponsoring Agencies are notified in the first instance.

Contemporaneous records shall be maintained to ensure that the project team can properly assess and make an appropriate determination on all claims.

All parties must comply with the conditions of the main contract in respect of the assessment of claims and timescales for reply.

Risk Management

Risk management shall continue to be undertaken during the construction phase of each project. This includes continuing to support the project team in identifying continuing, new and closed risks.

Risk shall continue to be an item on the agenda at each Project Team meeting. This should help the entire project team to work in a collaborative manner to mitigate the occurrence and impact of risk should it be realised.

Contract Final Accounts

Facilitate and assist in the preparation and agreement of final accounts. In addition to closing out all issues relating to the contract sum, payments and contract claims, this may include engaging with experts/legal advisors should there be a referral to a dispute resolution process and obtaining prior approval from the NTA for reimbursement of cost overruns where the construction / implementation contract(s) exceed the Total Project Cost.

Final Account Report

A Final Account Report shall be prepared using the relevant template (O21_B23_FAR_CMG). The Final Account Report shall include the following as a minimum:

- The outturn costs allocated to their specific cost heads.
- An expenditure profile comparison with the Total Project Cost.
- A cost and programme comparison with the Total Project Cost.
- Substantiation for variances exceeding 10%.

5.8 Phase 7 – Close-out and Review

Capture Outturn Cost Information

Tender and outturn cost data shall be captured and submitted in a format that is acceptable to NTA.

Effective capture of outturn cost information will ensure that NTA and Sponsoring Agencies have access to reliable raw cost data to inform and prepare future cost estimates.

Compile and Submit Commercial Lessons Learned

A commercial lessons learned workshop shall be conducted with project team members. Following this workshop, a register of commercial lessons learned experienced throughout the delivery of the project shall be compiled.

Lessons learned registers shall include the following as a minimum:

- The lesson learned.
- The applicable Gate Review Phase.
- The impact that the issue had in terms of time or cost.
- How the project team can apply these lessons to future projects.

Commercial lessons learned registered shall be submitted to the NTA within three months of Substantial Completion.

6. Band 3 (> €10m) Projects

Unless otherwise approved in writing by the NTA, the cost management requirements identified in this section shall be provided as a minimum.

In the event that these Cost Management Guidelines are considered unsuitable for specific projects, the Sponsoring Agency may submit alternative proposals to the NTA for acceptance. These alternative proposals must incorporate the principles of the Cost Management Guidelines at a minimum.

Where NTA are funding (or are part funding) a project which has a forecast total cost which is over €10 million, Band 3 cost management requirements apply and these are outlined in this section of the Guidelines.

A flowchart identifying the cost management deliverables at each Project Phase for Band 3 Projects is detailed in Figure 3 of the key cost management deliverables contained in Section 7 of these Guidelines.

6.1 General Cost Management

Financial Reporting (Phases 1 – 5)

During Phases 1 to 5 Financial Reports shall be prepared and provided to the Project Manager monthly. The Project Manager is responsible for reviewing Financial Reports and submitting these to the Sponsoring Agency and the Approving Authority.

The relevant template (008_B23_FR_CMG) shall be used to prepare Pre-construction Financial Reports.

Situation Notification (Phases 2 – 6)

The NTA shall be notified immediately as events occur or knowledge of the potential to occur arises. Events include those that:

- May impact the band the project should be assessed at.
- Could impact on whether the project is considered value for money.
- Could impact on the affordability of the project.
- Could delay project/phase completion or meeting a key date.

To notify the NTA, the Situation Notification Template (009_B23_SN_CMG) shall be submitted. A summary of Situation Notifications is also included as part of this template to ensure that consideration is given to the cumulative impact of all Situation Notifications.

Situation Notifications provide the project team with an opportunity to collaboratively manage risks and opportunities. The issue of Situation Notifications should be mutually beneficial, helping to ensure that informed decision making occurs at the earliest opportunity.

Project Management Support

All members of the project team shall support and facilitate project management throughout delivery of the project. From a cost management perspective, this includes but is not limited to, preparation of the business case, development of the procurement strategy, project processes, contract administration and project reporting.

Project Control Document

For a Band 3 project, a Project Control Document (PCD) shall be submitted at project phases 1 – 7 to obtain approval to proceed to the next project gateway.

To obtain approval at each gateway, part of the requirements in completing the document is to include actual or estimated costs for each of the project phases.

The costs included in each PCD shall be consistent with the cost estimates that have been prepared in accordance with these Guidelines.

