

Project Controls

Master Specification

PC-PL2 Planning Investigations

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PC-PL2 Planning Investigations

1 General

Scope

1.1 This Part defines Planning Investigations undertaken in support of a Planning Study.

Definitions

1.2 The following definitions apply to terms used in this Part:

Term	Definition
Planning Study Investigations (Investigations)	Investigations undertaken by the Principal and / or Contractor to ensure the Planning Study task objectives are met.

References

1.3 The framework for undertaking a Planning Study is documented in the following:

- a) PC-PL1 Framework for Planning Studies.

2 Planning Investigations

- 2.1 The purpose of the Planning Investigations (Investigations) is to support delivery of the Planning Study and its objectives in accordance with PC-PL1 "Framework for Planning Studies".
- 2.2 Specifically, the Investigations will inform an understanding of the constraints, risks and drivers associated with the proposed project as inputs to development of the Outline or Full Planning Study and Business Case Reports.
- 2.3 The Contractor shall review all information provided by the Principal (including previous Planning Studies and Concept Planning Reports) as part of the Investigations to assess its currency, adequacy and appropriateness.
- 2.4 Based on its review of the information provided by the Principal, the Contractor shall determine what additional Investigations are required and, unless specified by the Principal in the Contract Documents, shall undertake the Investigations to deliver on the objectives and outcomes of the Proving Phase of the Planning Study.
- 2.5 The Investigations will be to a level of detail commensurate with the size and complexity of the project and the preliminary nature of the Proving Phase.
- 2.6 Supplementary Investigations may be undertaken to deliver on the Planning Study objectives or as a recommendation of Proving Phase Investigations. If not already being undertaken by the Principal or Contractor, the Contractor may be required to undertake these Investigations.
- 2.7 Where undertaken, Investigations will be in accordance with this Part.

3 Documentation

Investigation Reports

- 3.1 The Contractor shall summarise Investigations undertaken and document the findings, a gap analysis and recommendations for further investigations (if any) in Investigations Report(s).
- 3.2 Discrete Investigation Reports (including the Environmental Impact Assessment Report) and information created in the course of the Planning Investigations may be summarised in, and attached to, the Planning Study Report.

- 3.3 If required by the Contract Documents, the Investigation Report(s) will be of a factual nature to facilitate disclosure to tenderers of subsequent design and / or construction head contracts.
- 3.4 As per PC-PL1 "Framework for Planning Studies", the Investigation Report(s) are Proving Phase deliverables. If additional Investigations are required for the Pre-delivery Phase, the Investigation Reports will be updated at that time.

4 Engineering and environmental investigations

Engineering survey

- 4.1 The Contractor shall procure, manage and collate an Engineering Survey in accordance with PC-SI5 "Engineering Surveys".

Utility Services

- 4.2 The Contractor shall collate and undertake a review of Utility Services that may be impacted by the construction of the Project.
- 4.3 The Contractor's review shall consider the requirements of PC-US1 "Utility Services".
- 4.4 The Contractor shall consider and document the impacts of the project on Utility Services including, but not limited to, the following:
 - a) Utility Services that require relocation or adjustment;
 - b) feasibility of re-locating Utility Services; and
 - c) cost, time and community impact to relocate or adjust Utility Services.
- 4.5 Where a major (or potentially major) Utility Service is identified that may result in a major issue for the project, the Contractor shall:
 - a) develop a concept services re-location to obtain a better understanding of the cost and impact of the service;
 - b) consult with representatives from the Transport Project Delivery section within DPTI who have previous experience with service relocations or adjustment; and
 - c) in coordination with the Principal, consult with the Service Authority to obtain a better understanding of the cost and impact to the project.

Climate change

- 4.6 The Contractor shall undertake and document a climate change risk assessment, in accordance with the DPTI Climate Change Risk Assessment Guideline. Appropriate adaptation options shall be identified for extreme and high level risks.
- 4.7 The risk assessment must be completed sufficiently early to allow the outcomes to help inform selection and assessment of options.

