

Project Controls

Master Specification

PC-PL5 Cost Estimation

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1	Initial Issue (formerly P96)	27/06/19
2	Requirements for duplicate and Level 2 estimates	15/08/19
3	General review and update of document	August 2021
4	Updated to clarify allocation and review requirements	November 2022
5	Minor edits resulting from review	July 2023

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PC-PL5 Cost Estimation

1 General

Scope

- 1.1 This Part sets out the requirements for Cost Estimation and associated documentation / deliverables required to be provided by the Contractor / Civil Estimator.
- 1.2 Cost estimation procured in accordance with this Specification is typically undertaken during the Proving and Pre-delivery phase of a project and as part of, or in support of, a Transport Planning Study. On occasion the Department may also seek to procure more detailed estimates which result from a project proceeding through to the subsequent delivery phase. In this event the requirements of this Specification also apply.

References

- 1.3 In addition to the requirements of this Part, and where required by the Contract, Cost Estimation will consider the following Parts relating to Planning Studies:
 - a) Master Specification Part PC-PL1 “Framework for Planning Studies”.
 - b) Master Specification Part PC-PL2 “Planning Investigations”.
 - c) Master Specification Part PC-PL3 “Concept Design Development”.
 - d) Master Specification Part PC-PL4 “Constructability Assessments”.

2 Estimator

- 2.1 All estimates are to be prepared by an organisation (the Estimator) listed as a supplier to the Department for the provision of Estimating Services within the Preferred Supply Arrangement Estimating, Scheduling, and Constructability (PSAESC).
- 2.2 The Estimator may only provide services for appropriate and/or related Service Categories which they have been appointed to the PSAESC and utilise only those personnel from their organisation that have been accepted for use under this arrangement. Individual staff used to perform the relevant tasks within each engagement are required to provide appropriate experience in the development of cost estimates incorporating project programs, cash flows, staging diagrams and risk assessments for civil infrastructure projects of a similar type, magnitude, and complexity as applicable to the current engagement.

3 Requirements for Cost Estimation

- 3.1 Unless specified by the Principal in the Contract Documents, the Estimator shall undertake all necessary estimating and associated activities that it deems necessary to deliver on the stated objectives and outcomes to a level commensurate with the size and complexity of the Works.
- 3.2 An overview of the level of the estimate, nominal design percentage of information to be used as the basis of estimates and intended application of estimates is as detailed in Table PC-PL5 3-1.

Table PC-PL5 3-1 Level of Cost Estimation

Estimate Level	Nominal Design %	Estimate developed for
Level 2	Less than 5% (Initial Concept)	Long list of options in the proving phase of a Planning Study
Level 3	5 to 15% (Shortlisted Concept)	Approved shortlist of Concept Designs in the proving phase of a Planning Study
Level 4	15 to 30% (Reference Design)	Refined version of preferred Concept Design in the proving phase of a Planning Study
Level 5	70% to IFA with estimate revisions as the design progresses	Project delivery

Only the levels of estimate levels that are detailed within this table are to be sourced using this Specification. Due to their specific nature all other estimate levels are to be sourced directly via the Principal Cost Manager (Estimating and Programming) or their delegate.