6.2 Phase 1 – Scope and Purpose

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Grant Application Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency’s assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of “Reference Class Forecasting”, with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Grant Application Cost Estimate

As part of the preliminary work required to support the Project Grant Application Form, a Grant Application Cost Estimate shall be prepared using the relevant template (002_B123_GACE_CMG). This is an assessment of the total cost of the project.

The following shall be included as a minimum:

- A project description.
- Estimated project construction costs, preparation and administration costs (including project management and client costs), land costs (including provision for contingency) and traffic management related costs.
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- Confirmation of the source of cost data.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The above information will generate the grant application cost estimate section of the template (002_B123_GACE_CMG), against the following seven estimate parameters;



Accurate estimating for inclusion within the grant application form will be vital as this will form the basis for determining the funding required for the project and the appropriate project band.

Gateway approval must be obtained prior to proceeding to Phase 2.

Phase 1 Checklist

Phase 1 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 1 Checklist (O10_B23_CL_CMG).

6.3 Phase 2 – Concept Development and Option Selection

Option Comparison Cost Estimates

Option Comparison Cost Estimates shall be prepared and shall form a Section of the Option Selection Report prepared by the Project Manager, which will be used to support the identification of the Preferred Option.

Option Comparison Cost Estimates shall be prepared to facilitate the Option Selection process using the relevant template (O11_B23_OCCE_CMG), unless otherwise approved in writing by the NTA.

Substantiation of the information and data used to develop the Option Comparison Cost Estimate shall be provided whenever requested by the NTA.

Due consideration should be given to the characteristics of each option in determining add-on costs for preparation and administration, traffic management related costs, land and property and contingency. Where options display similar characteristics and complexity, add-on costs (or the percentages applied thereto) should be consistent.

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (O01_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Feasibility Working Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Risk Management

Support shall be provided to the project team in identifying key project risks associated with the Preferred Option, particularly in relation to commercial risks.

Feasibility Working Cost Estimate

Upon identification of the Preferred Option, a Feasibility Working Cost Estimate shall be prepared using the relevant template (O12_B23_FWCE_CMG). This is an assessment of the total cost of the project, which should be as detailed as possible taking account of the level of project information and the maturity of the design. The following shall be included as a minimum:

- A project description.
- Forecast project construction costs, preparation and administration costs (including project management and client costs), land costs (including provision for contingency) and traffic management related costs.
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).
- Confirmation of the source of cost data.
- A forecast expenditure profile of total project costs per quarter.
- A comparison between the Feasibility Working Cost Estimate and Option Comparison Cost Estimate prepared for the Preferred Option, prepared earlier in Phase 2.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.
- Details of known key project risks and their associated rank to be included.

The requirement to prepare a Feasibility Working Cost Estimate may be relaxed subject to prior written approval from the NTA. If the requirement to prepare a Feasibility Working Cost Estimate is relaxed, Sponsoring Agencies are required to provide a cost estimate range of total project costs unless the NTA has confirmed that there is no requirement to provide a cost estimate at Phase 2.

Phase 2 Checklist

Phase 2 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 2 Checklist (010_B23_CL_CMG).

6.4 Phase 3 – Preliminary Design

Application of Value Management and Value Engineering Processes

Value Management and Value Engineering processes shall be adopted throughout Phase 3, which will assist with defining, maximising and achieving value for money on each project.

In carrying out Value Management and Value Engineering processes, the following should be considered as a minimum:

- Whether the design achieves the optimum balance between functionality and cost.
- Whether the Specification can be changed without impacting the functional quality.
- Programme alteration to facilitate a more efficient works delivery.
- Possibility of enabling works or advanced works packages.

A Value Management report should be appended to the project cost estimate reports.

Risk Quantification

In establishing risk and contingency allowances, support shall be provided to the project team in identifying, assessing and mitigating project risks. A particular focus from a cost management perspective relates to commercial risks.

To assess project risk, a Quantitative Risk Assessment (QRA) shall be carried out using the relevant template (013_B23_QRA_CMG). This template will generate a risk value that shall be added to base costs in the Preliminary Cost Estimate.

The requirement to use the QRA template may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how risk shall be calculated.

Contingency Quantification

In assessing project contingency allowances, the contingency calculator (001_B123_CC_B123) shall be used to establish a percentage uplift for contingency in the Preliminary Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Preliminary Cost Estimate

A Preliminary Cost Estimate shall be prepared using the relevant template (014_B23_PCE_CMG). This estimate should reflect the total project cost based on the preliminary design and information assembled during the project phase.

