Capital Works Procurement: The Selection of a Building Procurement Method

Research Program C:
Deliver and Management of Built Assets

CRC Construction Innovation
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The Research Program

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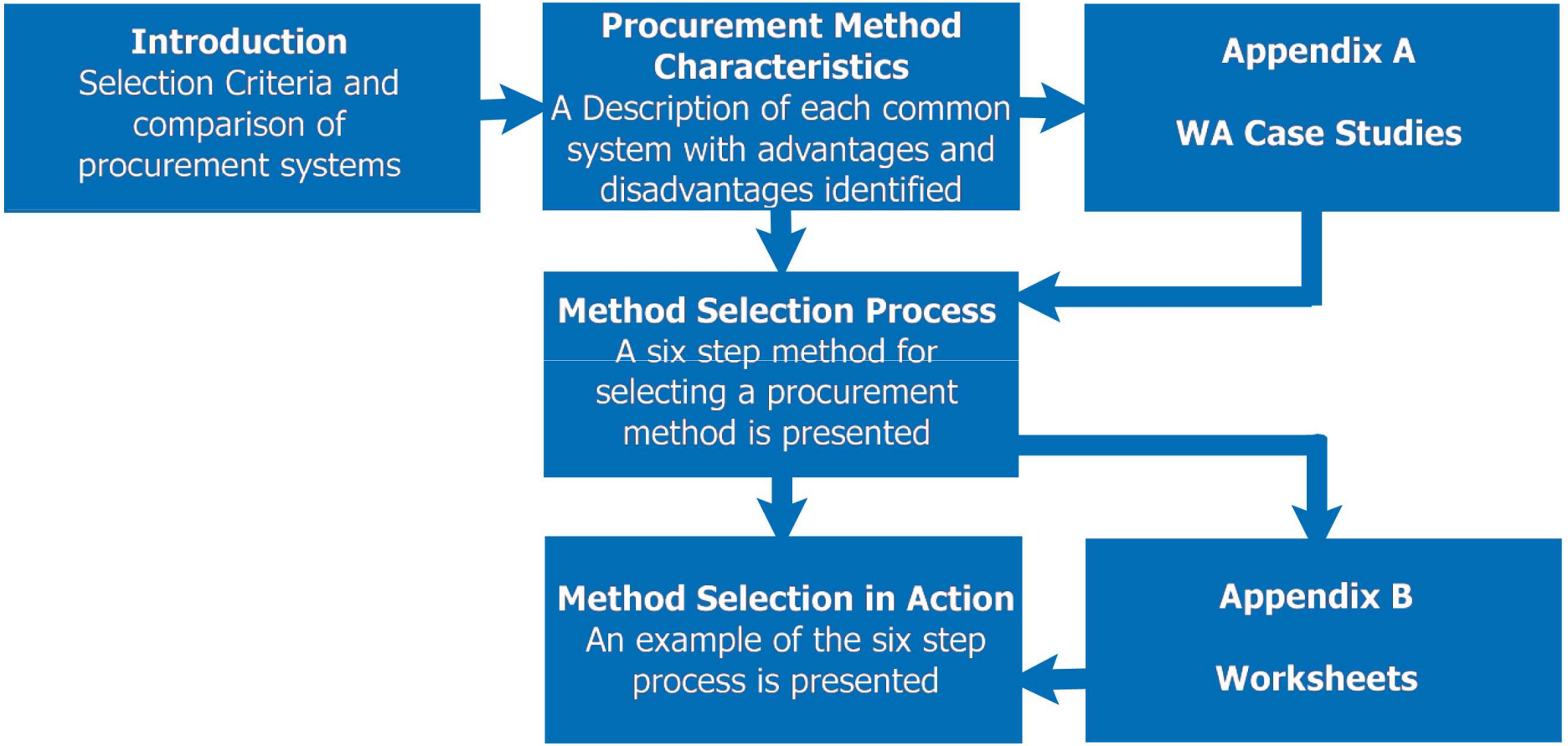
Procurement Selection Process Map



Procurement Method Selection
DHW Procurement Strategy

Refer to the **'Strategic Asset Management Framework for Western Australian Public Sector Agencies'** which relates to the following steps prior procurement selection.

1. Identify and Quantify the need and demand for a new facility
2. Identify options meeting the needs of stakeholders and conduct preliminary risk analysis
3. Justify preferred option(s) and conduct financial and economical appraisal
4. Select ideal project option/brief, conduct risk/benefits analysis, business case and obtian clients authority to proceed