Heritage and Environment Impact Assessment

- 4.8 The Contractor shall undertake Heritage Assessment and Environment Impact Assessment (EIA) including all relevant and required environmental and heritage disciplines.
- 4.9 The EIA will include the identification of environmental, heritage or related planning approvals likely to be triggered by the proposed project.
- 4.10 In undertaking the EIA, the Contractor shall also consider the requirements of the following:
 - a) DPTI Environmental Instruction EI21.1 on Environmental Approval Procedures.

Site contamination

- 4.11 The Contractor shall undertake a site contamination investigation. As a minimum, this will include a Preliminary Site Investigation (PSI).
- 4.12 In undertaking contamination investigations, the Contractor shall undertake any and all investigation in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (ASC NEPM).

Geotechnical and hydrogeological investigation

- 4.13 The Contractor shall undertake a geotechnical and hydrogeological investigation to assess potential impacts on constructability but also (for example) the impact of the project on the groundwater flow regime.
- 4.14 As a minimum, it will be a desktop geotechnical assessment including review of any Principal supplied reports, relevant publically available information (i.e. expected ground conditions) and a site inspection.

Stormwater and hydrology

- 4.15 The Contractor shall undertake a stormwater and hydrology investigation to assess the impact on the project as well as the project's impact on the local hydrological regime.
- 4.16 The investigation will include predicted flooding characteristics of the project having regard to projected increased intensity of extreme rainfall and storm events as a result of climate change.
- 4.17 As a minimum, it will include review of any Principal supplied reports, relevant publically available information and consultation with the Principal's Stormwater Unit.

5 Social, community and stakeholder investigations

Approach to Investigations

- 5.1 The Contractor shall undertake social, community and stakeholder Investigations in order that their interests, issues and concerns may be considered as inputs to the Planning Study.
- 5.2 The Contractor shall adopt a collaborative approach with the Principal in undertaking its Investigations to ensure that its approach aligns and integrates with the Principal's broader engagement and communication strategy.
- 5.3 The Principal shall oversight the Contractor's Investigations and provide approval on communications through release of Hold Points as required.
- 5.4 The Contractor shall not undertake any activity which could unnecessarily lead to community or stakeholders developing unrealistic expectations of the project or Planning Study.
- 5.5 The Contractor shall undertake Investigations in a manner that endeavours to develop and maintain a positive relationship between the Principal and the community and stakeholders.
- 5.6 Investigation and engagement methods and processes will be accessible to the targeted community and stakeholders to enable them to provide input and appropriately participate in the Study.

Engagement Plan and Reporting

- 5.7 At the commencement of the Investigations the Contractor shall prepare a Planning Study Community and Stakeholder Engagement Plan (Engagement Plan) for foreseeable and relevant engagements with the community and stakeholders associated with the Planning Study. This will be implemented with oversight and appropriate approval of the Principal.
- 5.8 Where known at the time of preparation, the Engagement Plan will document the following:
 - a) the proposed method and manner of assessment and engagement;

- b) the intention (if any) to release information and not make any commitment on behalf of Principal unless prior approval to do so has been given;
 - c) a schedule of implementation and reporting that references the Study;
 - d) the commitment to providing written prior notice of the time and date of meetings to the Principal so that a representative of the Principal may attend the meeting if necessary;
 - e) the process for actively managing and responding to community input and how this will be fed in to the Study and used to drive Study outcomes; and
 - f) the process for approval by the Principal of additional unforeseen engagements later in the Planning Study.
- 5.9 Approval of the Engagement Plan and commencement of any assessment and engagement shall constitute a **Hold Point**.
- 5.10 On an ongoing basis, the Contractor shall maintain a record of all outputs of the Investigations and associated engagements and provide information to the Principal within 5 working days for inclusion in the Principal's consultation management system.
- 5.11 Following completion of the Study, the Contractor shall prepare a technical report (to append the Planning Study Report) that documents the following:
- a) the interests, issues, concerns and outputs identified by the Investigations;
 - b) how these were addressed by the Study outcomes; and
 - c) if not addressed by the Study outcomes, justification for the decision.