The Preliminary Cost Estimate shall reflect the level of detail developed during Phase 3. As a minimum the Preliminary Cost Estimate should include:

- A project description.
- Forecast project construction costs broken down to relevant construction series headings, preparation and administration costs (including project management and client costs) and traffic management related costs.
- Risk value generated using the QRA template (013_B23_QRA_CMG).
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).
- Detailed land costs based on the land take requirements established during design development (including provision for contingency).
- Confirmation of the source of cost data.
- A comparison between the Preliminary Cost Estimate and the Feasibility Work Cost Estimate, prepared in Phase 2.

- A forecast expenditure profile of total project costs per quarter.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The Preliminary Cost Estimate Template (O14_B23_PCE_CMG) is intended to ensure consistency in the reporting of project costs, it is not intended to constrain the detail or methodology of cost estimating conducted by the project team. The Preliminary Cost Estimate shall be prepared commensurate to the design detail and information available, which may include the production of a priced Bill of Quantities.

The NTA reserves the right to request and receive substantiation of how the cost estimate has been produced and the information used to develop the cost estimate.

A Cost Estimate Report shall be prepared, and the Preliminary Cost Estimate shall be submitted as part of this report. The Cost Estimate Report Template (O15_B23_CER_CMG) details the minimum requirements.

Independent Peer Review of Preliminary Cost Estimate

A Peer Review of the Preliminary Cost Estimate and Cost Estimate Report may be undertaken by a Peer Review Panel if directed by the NTA. The Peer Review Panel members will be agreed with the NTA.

Any issues or queries raised by the Peer Review shall be logged in the Cost Estimate Report and the Cost Estimate shall be updated accordingly.

Prepare Whole Life Cost Analysis

In addition to preparing cost estimates based on capital costs only, Whole Life Cost Estimates may be prepared for the project if directed by the NTA. In addition to capital costs, Whole Life Cost Estimates will include forecasts of operating, maintenance and renewal costs for the period of appraisal (to be advised by the Project Manager).

Phase 3 Checklist

Phase 3 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 3 Checklist (O10_B23_CL_CMG).

6.5 Phase 4 – Statutory Processes

Application of Value Management and Value Engineering Processes

Value Management and Value Engineering processes shall be adopted throughout Phase 4, which will assist with defining, maximising and achieving value for money on each project.

In carrying out Value Management and Value Engineering processes, the following should be considered as a minimum:

- Whether the design achieves the optimum balance between functionality and cost.
- Whether the Specification can be changed without impacting the functional quality.
- Programme alteration to facilitate a more efficient works delivery.
- Possibility of enabling works or advanced works packages.

A Value Management report should be appended to the project cost estimate reports.

Risk Quantification

In establishing risk and contingency allowances, support shall be provided to the project team in identifying, assessing and mitigating project risks. A particular focus from a cost management perspective relates to commercial risks.

To assess project risk, a Quantitative Risk Assessment (QRA) shall be carried out using the template and supplemental guidance (O13_B23_QRA_CMG). This template will generate a risk value that shall be added to base costs in the Updated Preliminary Cost Estimate.

The requirement to use the QRA template may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how risk shall be calculated.

Contingency Quantification (Band 3 Projects)

In assessing project contingency allowances, the contingency calculator (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Preliminary Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance. If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Updated Preliminary Cost Estimate

The Preliminary Cost Estimate developed in Phase 3 shall be updated utilising the relevant template (016_B23_UPCE_CMG).

The estimate shall be updated to reflect the developing project maturity and information obtained throughout Phase 4.

The Updated Preliminary Cost Estimate shall include a comparison with the Preliminary Cost Estimate, prepared in Phase 3. This should include a narrative explaining the reason for any variances.

Preparation of the Updated Preliminary Cost Estimate is to be commensurate to the design and information available.

The NTA reserves the right to request and receive further substantiation of how the cost estimate has been produced and the information used to develop the cost estimate.

A Cost Estimate Report shall be prepared, and the Updated Preliminary Cost Estimate shall be submitted as part of this report. The Cost Estimate Report Template (015_B23_CER_CMG) details the minimum requirements.

Any additional budget requirements which were not foreseen or accounted for in the Preliminary Cost Estimate shall be approved in writing by the NTA prior to proceeding. Unapproved costs may be declined at a later stage.