Procurement Method Selection Process

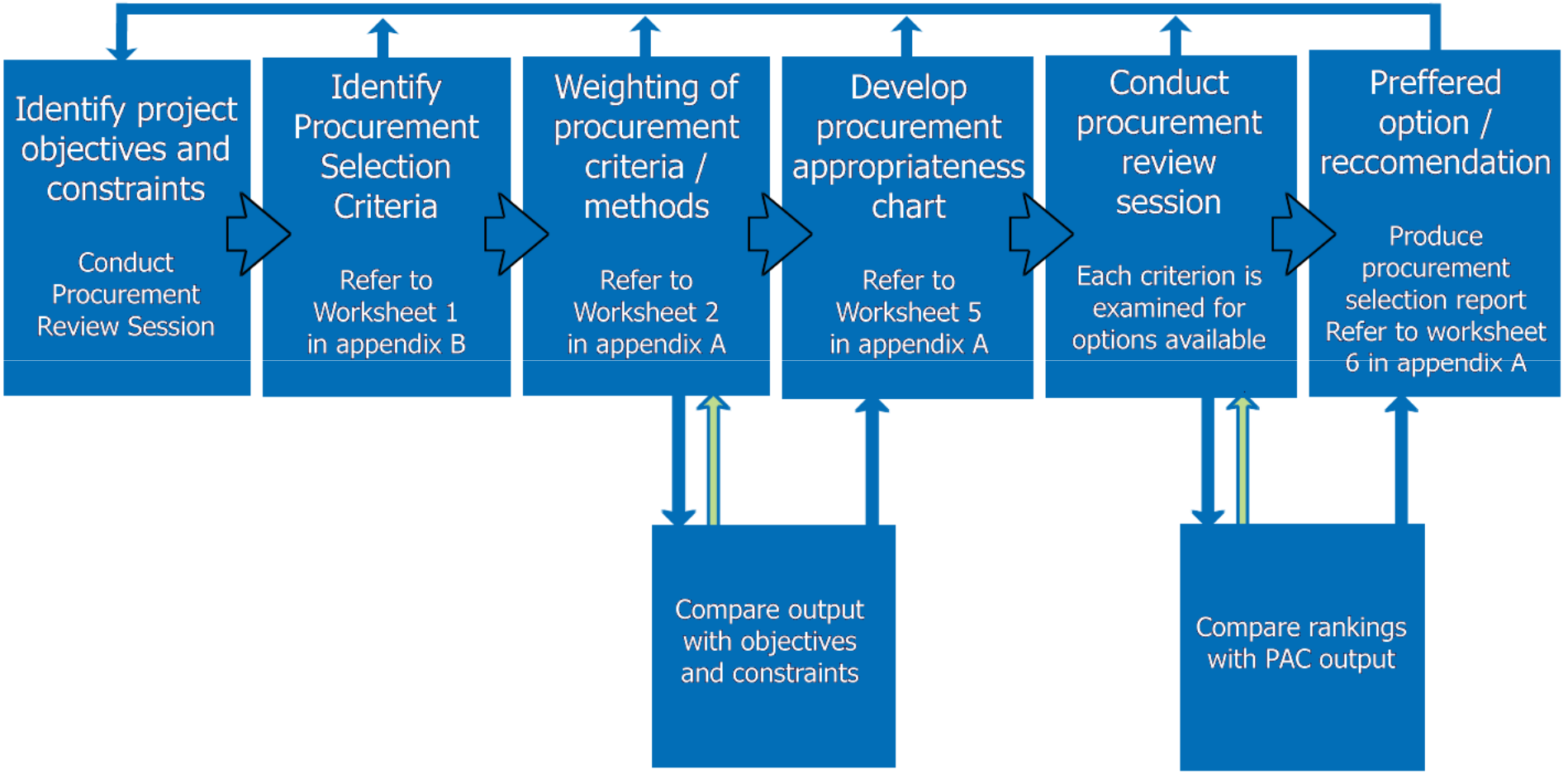
Fig. 3.2

This is the selection process that we will be dealing with - it is expanded upon in the following slide

Develop contract documents for tender, estimate and tender evaluation plan

Call for tenders from consultants and/or contractors and make recommendations to the client

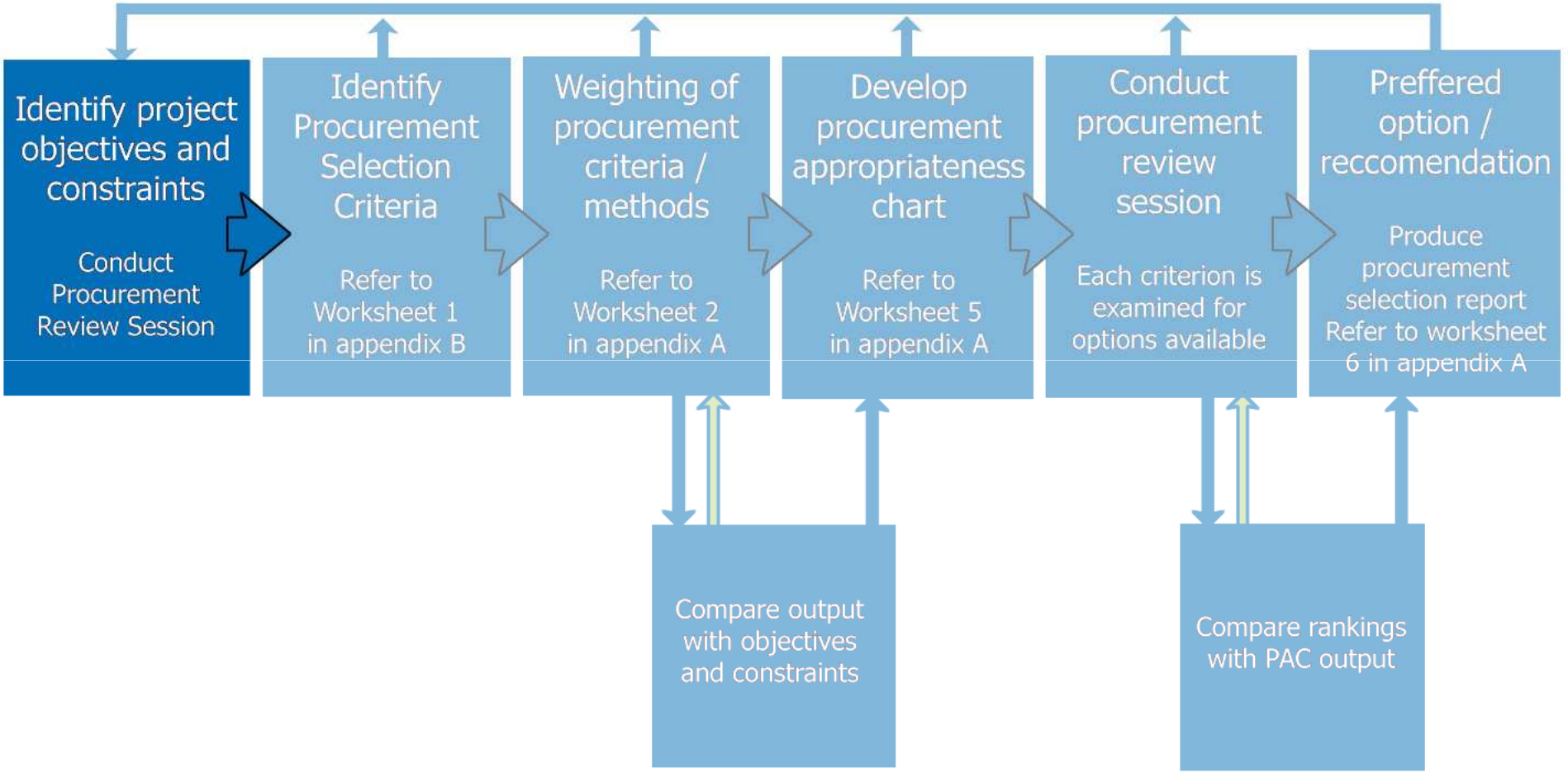
Procurement Method Selection



Procurement Method Selection Process – Six Steps

- **Procurement Method Selection Process**
  - 1. Identify Project Objectives and Constraints
  - 2. Identify Procurement Selection Criteria
  - 3. Weighting of Client Criteria / Procurement
  - 4. Procurement Appropriateness Chart
  - 5. Procurement Review Session
  - 6. Preferred Option

Procurement Method Selection



Step 1- Identify Objectives & Constraints

PROJECT CHARACTERISTICS			
Project Name/ Location:		**Project Type:**	
Contract Duration:		**Actual Contract Duration:**	
Contract Value:	**$**	**Actual Contract Value**	**$**

List Key *Project Objectives*:

