Guidelines for setting and evaluating plan objectives for water management.

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Glossary

Term	Explanation used in this document
Basin Plan 2012	Basin Plan 2012 for the Murray-Darling Basin under the Commonwealth *Water Act 2007*.
Broad objectives	Statements of desired outcomes to which the plan will contribute. At least one broad objective is required for each of the economic, social/cultural and environmental aspects of the vision statement.
Drivers	Drivers are influences on water management within a plan area. They may be community based; government policies; existing legislation; or other planning instruments. Drivers may define or refine an objective's focus; set boundaries around an objective; or require other elements be considered in the development of an objective. Some drivers may interact with others to influence objective development.
NWI	National Water Initiative
PIs	Performance Indicators.
Plan Implementation Audits/Reviews	The reports are also known as Plan Implementation Audits. They examine whether the rules of a plan were implemented correctly and within the required timeframes. The frequency of reporting is determined by related legislation and agreements, for example the NSW *Water Management Act 2000* specifies no more than five-year intervals for management plans and the BASIN PLAN 2012 requires annual reporting.
Plan internal logic	Internal plan structure referring to clear links from objectives to rules. The structure of a WSP is directed by the NSW *Water Management Act 2000* to include a vision, objectives, strategies and performance indicators. Rules should link to strategies, which then link to targeted objectives, which link to broad objectives, which should all link to the plan vision.
Plan internal logic relationship diagram	Flow charts showing the relationships between broad and targeted objectives, strategies and rules for economic, social/cultural and environmental outcomes.
Plan rules	Legal mechanisms by which the plan implements water management strategies. At least one plan rule or rule set is required to implement each strategy. The term may refer to an individual plan clause, sub clause or multiple clauses depending on how the plan has been written.
Plan strategies	Statements of water management activities or levers a plan uses to deliver targeted objectives. (more broadly defined strategies are used in risk assessments prepared for WRP areas, see entry below)
Program logic	Established framework for evaluation, a linear series of steps that set out what needs to occur for a project to meet its desired outcomes – in this instance for a plan to achieve its objectives.
Relationship	For the purposes of this document 'relationship' refers to the linkages between broad and targeted objectives, targeted objectives and strategies, and strategies and rules. These relationships should be based on a conceptual model underpinned by evidence such as response models or other rationale. The strength of relationships should drive the selection of the most appropriate broad or targeted objective, strategy or rule because without strong relationship foundations any evaluation of plan success will be limited.

Term	Explanation used in this document
Risk assessments prepared for WRP areas	The Basin Plan requires a risk assessment be conducted for each WRP area as support documents for the development of the WRPs. They identify risks within the WRP area and outline mitigation strategies that may influence water management activities, address knowledge gaps, improve plan appropriateness or contribute to the development of plan objectives as a driver. Note these strategies are more broadly defined than generally used in this document. See Appendix 2 for further information
SMART	Specific—define a specific area or item for improvement. Measurable—quantify or provide an indicator of progress. Achievable—state what results can realistically be achieved given available resources and who will do the work. Relevant—choose goals that matter and are relevant to the plan area, resource management and stakeholders. Time-bound—specify when the result(s) can be achieved and delivered.
Strategy	Water management strategies are statements of water management activities the plan will use to deliver the targeted objectives. Each strategy will have a rule or set of associated rules that may vary depending on the water source type or condition and the required management effort.
Targeted objectives	Statements of the desired outcomes a plan will achieve. At least one targeted objective is required for each broad objective. All targeted objectives must be linked to at least one plan strategy.
Triple bottom line reporting	Evaluation of economic, social/cultural, and environmental outcomes guided by the legislation.
Vision	A mandatory plan element specified by the NSW *Water Management Act 2000*. A vision captures the overall intent of the plan and should be expressed in triple bottom line terms.
Water sharing and water resource plans (WSP and WRP)	Water sharing plans (WSP) are established under the NSW *Water Management Act 2000* and are prepared for all water sources in NSW. Water resource plans (WRP) are a requirement of the BASIN PLAN 2012 and cover water sources in the Murray-Darling Basin. WSPs will be a component of WRPs for water sources in the basin area. This document refers to 'plans' which may mean either WSPs or WRPs depending on the context. This draft uses the generic term 'plan' which refers to both WRPs and WSPs.
WMA 2000	NSW *Water Management Act 2000*.

1 Why this document is needed

To preserve water resources in river and groundwater systems for the long term, it is critical to balance the competing needs of water users and the environment. Water resource plans and water sharing plans (referred to collectively as 'plans' in this document) establish rules for sharing water between different types of water uses such as town supply, rural domestic supply, stock watering, industry and irrigation and the environmental needs of the river or aquifer. It is important that the level of plan success can be, and is, assessed and results reported to stakeholders.