Independent Peer Review of Updated Preliminary Cost Estimate

A Peer Review of the Updated Preliminary Cost Estimate and Cost Estimate Report may be undertaken by a Peer Review Panel if directed by the NTA. The Peer Review Panel members will be agreed with the NTA.

Any issues or queries raised by the Peer Review shall be logged in the Cost Estimate Report and the Cost Estimate shall be updated accordingly.

Phase 4 Checklist

Phase 4 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 4 Checklist (010_B23_CL_CMG).

6.6 Phase 5 – Detailed Design and Procurement

Preparation of Pre-Tender Cost Estimate

A Pre-Tender Cost Estimate shall be prepared using the relevant template (017_B23_PTCE_CMG). This estimate should reflect the total project cost based on the detailed design and information assembled up to the date of the Pre-Tender Cost Estimate.

The Pre-Tender Cost Estimate shall reflect the level of detail developed during Phase 5. As a minimum the Pre-Tender Cost Estimate should include:

- A project description.
- Forecast project construction costs broken down to relevant construction series headings, preparation and administration costs (including project management and client costs) and traffic management related costs.
- Risk value generated using the QRA template (013_B23_QRA_CMG).
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).
- Detailed land costs based on the land take requirements established during design development (including provision for contingency).
- Confirmation of the source of cost data.

- A comparison between the Pre-Tender Cost Estimate and the Updated Preliminary Cost Estimate, prepared in Phase 4. This shall include a narrative explaining the reason for any variances.
- A forecast expenditure profile of total project costs per quarter.
- A record of assumptions, inclusions and exclusions associated with the cost estimate.

The Pre-Tender Cost Estimate Template (017_B23_PTCE_CMG) is intended to ensure consistency in the reporting of project costs, it is not intended to constrain the detail or methodology of cost estimating conducted by the project team.

The Pre-Tender Cost Estimate shall be prepared commensurate to the design detail and information available, which may include the production of a priced Bill of Quantities.

The NTA reserves the right to request and receive substantiation of how the cost estimate has been produced and the information used to develop the cost estimate.

A Cost Estimate Report shall be prepared, and the Pre-Tender Cost Estimate shall be submitted as part of this report. The Cost Estimate Report Template (015_B23_CER_CMG) details the minimum requirements,.

Development of Commercial Tender Documents

The development of tender documents remains the responsibility of the Project Manager, however it may be a cost management requirement to prepare documents relating to the commercial section of the tender. This may include, but is not limited to, the development of Bills of Quantities, Activity Schedules or other Pricing Models.

The following documents, inter alia, should be considered:

- GN 1.4 Procurement & Contract Strategy for Public Works Contracts;
- GN 1.5 Public Works Contract; and
- GN 2.3 Procurement Process for Works Contractors.

The format of tender documents shall comply with the DoF CWMF (Department of Finance, Capital Works Management Framework) Guidance Note, and such compliance is to be confirmed to the NTA.

Commercial Assessment of Tender Returns

Following receipt of tenders, assessment of the commercial sections of tender returns shall comprise:

- Summary comparison of each of the returned tenders.
- Identification of any ambiguities or inconsistencies within the returned tenders.
- Identification of any tender prices that appear to be abnormally low.
- Identification and drafting of requests for clarification.
- Findings shall be submitted to the Project Manager who is responsible for preparing the Tender Report.

Risk Quantification

In establishing risk and contingency allowances, support shall be provided to the project team in identifying, assessing and mitigating project risks. A particular focus from a cost management perspective relates to commercial risks.

To assess project risk, a Quantitative Risk Assessment (QRA) shall be carried out using the template and supplemental guidance (O13_B23_QRA_CMG). This template will generate a risk value to be added to base costs in the Total Project Cost.

The requirement to use the QRA template may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how risk shall be calculated.

Contingency Quantification

In assessing project contingency allowances the contingency calculator (001_B123_CC_CMG) shall be used to establish a percentage uplift for contingency in the Preliminary Cost Estimate. The established contingency percentage shall be applied to the total project costs including the risk output, but excluding land. The Sponsoring Agency's assessment of land should make provision for contingency allowances.

The contingency calculator provides a methodical, consistent and recognised approach in establishing an appropriate contingency allowance. The calculator includes a forecasting methodology based on principles of "Reference Class Forecasting", with reference to previous project performance.

If a project demonstrates unique characteristics or a unique set of circumstances exists (e.g. including but not limited to project scale, value or complexity), the requirement to use the contingency calculator may be relaxed subject to the prior written approval by the Director of Transport Planning, Investment and Taxi Regulation at the NTA. If a departure from the Cost Management Guidelines is requested, the Sponsoring Agency shall be required to justify its approach by providing alternative proposals regarding how contingency shall be calculated.