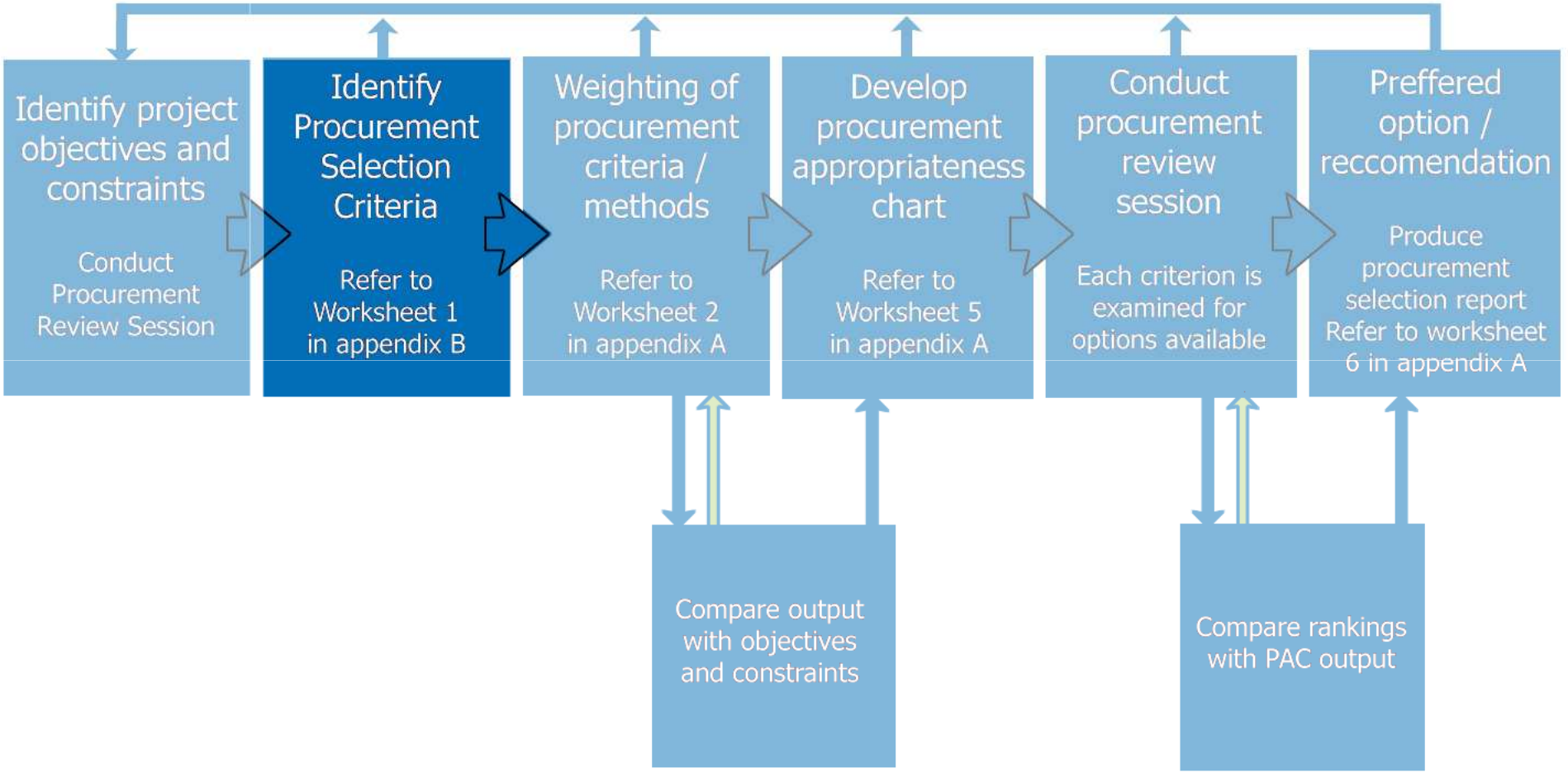
List Key *Project Constraints*:

Identify Possible Procurement Options to be considered:

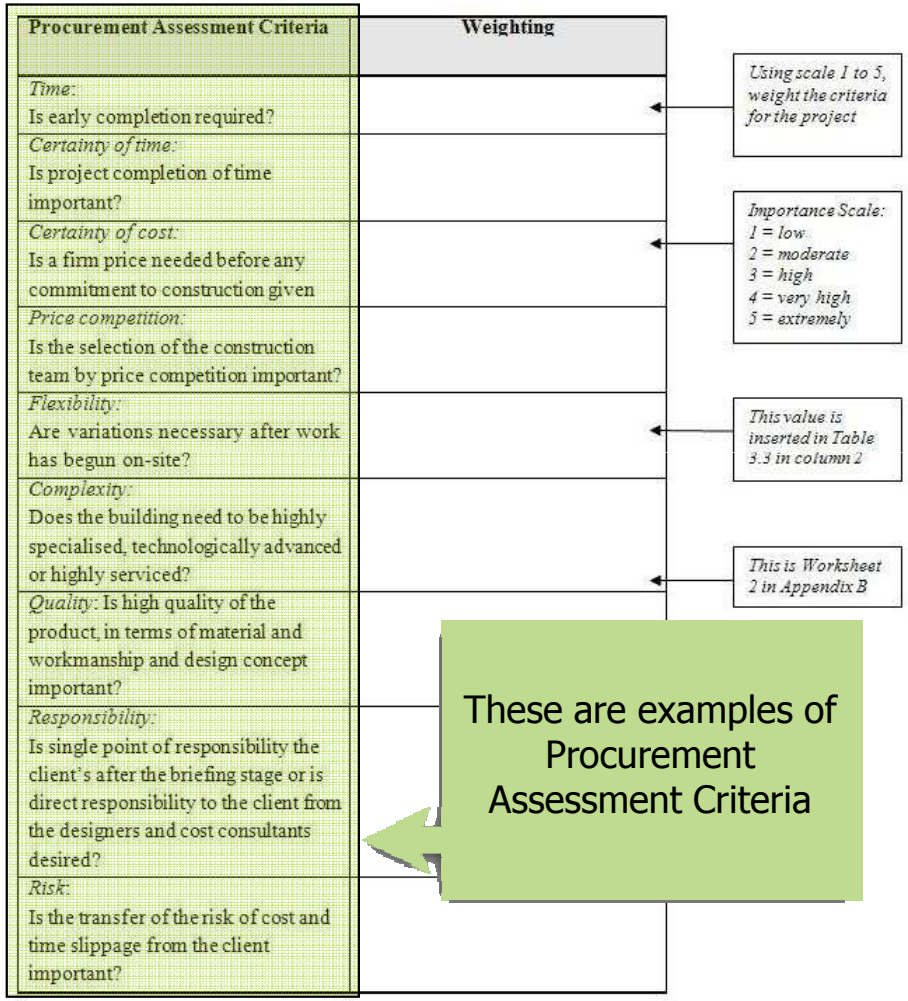
In this worksheet Objectives and Constraints are identified

Possible procurement options are noted for reference in Step 3 and 4

Procurement Method Selection
Identify Procurement Section Criteria



Step 2 - Identify Procurement Assessment Criteria Worksheet 2



Procurement Assessment Criteria	Weighting
Time: Is early completion required?	
Certainty of time: Is project completion of time important?	
Certainty of cost: Is a firm price needed before any commitment to construction given	
Price competition: Is the selection of the construction team by price competition important?	
Flexibility: Are variations necessary after work has begun on-site?	
Complexity: Does the building need to be highly specialised, technologically advanced or highly serviced?	
Quality: Is high quality of the product, in terms of material and workmanship and design concept important?	
Responsibility: Is single point of responsibility the client's after the briefing stage or is direct responsibility to the client from the designers and cost consultants desired?	
Risk: Is the transfer of the risk of cost and time slippage from the client important?	