Socio-economic assessment

- 5.12 The Contractor shall undertake a socio-economic assessment of the proposed project area.
- 5.13 The nature and extent of the assessment shall be determined by the Contractor in discussion with the Principal but as a minimum will include an assessment and description of the demographic, economic, social and technological profile and trends in the proposed project area.

Community consultation

- 5.14 Unless specified by the Contract Documents, the Contractor shall undertake consultation with the community, including the Aboriginal community, regarding the proposed project as an input to the Planning Study.
- 5.15 The method and manner of this assessment will be documented in the Engagement Plan.

Stakeholder engagement

- 5.16 In addition to other requirements of this Part, the Contractor shall coordinate and consult with stakeholders internal to the Principal in order to obtain a holistic understanding of the proposed project as inputs to the Planning Study. Stakeholders will include, and are not limited to, community groups, industry bodies, businesses and providers of essential services.
- 5.17 In particular, and if required in order to deliver on the project objectives, the Contractor shall consult with the local authority to obtain a holistic understanding of the project site, issues, and the local authority's maintenance requirements, including:
- a) drainage, hydrology and flooding;
 - b) changes to access of Council roadways, footpaths and shared paths;
 - c) landscaping requirements; and
 - d) proposed maintenance and responsibility interface.
- 5.18 Where Utility Services have been identified that will (or potentially will) impact the project, the Contractor shall consult with the service authority to obtain a better understanding of the cost and impact of the Utility Services to the project.

- 5.19 The method and manner of the engagement with stakeholders external to the Principal (if any) will be documented in the Engagement Plan.

6 Land use, planning and approvals

Land ownership and acquisition

- 6.1 The Contractor shall assess property ownership in relation to property viability, impact on livelihood and effect on property values.
- 6.2 The Contractor shall identify any material land acquisition requirements to complete the project.
- 6.3 The land acquisition requirements shall include temporary land requirements for (for example) site offices, laydown, services re-location, stormwater management or temporary traffic management.
- 6.4 In the event that engagement with landowners is required to undertake the assessment, the Contractor will document this in the Engagement Plan.
- 6.5 Approval of the Engagement Plan and commencement of the engagement shall constitute a **Hold Point**.

Land use, business and industry

- 6.6 The Contractor shall undertake an investigation of the land use, businesses and industry in the vicinity of the proposed project area in regarding, but not necessarily limited to, the following:
- a) the movement of employees and freight;
 - b) land acquisition requirements;
 - c) construction phase impacts; and
 - d) small business impacts, in general accordance with the Principal's Small Business Policy.
- 6.7 In the event that engagement with business owners is required to undertake the assessment, the Contractor will document this in the Engagement Plan.

Land use planning

- 6.8 The Contractor shall assess the proposed project relative to the applicable zoning provisions and strategic land use and infrastructure plans, such as the 30 Year Plan for Greater Adelaide.
- 6.9 The Contractor shall assess the proposed project relative to its potential contribution to local, regional and State planning strategies and objectives (if any). This assessment must consider the range of credible options for land use change in light of the infrastructure asset options being considered, and the potential benefits / dis-benefits.

Approvals

- 6.10 The Contractor shall identify local and State approvals that may be required.

7 Analysis

Transport Modelling

- 7.1 The Contractor shall undertake modelling of rail, bus, pedestrian or cycling movements in accordance with https://www.dpti.sa.gov.au/standards/transport_modelling_and_analysis.
- 7.2 The Contractor shall source any necessary future travel demand forecasts from the Metropolitan Adelaide Strategic Transport and Evaluation Model (MASTEM) subject to the following:
- a) Future traffic volume forecasts extracted from MASTEM will be adjusted before being used in any sub area model(s) or subsequent analysis. Approval from the Principal on this process,

including the Principal's involvement in the extraction of future volumes, shall constitute a **Hold Point**.