Total Project Cost

A Total Project Cost shall be prepared using the relevant template (017_B23_TPCE_CMG). The Total Project Cost shall take account of the Contract Sums for the main contracts and any changes to the other costs as necessary.

The Total Project Cost shall include:

- A project description.
- Contract sums for main contracts.
- Preparation and administration cost allowances (including project management and client costs).
- Traffic management related cost allowances.
- Land and property costs (including provision for contingency).
- Risk value generated using the QRA template (013_B23_QRA_CMG).
- Contingency based on percentage uplift generated from the Contingency Calculator (001_B123_CC_CMG).
- An allowance for inflation based on a percentage uplift or a lump sum assessment generated using a cash flow forecast and application of industry recognised indices (method of assessment to be determined by the Sponsoring Agency and provided to the NTA upon request).
- A comparison between the Total Project Cost and the Pre-Tender Cost Estimate, prepared earlier in Phase 5. This shall include a narrative explaining the reason for any variances.
- A forecast expenditure profile of total project costs per quarter.

A Cost Estimate Report shall be prepared, and the Total Project Cost shall be submitted as part of this report. The Cost Estimate Report Template (015_B23_CER_CMG) details the minimum requirements.

Any additional budget requirements which were not foreseen or accounted for in the Updated Preliminary Cost Estimate completed in Phase 4 shall be approved by the NTA prior to proceeding to Construction, Phase 6.

Phase 5 Checklist

Phase 5 shall be concluded by completing and submitting to the NTA for Phase sign-off the Phase 5 Checklist (010_B23_CL_CMG).

6.7 Phase 6 – Construction and Implementation

Monthly Financial Reporting

To ensure that the NTA is fully informed of current and potential future project costs, a Construction Phase Financial Dashboard shall be prepared and submitted to the NTA monthly. The Construction Phase Financial Dashboard template (019_B23_FD_CMG) shall be utilised.

The Sponsoring Agency are also required to prepare Financial Reports that are to be made available to NTA upon request. The Financial Report Template (020_B23_FR_CMG) shall be utilised.

Financial Reports shall include as a minimum:

- Detailed analysis of cumulative amounts certified.
- Updated Contract Sum.
- Value of agreed and pending and disputed Change Orders, Compensation and Delay Events and Employer Claims.
- Value of other potential liabilities.
- Forecast final account value.
- Key dates.
- Updated expenditure profile.

Effective financial reporting will provide the NTA with the opportunity to budget effectively and to implement mitigation measures where projects have or could become unaffordable.

Monthly Assessment of Payment Claim Notice

Payment claim notices (interim applications) from the Contractor shall be received and the amount due determined in accordance with the specific conditions of contract. A recommendation for payment shall be submitted to the Project Manager or such other appropriate designated person within the Sponsoring Agency.

It is the responsibility of the Sponsoring Agency to ensure that payments are made within the period specified in the contract following receipt of the recommendation.

Advice and Assessment of Contract Claims

Advice and assessment of entitlement (including value) of Contract Claims shall be provided in relation to both Change Orders and Claims for Compensation and Delay Events.

Change Orders

The Change Order process comprises requests for written approval from the NTA for Change Orders exceeding €50,000.

Change Orders with values that do not require written approval from NTA shall be notified in the next Project Report. Failure to notify of these Change Orders in the Project Report will require requests to be made for written approval from the NTA irrespective of value.

When the cumulative value of Change Orders and Claims for Compensation and Delay Events exceed a value advised by NTA, Change Order Requests shall be submitted for all future Change Orders irrespective of the value.

A Justification Report shall be prepared to support all Change Order Requests. It is a cost management requirement to contribute to the commercial parts of the Justification Report.

A register of all issued Change Orders shall be maintained. This register shall be included in the Financial Reports and Progress Reports which are to be issued monthly to the NTA.

All parties must comply with the conditions of the main contract in respect to the assessment of claims and timescales for reply.

Claims for Compensation and Delay Events

Assist the Employer's Representative in acknowledging and processing claims for Compensation and Delay Events, in addition to other contractual claims. This process shall include assessing validity and the value of the claim, as well as advising on how the Employer's Representative should respond to the claim. The NTA shall be advised of the potential liabilities associated with these claims.