Using scale 1 to 5, weight the criteria for the project

Importance Scale:
1 = low
2 = moderate
3 = high
4 = very high
5 = extremely

This value is inserted in Table 3.3 in column 2

This is Worksheet 2 in Appendix B

These are examples of Procurement Assessment Criteria

In this worksheet project specific Procurement Assessment Criteria are inserted

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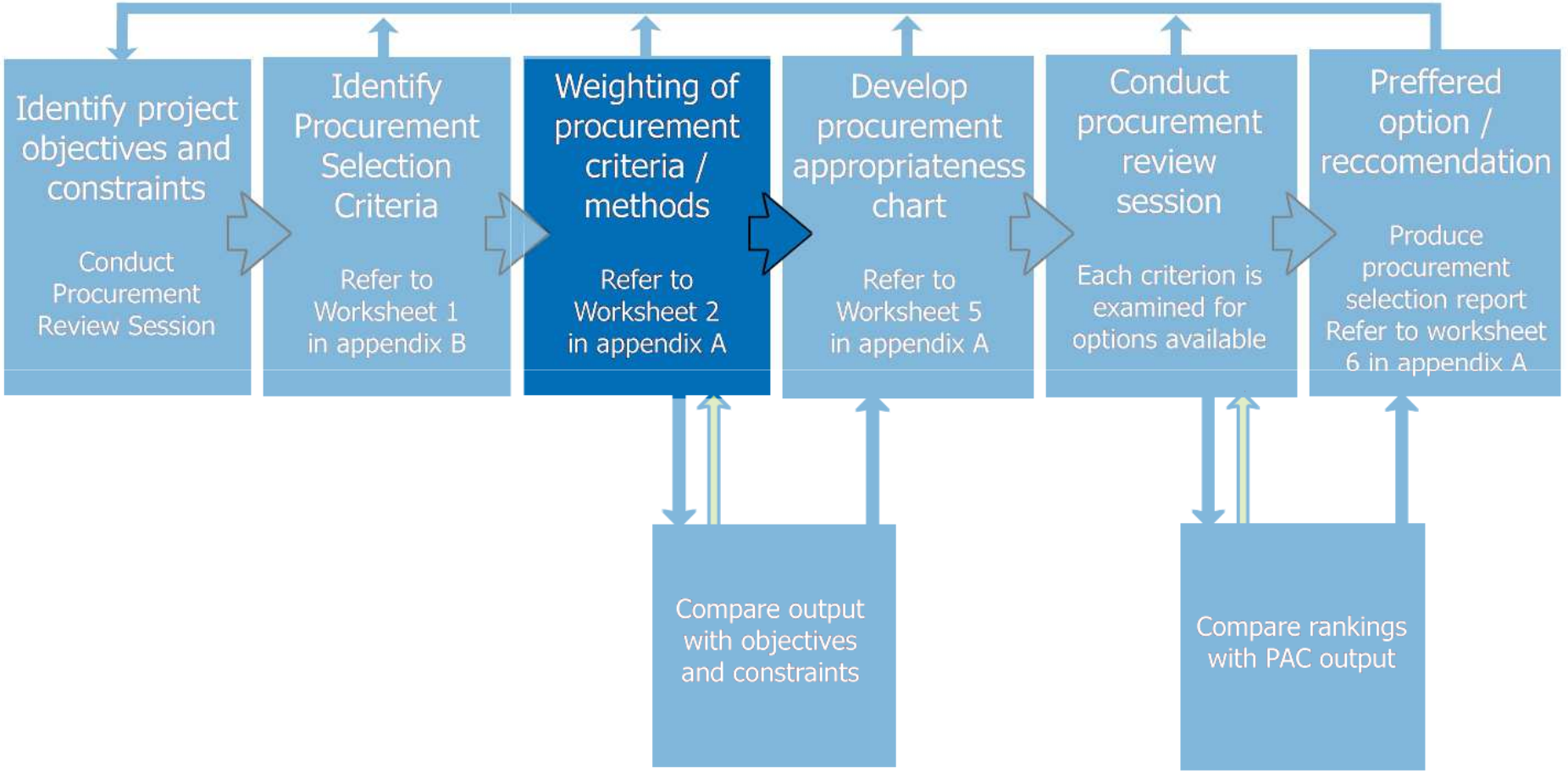
Procurement Method Selection
Weighting of Criteria



Step 3 - Weighting of Client Criteria

Procurement Assessment Criteria	Weighting
Time: Is early completion required?	
Certainty of time: Is project completion of time important?	
Certainty of cost: Is a firm price needed before any commitment to construction given	
Price competition: Is the selection of the construction team by price competition important?	
Flexibility: Are variations necessary after work has begun on-site?	
Complexity: Does the building need to be highly specialised, technologically advanced or highly serviced?	
Quality: Is high quality of the product, in terms of material and workmanship and design concept important?	
Responsibility: Is single point of responsibility the client's after the briefing stage or is direct responsibility to the client from the designers and cost consultants desired?	
Risk: Is the transfer of the risk of cost and time slippage from the client important?	

Using scale 1 to 5, weight the criteria for the project

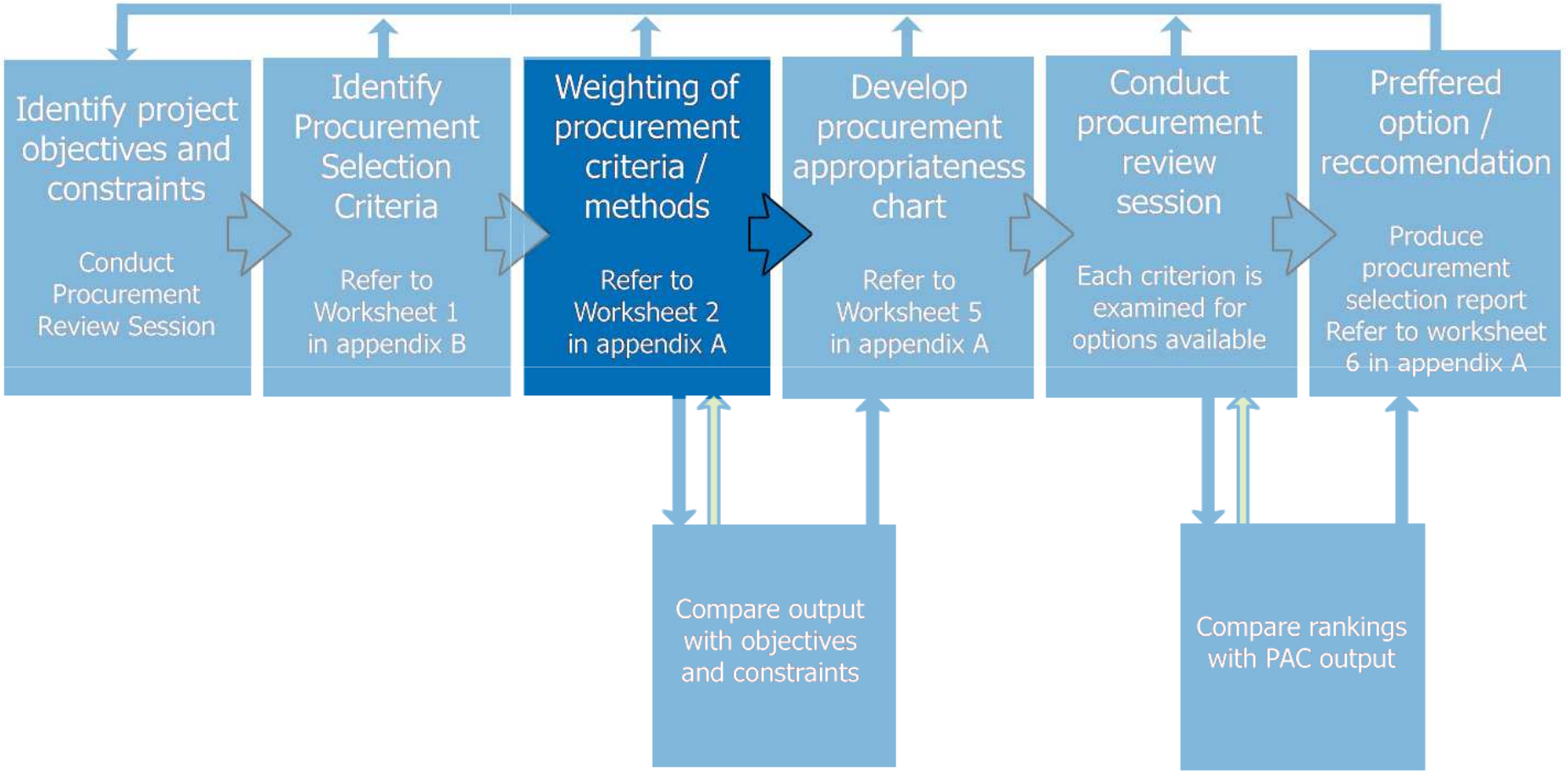
Importance Scale:
1 = low
2 = moderate
3 = high
4 = very high
5 = extremely