During review of early water sharing plans it became apparent that some objectives could not be fully evaluated as their links into the plan strategies and rules were not clear, and some supporting documentation was not readily available. This has driven the need to establish an objective setting process that would result in evaluable objectives.

The objectives and strategies of plans provide a clear description of what the plan is aiming to achieve, a roadmap to achieving them, and a framework for the evaluation of plan success or effectiveness. To enable meaningful evaluations, the development of plan objectives should show clear links between what a plan can control via water management strategies and the desired economic, social/cultural or environmental outcomes for the plan area.

This document provides a step-by-step guide to setting and documenting evaluable plan objectives, strategies and performance indicators (PIs) and the process for evaluating plan success. It covers related information such as external drivers, contextual information and factors that may limit plan success. The information collated in these steps will be required for conducting reviews and evaluations through the life of a plan.

This is a support document to plan development and evaluation. It should be read in conjunction with objective setting diagrams, summaries and other material that has been compiled during the development of individual plans, together with associated legislative requirements.

2 Why objectives need to be established

Under Section 35 of the NSW *Water Management Act 2000* (WMA 2000) a water sharing plan (WSP) must include a vision, objectives, strategies and PIs in order to describe its intent, provide direction to its rules and measure its success. This information is called the plan's 'internal logic' in an evaluation.

The vision provides the overarching purpose of the plan and sits above the objectives. The plan vision should reflect the intent of the WMA 2000 and community expectations in a single statement.

The objectives specify the plan's aims, providing a clear description of what the plan will achieve. Strategies detail how the objectives will be delivered through the plan rules, and the PIs help measure the plan's success at both the objective and strategy level.

For WSPs, objectives are grouped into economic, social and cultural, and environmental outcomes—this triple bottom line approach is guided by the WMA 2000 (Section 3). The objectives are also split into broad and targeted objectives.

The Basin Plan 2012 established under the Commonwealth *Water Act 2007* also requires environmental objectives to be set for long-term watering plans and Aboriginal cultural objectives to be set for water resource plans (WRPs). Where objectives have already been described in the Basin Plan 2012, they are addressed in the next section as drivers.

3 Drivers for setting objectives

Although objectives are specified as a plan component by the WMA 2000, their content is guided by a variety of drivers. A driver is anything that influences the development of an objective for a particular plan. Some drivers specify a set of objectives. Others reflect local circumstances and capture stakeholder requirements. Drivers can be other plans or legal instruments, departmental policies, plan support documents or stakeholder consultation outcomes. Drivers may define or refine an objective's focus, set boundaries around an objective, or require other elements be considered in the development of an objective. Some drivers may interact with others to influence objective development, for example the Basin Plan 2012 and the risk assessments prepared for WRP areas.

Some examples of drivers are listed in Table 1 Selected objective drivers. Note that this is not a comprehensive list and further work is required to ensure all drivers relevant to a plan area are identified and considered in objective development. Not all the listed drivers are applicable to all plans. For example, coastal WSPs are not required to consider the Commonwealth *Water Act 2007* or the Basin Plan 2012, however there may be specific estuarine issues described in estuarine management plans that may also need to be addressed in a connected WSP. Although legislation provides initial guidance for objectives, other drivers may provide more detail. Stakeholder and community input and negotiations are essential to ensure the objectives set are the best for an individual plan area.

Table 1 Selected objective drivers

Driver type	Driver	Inland	Coastal
Agreements	NWI Agreement and other intergovernmental agreements	✓	✓
Consultation	Community, stakeholder and water user concerns	✓	✓
Legislation	Commonwealth Water Act 2007	✓	X
Legislation	NSW Water Management Act 2000	✓	✓
Legislation	Other NSW or Commonwealth legislation (e.g. Threatened Species Act, Fisheries Management Act)	✓	✓
Plans	Commonwealth Basin Plan 2012 (including objectives established in this document)	✓	X
Plans	Estuary management plans	X	✓
Plans	Existing NSW Water Sharing Plans	✓	✓
Plans	Floodplain Management/Harvesting Plans	✓	X
Plans	Long term watering plans	✓	X
Plans	Water quality and salinity management plans	✓	✓
Policies	DPI Strategic Plan	✓	✓
Policies	NSW Water Management Policies and Strategies	✓	✓
Policies	Regional Water Strategies	✓	✓
Documents	Outcomes from previous evaluations and other studies	✓	✓
Documents	Risk assessments	✓	✓

4 How evaluation fits into the planning cycle

Plans are developed under related legislation, which requires them to:

- allocate water between all water users and the environment
- protect and/or improve the health of our rivers
- provide security of access for water users
- meet the social and economic needs of regional communities
- facilitate water trading.