It is the responsibility of the Sponsoring Agency to notify the NTA at the earliest opportunity of any potential claims liability which may impact on scope, quality, cost or completion date of the project. Contribution to and facilitation of this process is to be provided by preparing requisite information and ensuring that Sponsoring Agencies are notified in the first instance.

Contemporaneous records shall be maintained to ensure that the project team can properly assess and make an appropriate determination on all claims.

All parties must comply with the conditions of the main contract in respect of the assessment of claims and timescales for reply.

Risk Management

Risk management shall continue to be undertaken during the construction phase of each project. This includes continuing to support the project team in identifying continuing, new and closed risks.

Risk shall continue to be an item on the agenda at each Project Team meeting. This should help the entire project team to work in a collaborative manner to mitigate the occurrence and impact of risk should it be realised.

Contract Final Accounts

Facilitate and assist in the preparation and agreement of final accounts. In addition to closing out all issues relating to the contract sum, payments, and contract claims, this may include engaging with experts/legal advisors should there be a referral to a dispute resolution process and obtaining prior approval from the NTA for reimbursement of cost overruns where the construction / implementation contract(s) exceed the Total Project Cost.

Final Account Report

A Final Account Report shall be prepared using the relevant template (O21_B23_FAR_CMG). The Final Account Report shall include the following as a minimum:

- The outturn costs allocated to their specific cost heads.
- An expenditure profile comparison with the Total Project Cost.
- A cost and programme comparison with the Total Project Cost.
- Substantiation for variances exceeding 10%.

6.8 Phase 7 – Close-out and Review

Capture Outturn Cost Information

Tender and outturn cost data shall be captured and submitted in a format that is acceptable to NTA.

Effective capture of outturn cost information will ensure that NTA and Sponsoring Agencies have access to reliable raw cost data to inform and prepare future cost estimates.

Compile and Submit Commercial Lessons Learned

A commercial lessons learned workshop shall be conducted with project team members. Following this workshop, a register of commercial lessons learned experienced throughout the delivery of the project shall be compiled.

Lessons learned registers shall include the following as a minimum:

- The lesson learned.
- The applicable Gate Review Phase.
- The impact that the issue had in terms of time or cost.
- How the project team can apply these lessons to future projects.

Commercial lessons learned registered shall be submitted to the NTA within three months of Substantial Completion.