This value is inserted in Table 3.3 in column 2

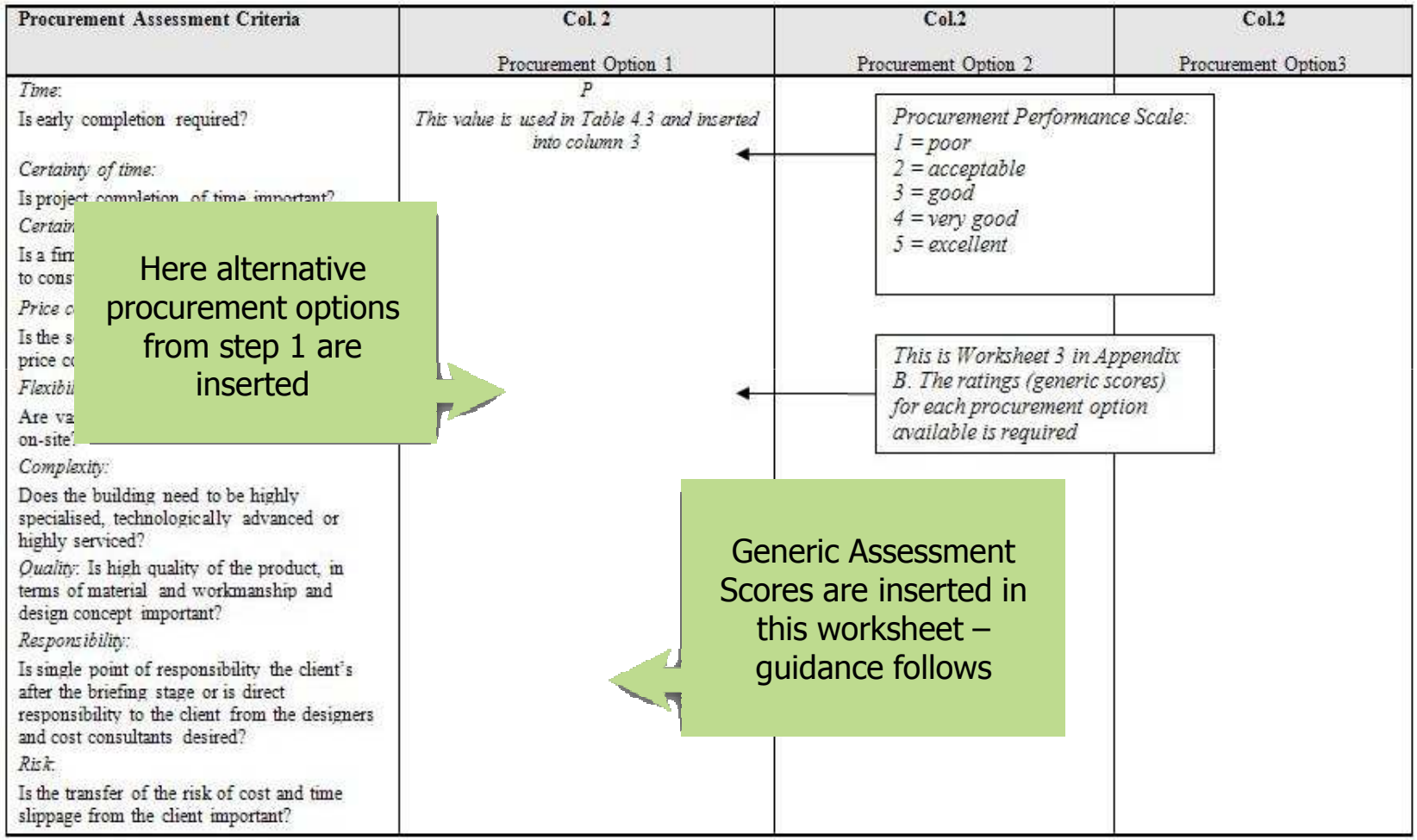
This is Worksheet 2 in Appendix B

Using this worksheet again, *Project Specific* weighting for each criteria are inserted

Procurement Method Selection
Weighting of Criteria



Scoring Procurement Options
Worksheet 3



Procurement Selection Criteria
Comparison of Procurement Methods

Criteria	Traditional *(Separated)*	Design and Construct *(Integrated)*	Management *(Packaged)*	Collaborative *(Relational)*
Time/Certainty of Time	Not the fastest of methods. Desirable to have all information at the tender stage. Consider two stages or negotiated tendering.	Relatively fast. Pre-tender time largely depends on the amount of detail in the client's requirements. Construction time reduced because design and building proceed in parallel.	Early start on site is possible, long before tenders have been invited for some of the works packages.	High level of dependence on relationships, teamwork, and the adaptability and performance of individuals.
Complexity	Basically straightforward but complications can arise if client requires that certain subcontractors are used.	An efficient single-point contractual arrangement integrating design and construction expertise with just one accountable organisation.	Design and construction skills integrated at an early stage. Complex management operation requiring sophisticated techniques.	Considerable complexity involved. Collaboration and mutual scope needed.
Quality	Comprehensive design sets out quality standards Contractor is wholly responsible for achieving quality on site.	Client has less control over design details. Contractor's design expertise may be limited. The client has little say in the choice of specialist sub-contractors.	Client requires certain standards to be shown or described. Management contractor responsible for quality of work and materials on site.	Some potential for quality to be comprised to meet cost targets, mitigated by cost targets and client involvement

Populating the toolkit is a process that will evolve over time – above and following are useful guidelines