4 Estimating Methodology

- 4.1 The Estimator shall ensure that all estimates are prepared in accordance with the current version of the Department's EST600 Estimating Manual, Transport Infrastructure Projects, found at: https://dit.sa.gov.au/data/assets/pdf_file/0003/173532/Estimating_Manual.pdf.
- 4.2 Prior to the commencement of estimates an Estimating Work Order is to be prepared by the Designer/Planner in conjunction with the Department's client (typically the Project Manager), utilising the current version of the Department's EST600-4.1 Estimating Work Order, Estimates Procured via Designers/Planners. The development of the Estimating Work Order is to be initiated by the Designer/Planner once project details have been developed to the point at which they are commensurate with the required level of estimate.
- 4.3 In developing the Estimating work order, once otherwise completed, the Department's client is required to issue a copy to the Contract Manager for noting, along with issuing to the Principal Cost Manager (Estimating and Programming) or their delegate for saving to KNet along with reviewing for acceptance. Upon acceptance of the Estimating Work Order an estimate number will be assigned and recorded within the work order file name and file prior to being returned to the Department's client and Contract Manager for provision to the Designer/Planner and in-turn their Estimator.
- 4.4 The provision of the completed Estimating Work Order from the Designer/Planner to their Estimator shall constitute a **Hold Point** which is to be released by the Department's client or Contract Manager.
- 4.5 A new Estimating Work Order is required to be prepared at the commencement of each estimate and for subsequent levels of the same estimate/project. Work orders are also to be modified where additional project options or scope details result during the design/planning process, with revised copies provided to the Principal Cost Manager (Estimating and Programming) or their delegate on each occasion.
- 4.6 Estimates will be presented using the "EST600-2 – Standard Estimating Spreadsheet, Levels 2, 3, 4, 5 & 5B by Estimating Consultants" template or where delivery via an alliance is anticipated the "EST600-2A – Standard Estimating Spreadsheet, Levels 2, 3, 4, 5 & 5B by Estimating Consultants (Alliance)" template. All applicable project options are to be presented in a single estimate file.
- 4.7 Where the estimated project cost is anticipated to be in excess of \$25 million (P90, real \$) a duplicate estimate OR concurrence review may be required. If required, the need for either shall be confirmed by the Department's client in the Contract Documents and the Estimating Work Order. The reconciliation of duplicate estimate values shall only occur with the involvement of and where approved by the Principal. Where concurrence reviews are utilised specific reports detailing the processes used and resulting outcomes are to be provided to the Principal as part of the deliverables.
- 4.8 The Estimator shall complete all tabs within EST600-2 (or EST600-2A where applicable), including transposing all relevant details from the Estimating Work Order to the scope tab of the estimate file and utilising additional summary and calculation tabs as necessary to accommodate all applicable project options.
- 4.9 The Estimator shall ensure that all relevant scope items are included within the estimate and not "excluded" where they are likely to form part of the project scope (e.g. costs associated with land acquisition, service relocation, contaminated soils etc.).
- 4.10 Where viable opportunities to use low emission materials and/or recycled materials in place of traditional materials have been identified in accordance with PC-PL2 "Planning Investigations", estimates will be based on the assumption that these opportunities will be implemented.
- 4.11 Where a Green Infrastructure Assessment has been undertaken in accordance with PC-PL2 "Planning Investigations", estimates will be inclusive of the planned extent and type of green infrastructure shown.
- 4.12 Estimates are required to be prepared inclusive of constructability considerations as determined within PC-PL4 "Constructability Assessment".
- 4.13 Estimates are required to incorporate assessment of risk items using probabilistic risk methods to determine P50 and P90 estimate values.
- 4.14 With the exception of long list options / Level 2 estimates, all estimates will also incorporate the development of project program(s), cash flow(s), staging diagrams, and risk assessment tables, which clearly link to the derived P50 and P90 values. For Level 2 estimates it is anticipated that simplified / generic risk assessment tables will be utilised when deriving P50 and P90 values.
- 4.15 The Estimator shall advise on opportunities to provide improved value for money and best for project outcomes.