7. Key Cost Management Deliverables

Band 1 (€0-0.5 Million) Project Deliverables

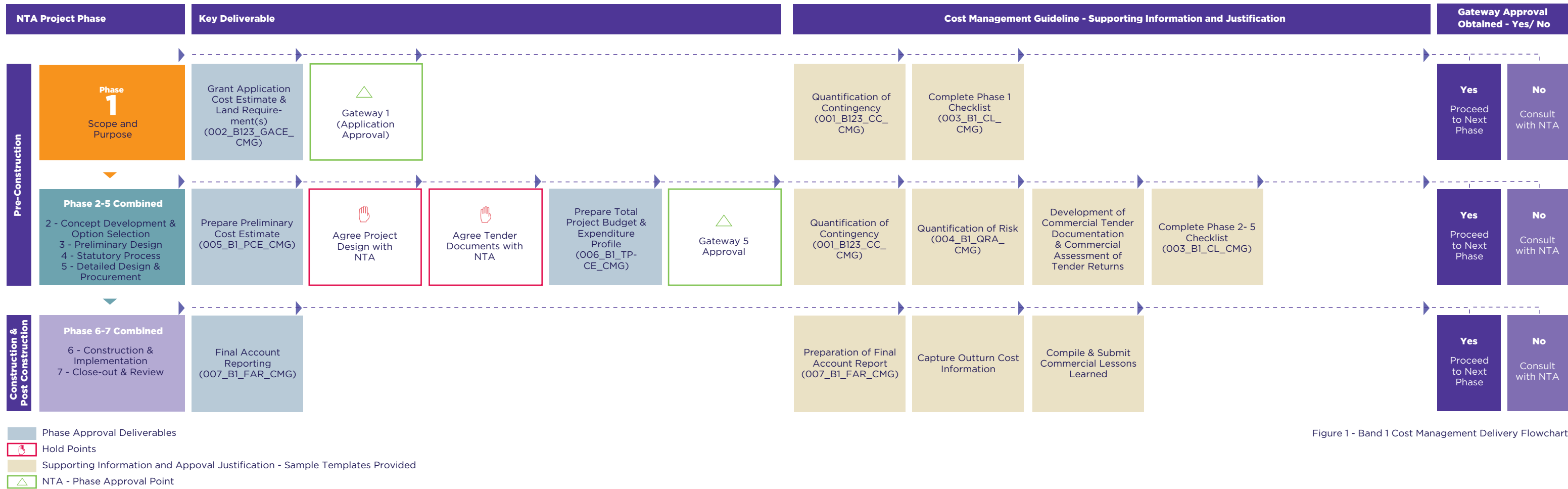
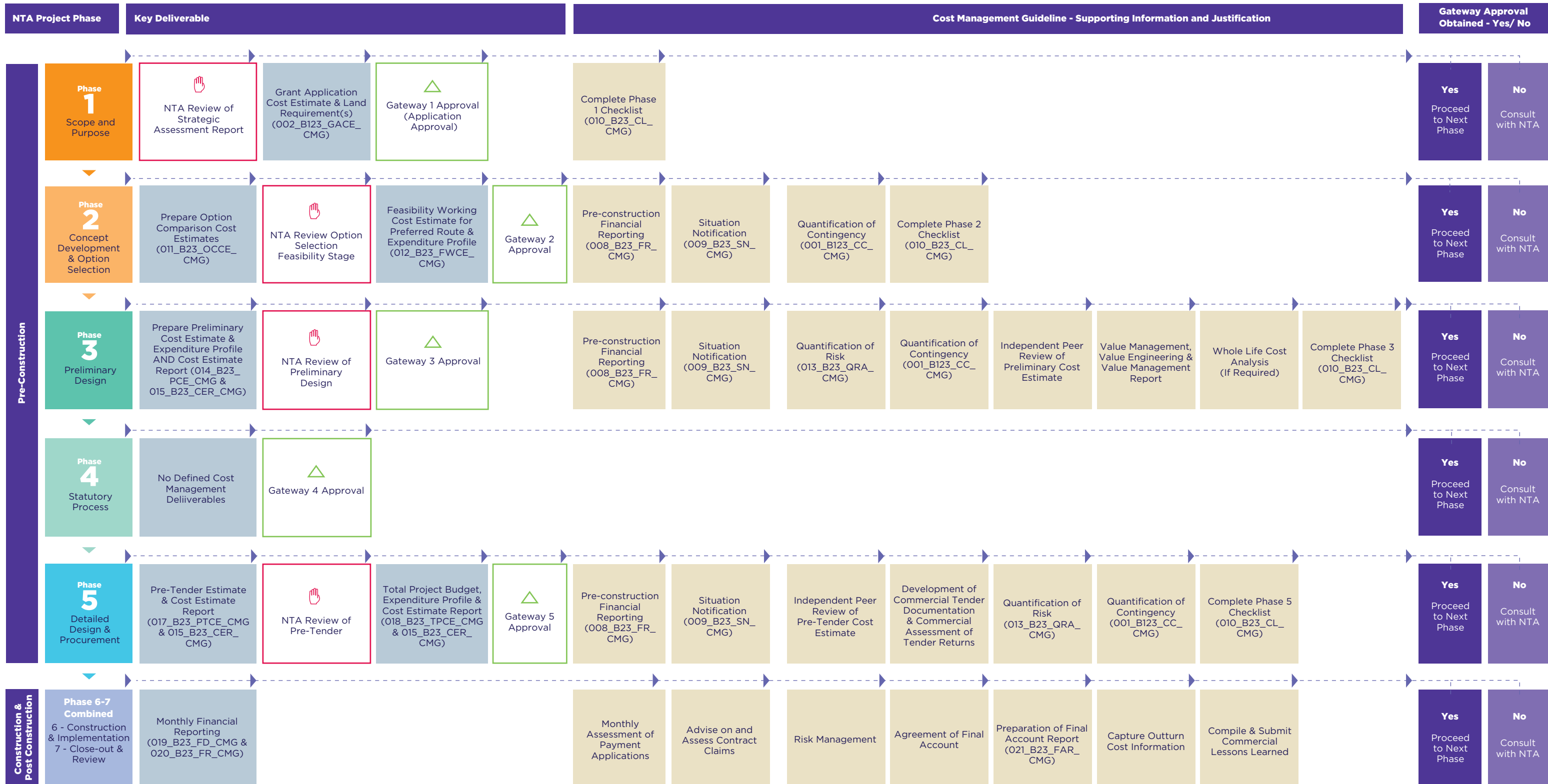


