

Table 1 Considerations when completing a tender document for river restoration

(Table 9.2 reproduced from: Chapter 9 - Constructing Restoration Schemes: Uncertainty, Challenges and Opportunities, in the textbook “River Restoration: Managing the Uncertainty in Restoring Physical Habitat”, p182. Note: two co-authors of this chapter work for the RRC)

Key Personal	Summary of issues to consider and main check to make to reduce uncertainty	Potential uncertainty	Examples/ Comments (Discussed in more detail within this chapter)
The Team (including contractor)	Check: - Experience - Commitment - Correct mix of specialists	A mismatched team with limited experience in River restoration projects could increase uncertainty due to limited knowledge.	Inexperienced personal may not fully appreciate the degree to which river hydrology can directly influence the success of project but can be overcome by liaising with appropriate specialists.
Contractor	Confirm/define: - Pre-tender site visit - Machinery to be used and how/when - Method statement; - Sub-contract agreements - Level of site supervision	If the contract does not adequately define these issues both uncertainty due to both limited knowledge and variability can increase.	- Pre-tender site visits can help provide insight into contractors understanding of the task; - Conventional engineering tasks may call for a smooth earthen bank finish whereas river restoration benefits from using toothed buckets to aid rapid take of vegetation; - Good supervision and sub-contract agreements can prevent for example nearby hedges with good habitat quality being removed or meandering rivers being dug but with trapezoidal sides.
All involved with the construction phase	Ensure/assess: - Importance of good working relationship - Sufficient funding has been secured - Suppliers are aware of requirements - Clear contractual agreements completed - References sought to confirm experience	Clear communication is essential throughout between all parties (e.g. contractors, project managers, statutory authorities, experts, stakeholders and product suppliers). If not uncertainty due to limited knowledge can increase.	Communication is a key element and by providing a focal person responsible is a positive way forward (see Figure.8.) Suppliers often don't realise the need to specific requirement such as details of types and size of vegetation, gravel or stone – stipulating these in minute detail with overcome potential construction problems at a later date.

Project manager (in conjunction with team)	Ensure: - Financial contingency included - Stakeholders concerns addressed - All approvals obtained	If all of these issues are not clearly defined at the contract stage uncertainty due to limited knowledge can increase	The formation of a local focal group working closely with the team can help overcome stakeholders concerns and smooth the way for obtaining approvals. Lack of financial contingency can result in subsequent bad management or project completion
Site variables	Assess impact/extent of: - Weather or river conditions - Vandalism - Problem species - Substrate - Designate species - Breeding season of fauna	These are the areas that are most difficult to define in terms of uncertainty. Each bring an inherent natural uncertainty. Within the construction phase, it is essential to take steps to account for these but it must be recognised that external forces can strongly influence each.	Difficult to provide for all eventualities but being aware of the issues and working with experts and local groups can mitigate some. Looking at past records and ensuring appropriate EIAs are completed early will help identify any associated ecological risk. Methods such as taking samples of sub-surface geology of referral to historical document (both scientific and social).