- 4.16 Estimates will incorporate completion of 'Estimator' and 'Estimate Reality Checker' reviews, with the relevant section of the Estimate Cover Sheet within EST600-2 (or EST600-2A where applicable), to be marked accordingly upon completion of these reviews.
- 4.17 A general review of the estimate is to be undertaken by an appropriate representative of the design/planning consultant to ensure that the applicable scope has been adequately accounted for and that the estimate is compliant with the Department's estimating requirements, including those detailed within this Specification. Upon completion of this review, the 'Additional Reviewer' section of the Estimate Cover Sheet within EST600-2 (or EST600-2A where applicable) is to be marked accordingly. These reviews are required prior to submission of the estimate file to the Department's Client/Contract Manager.
- 4.18 Once issued to the Department's Contract Manager, they are required to issue the estimate file, all associated estimating deliverables, and KNet links to and/or copies of the drawings used as the basis of the estimate, to both the Department's client for noting and the Principal Cost Manager (Estimating & Programming) or their delegate, who will save the estimate file within the Department's record management system (KNet) prior to reviewing and where accepted to do so, lodge within the Department's estimating database. Subsequent links to the relevant KNet files will be provided to both the Department's client and Contract Manager along with any associated review comments which may require further action by the Department's client and/or Contract Manager.

5 Estimating Deliverables

Reports

- 5.1 A single Microsoft Excel version of the options estimate file in the "EST600-2 – Standard Estimating Spreadsheet, Levels 2, 3, 4, 5 & 5B" (or EST600-2A where applicable) format inclusive of the following tabs, each of which are to be fully completed:
 - a) Cover Sheet;
 - b) Scope, Risk & Methodology;
 - c) Summary Option(s);
 - d) Calculation Option(s); and
 - e) Inherent & Contingent Risk Option(s).
- 5.2 Summary report of information and supporting documentation (as set out within the Estimating Work Order) which may include, but is not limited to:
 - a) Project schedule/program(s);
 - b) Project cash flow(s);
 - c) Staging diagram(s);
 - d) Risk register(s) and information to support the basis of risk calculations;
 - e) Details of opportunities to improve value for money and best for project outcomes; and
 - f) Commentary on the constructability methodology (and additional information as required to support the estimate).
- 5.3 The Designer/Planner is required to provide all estimating deliverables (estimate file in Microsoft Excel format and where requested a summary report which is anticipated to be in PDF format) to the Contract Manager who in-turn is to provide these files in the same format to the Department's client for noting and to the Principal Cost Manager (Estimating and Programming) or their delegate to save and record within the Department's record management system (KNet).
- 5.4 In issuing the estimate files, the Department's Contract Manager is required to provide KNet references to all relevant drawings and associated information which has been used as the basis of estimates which has been issued to the Department by the Designer/Planner.
- 5.5 The Principal Cost Manager (Estimating and Programming) or their delegate will review the estimate considerate of the associated deliverables. Early estimates (typically those at Levels 2 and 3) will be reviewed for completeness and where appropriate to do so will be marked as 'Endorsed to Lodge'. More detailed estimates (typically those at Levels 4 and 5) may be subject to more detailed reviews.
- 5.6 Upon completion of the review and where accepted by Principal Cost Manager (Estimating and Programming) or their delegate, the cover sheet of the estimate file will be marked accordingly, and the Department's client and Contract Manager advised and issued with KNet number reference to

where the estimate files has been saved. The Department's client will then also review and upon acceptance of the estimate also mark the cover sheet tab accordingly.

- 5.7 Completion of the reviews detailed in Clauses 5.5 and 5.6 shall constitute a **Hold Point** which is to be released by the Department's client and/or Contract Manager.

Records

- 5.8 The Estimator shall retain all information used to allow for future revision, analysis, or audits. This includes, but is not limited to:
- a) First principles estimating calculations within proprietary estimating software; and
 - b) Input data associated with risk calculations (in order to allow risk assessment calculations to be re-run / future validation of outputs).

6 Hold Points

- 6.1 The following is a summary of Hold Points referenced in this Part:

Document Ref.	Hold Point	Response Time
4.4	Provision of the completed Estimating Work Order from the Designer/Planner to the Estimator incorporating the allocation of an estimate number.	5 Working days
5.7	Provision of estimating deliverables resulting in the acceptance and lodging of the estimate within the Department's estimating database along with completion of review signoffs on the cover sheet tab of the estimate file.	10 Working days