Procurement Selection Criteria
Comparison Of Procurement Methods

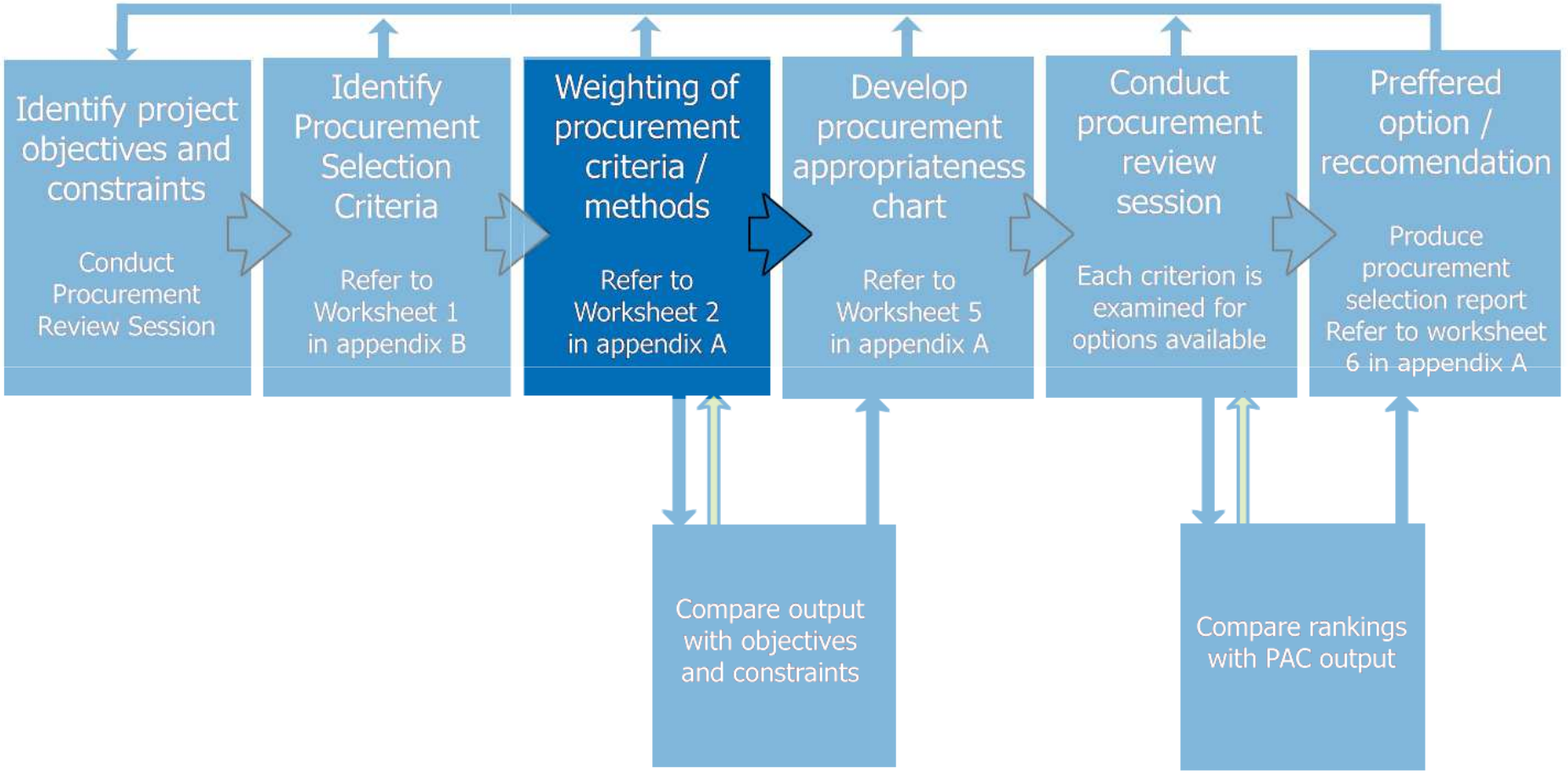
Criteria	Traditional *(Separated)*	Design and Construct *(Integrated)*	Management *(Packaged)*	Collaborative *(Relational)*
Flexibility	Client controls design and variations to a large extent.	Limited without cost penalties once the contract is signed. Flexibility in developing details or making substitutions is to the contractor's advantage.	Client can modify or develop design requirements during construction. Management contractor can adjust programme and costs.	Project scope is developed collaboratively albeit unclear or uncertain in the concept phase. Effort is required to properly define in the time available. Requires a high degree of flexibility but fixed within a Target Outturn Cost (TOC) constraint.
Certainty of cost	Certainty in cost before commitment to build. Clear accountability and cost monitoring at all stages.	Guaranteed cost and completion date.	Client is committed to start building on a cost plan, project drawings and specification only.	Once the TOC is determined history of alliance projects has shown that few exceed cost.
Price Competition	Competitive tenders are possible. Negotiated tenders reduce competitive element.	Difficult for the client to compare proposals which include both price and design. No benefit passes to client if the contractor seeks greater competitiveness for specialist work and materials.	Management contractor is appointed because of management expertise rather than because their fee is competitive. However, competition can be retained for the works packages'.	Selection is based on non-cost criteria. Alternative models of cost competition at the time of tender.
Responsibility	Can be clear-cut division of design and construction. Confusion possible where there is some design input from the contractor or specialist subcontractors and suppliers.	Can be clear division, but confused where the client's requirements are detailed as this reduces reliance on the contractor for design or performance. Limited role for the client's representative during construction.	Success depends on the management contractor's skill. An element of trust is essential. The professional team must be well coordinated through all the stages.	Heavy focus on collaboration. Developing and maintaining relationships with the use of expert facilitation is the key.

Procurement Selection Criteria
Comparison Of Procurement Methods

Criteria	**Traditional** *(Separated)*	**Design and Construct** *(Integrated)*	**Management** *(Packaged)*	**Collaborative** *(Relational)*
Risk	Generally fair and balanced between the parties.	Can lie almost wholly with the contractor.	Lies mainly with the client – almost wholly in the case of construction management.	Project risks shared and collaboratively managed. Model available for financial risk and reward
Summary	Benefits of **cost** and **quality** but at the expense of **time**.	Benefits of **cost** and **time** but at the expense of **quality**	Benefits of **time** and **quality** but at the expense of **cost**	Alliances instil a no blame culture of collaboration and trust. Fiscal transparency is at the fore. Selection on the basis of best for project generates commitment and alignment of mutual goals.