Figure 1 - Band 1 Cost Management Delivery Flowchart

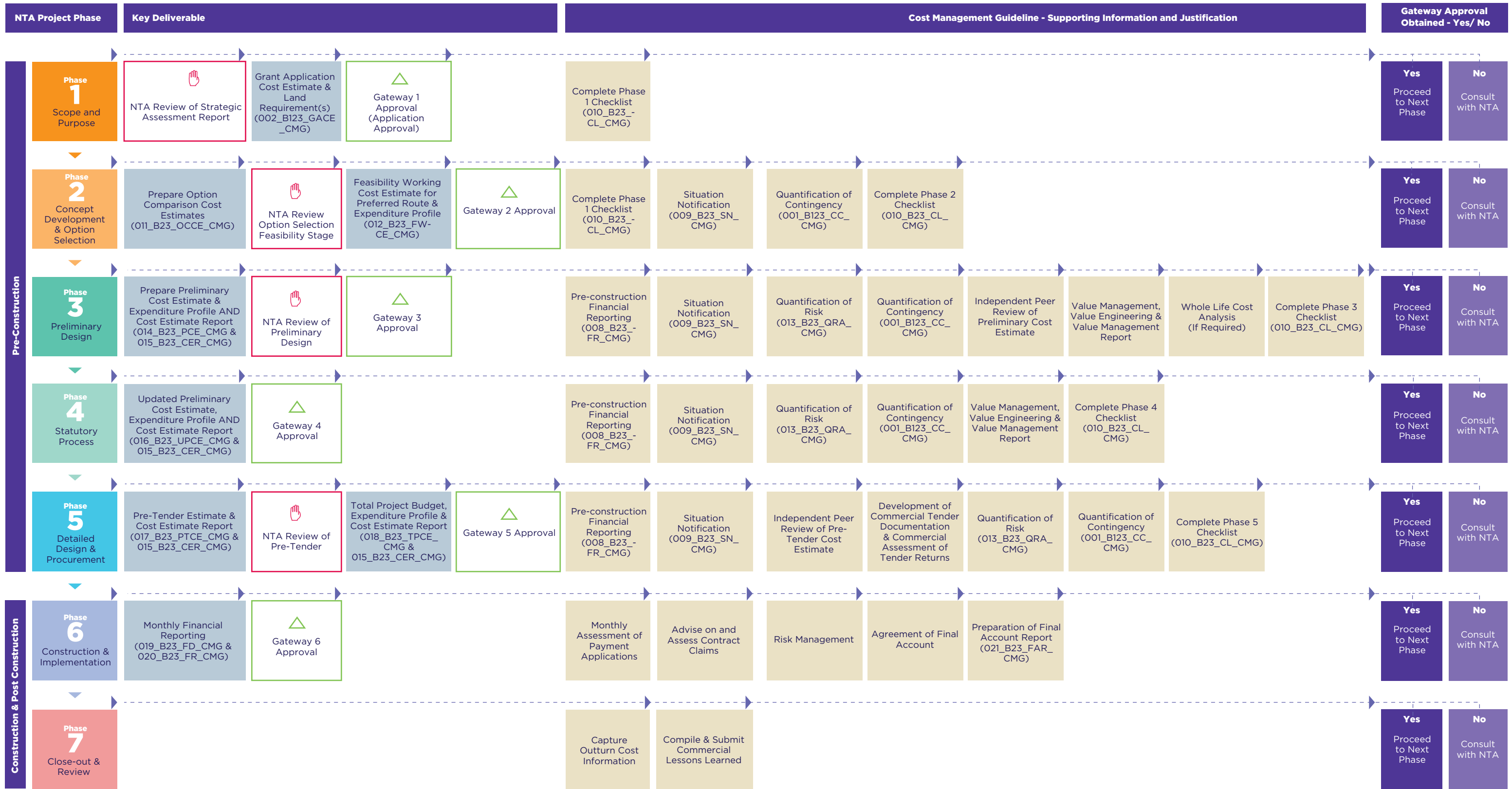
Band 2 (€0.5-€10 Million) Project Deliverables



- Phase Approval Deliverables
- Hold Points
- Supporting Information and Approval Justification - Sample Templates Provided
- NTA - Phase Approval Point

Figure 2 - Band 2 Cost Management Delivery Flowchart

Band 3 (€10 Million+) Project Deliverables



- Phase Approval Deliverables
- Hold Points
- Supporting Information and Approval Justification - Sample Templates Provided
- NTA - Phase Approval Point

Figure 3 - Band 3 Cost Management Delivery Flowchart

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