- b) Endorsement of the demand adjustment process by the Principal shall constitute a **Hold Point**.
- 7.3 The Metropolitan Adelaide Traffic Simulation and Analysis Model (MATSAM) will be used for any traffic simulation modelling. Unless specified by the Contract Documents, the most up to date version of the Aimsun Next software shall be used for any sub area traffic simulation modelling.
- 7.4 Where provided by the Principal, the Contractor shall calibrate and validate the traffic simulation sub area model to develop a base case transport model. The calibration and validation of the base case transport model will be in accordance with the department's MATSAM Traffic Simulation Model Development Guidelines (Aimsun Next).
- 7.5 The Contractor shall provide the Principal with a copy of the completed base case transport model verification worksheet. This shall constitute a **Hold Point**.
- 7.6 The Principal will return a copy of the verification worksheet with directions for changes required to the base case transport model. The updated base case transport model is to be provided to the Principal for approval. This shall constitute a **Hold Point**.
- 7.7 The Contractor shall develop any required project options transport models using the base case transport model as a basis.
- 7.8 The Contractor shall engage an appropriately qualified and experienced third party external verifier to undertake the following in accordance with DPTI's MATSAM Guidelines:
 - a) verify the base case model; and
 - b) verify the project case transport model options.
- 7.9 The Contractor shall provide the Principal with a copy of the completed model verification worksheet. This shall constitute a **Hold Point**. The Principal will return a copy of the verification worksheet with directions for changes required to the project options transport model(s).
- 7.10 The Contractor shall prepare the following transport modelling deliverables:
 - a) a Base Case Transport Model Calibration and Validation Report including the third party verifier report;
 - b) a Preferred Option Model Development Report including the third party verifier report of the demand adjustment methodology / process; and
 - c) SIDRA verification in accordance with RD-GM-D4 "Traffic Analysis and Modelling".

Generation of Options

- 7.11 The Contractor shall generate options as required by PC-PL1 "Framework for Planning Studies".
- 7.12 The initial generation of a long list of project options will consider, amongst other things, the following:
 - a) concepts to maximise road safety benefits;
 - b) concepts to achieve best possible level of service for traffic numbers, i.e. the best possible traffic solution with no constraints;
 - c) concepts to minimise land acquisition;
 - d) concepts that deliver minimum cost and program;
 - e) concepts to maximise realisation of the stated benefits;
 - f) concepts to minimise environmental and community impacts and maximise sustainability;
 - g) concepts to maximise potential for integrated, sustainable infrastructure and transport;
 - h) concepts to maximise value;
 - i) concepts to balance between the above.

Concept Design Development

7.13 Concept design development will be in accordance with the following:

- a) PC-PL3 “Concept Design Development”.

Cost Estimation and Constructability

7.14 Unless required by the Contract Documents, the Contractor shall prepare cost estimates and undertake constructability assessments for the following:

- a) longlist of options;
- b) shortlist of approved Concept Designs; and
- c) approved Reference Design.

7.15 The cost estimates and constructability assessments will be undertaken in accordance with the following:

- a) PC-PL4 “Constructability”; and
- b) PC-PL5 “Cost Estimation”.

Project Funding and Budget Impacts

7.16 The Contractor shall make an assessment of the cash flow requirements, potential procurement strategy and program in order to meet timeframes on required spend and project completion taking in to account the requirements and outputs of PC-PL5 “Cost Estimation”.

8 Hold Points

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

Document Ref.	Hold Point	Response Time
5.8	Approval of the Engagement Plan	5 Working Days
7.2	Endorsement of use of MASTEM	2 Working Days
7.5	Provision of the completed base case	2 Working Days
7.6	Provision of the updated base case	2 Working Days
7.9	Provision of the model verification worksheet	2 Working Days