(*Adapted* from Cox and Clamp, 1990)

Procurement Method Selection
Weighting of Criteria



Procurement Method Scoring Table
Worksheet 4

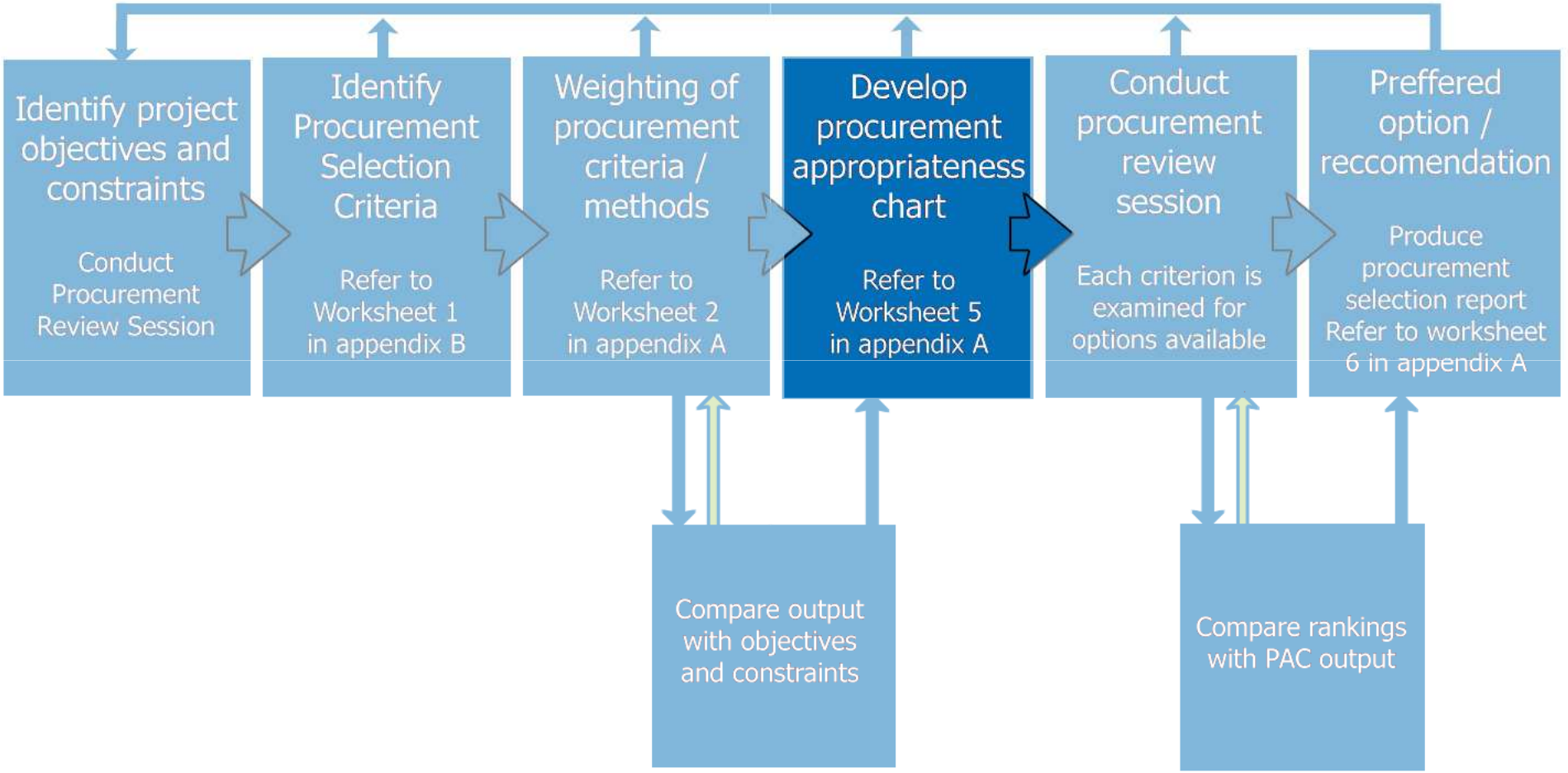
Procurement Assessment Criteria	**Col.2** **Clients' Weighting**	**Col 3** Procurement Option 1	**Col 3** Procurement Option 2	**Col 3** Procurement Option 3
Time: Is early completion required?	*W*	*W* x *P*	*W* x *P*	*W* x *P*
Certainty of time: Is project completion of time important?				
Certainty of cost: Is a firm price needed before any commitment to construction given				
Price competition: Is the selection of the construction team by price competition important?				
Flexibility: Are variations necessary after work has begun on-site?				
Complexity: Does the building need to be highly specialised, technologically advanced or highly serviced?				
Quality: Is high quality of the product, in terms of material and workmanship and design concept important?				
Responsibility: Is single point of responsibility the client's after the briefing stage or is direct responsibility to the client from the designers and cost consultants desired?				
Risk: Is the transfer of the risk of cost and time slippage from the client important?				
Σ				

Transfer the numbers from worksheet 2 to this column

In this column insert the product of worksheet 2 and 3

The preferred procurement method is that with the highest total score

Procurement Method Selection
Procurement Appropriateness Chart



Step 4 - Procurement Appropriateness Chart

The following key is used to match the criteria with the procurement method in this stage.

Key	☺ Good	😐 Average	☹ Poor

Time	Procurement Option 1	Procurement Option 2	Procurement Option 3	Procurement Option 4
Completion date certainty (once let)				
	Comment:			
Ability to meet current programme				
	Comment:			
Facility to phase construction				
	Comment:			

Each procurement methods examined in more detail for *time*, *cost* and *quality* to obtain a balanced view of selection

Step 4 - Procurement Appropriateness Chart

The following key is used to match the criteria with the procurement method in this stage.

Key	☺ Good	😐 Average	☹ Poor

Cost	Procurement Option 1	Procurement Option 2	Procurement Option 3	Procurement Option 4
Cost certainty prior to major commitment.				
	Comment:			
Transfer of cost risk				
	Comment:			
Competitive tendering in current market conditions				
	Comment:			

Improved transparency in the decision-making process enables learning for future procurement method selection decisions

Procurement Appropriateness Chart

The following key is used to match the criteria with the procurement method in this stage.

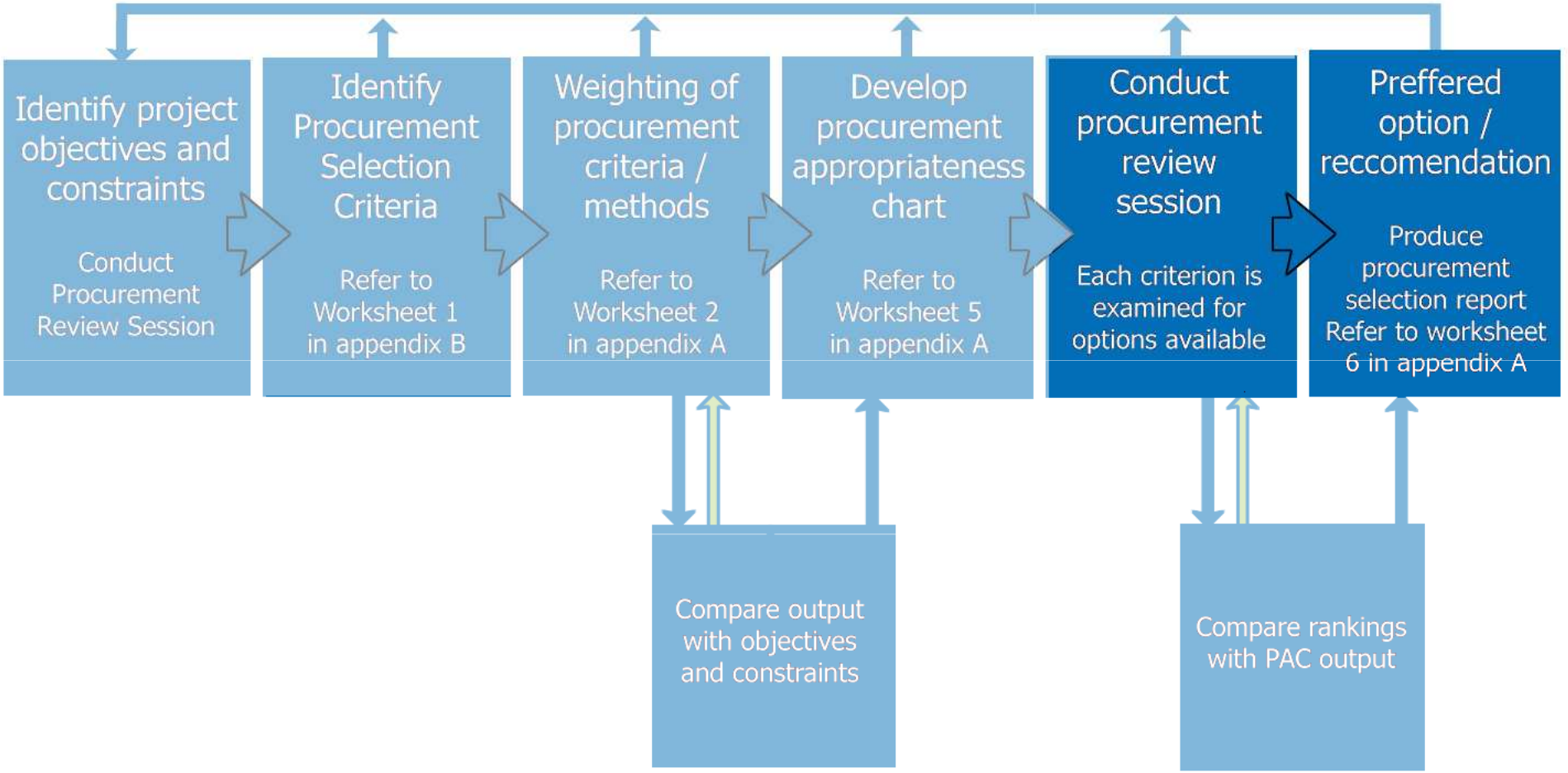
Key	☺ Good	😐 Average	☹ Poor

Quality	Procurement Option 1	Procurement Option 2	Procurement Option 3	Procurement Option 4
Ability for contractor to add value in design development				
	Comment:			
Flexible to accommodate change orders				
	Comment:			
Single point responsibility for design & construction				
	Comment:			
Ability to control / respond to unknowns site conditions				
	Comment:			
Client retains control over development of design				
	Comment:			

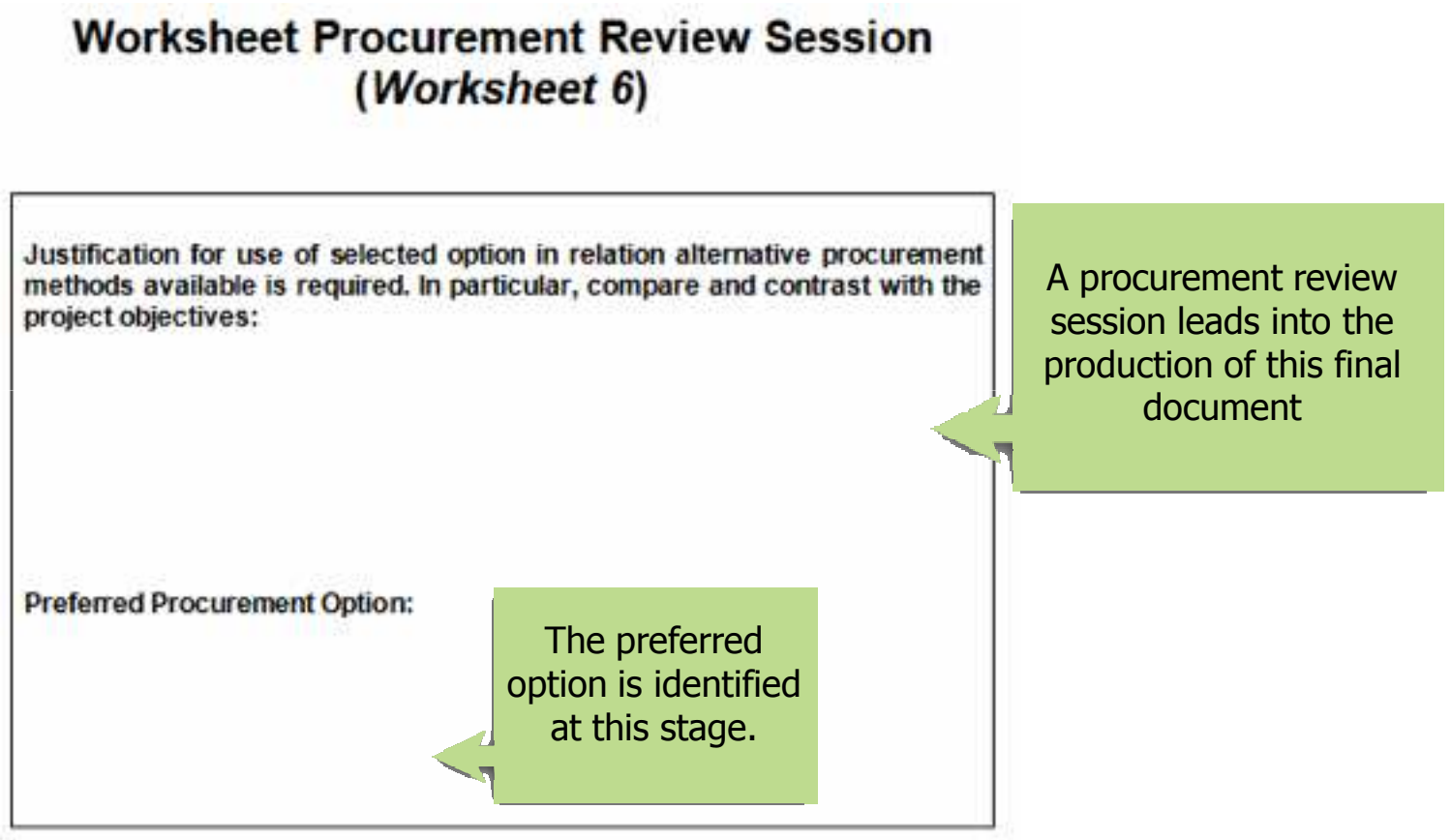
Each procurement methods examined in more detail for *time*, *cost* and *quality* to obtain a balanced view of selection

Improved transparency in the decision-making process enables learning for future procurement method selection decisions

Procurement Method Selection
Procurement Method Selection Process



Steps 5 / 6 – Review Session



Worksheet Procurement Review Session
(*Worksheet 6*)

Justification for use of selected option in relation alternative procurement methods available is required. In particular, compare and contrast with the project objectives:

Preferred Procurement Option:

A procurement review session leads into the production of this final document

The preferred option is identified at this stage.