Plans follow a cyclic pattern from planning, through strategy and rule implementation, to evaluation, which then feeds back into plan refinement, as demonstrated in Figure 1. The strength of the planning cycle is adaptive management, where outcomes of plan progress reviews and plan performance evaluation should feed into more robust planning outcomes. To achieve this, any evaluation must be meaningful and based on clear and evaluable objectives and strategies. In establishing objectives, consideration and direction must be given to how evaluation should be undertaken, the information that needs to be collected to achieve this, and how success will be measured.
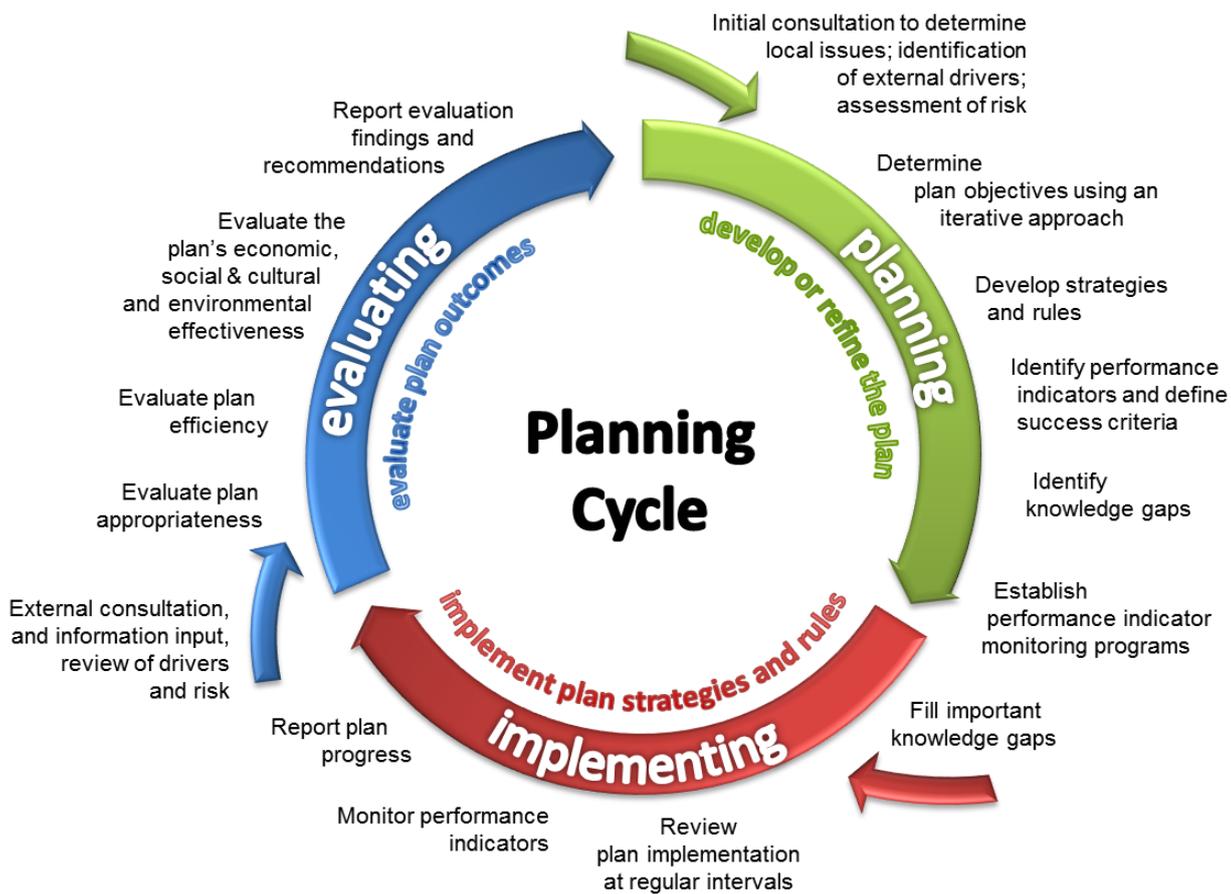
Figure 1 Performance monitoring and evaluation steps during the planning cycle

5 Evaluation process

Best-practice evaluation is based on a program logic approach. This is a linear step-by-step process that outlines the steps that need to occur for a project to deliver its desired outcomes. It also identifies any assumptions that may underpin step linkages and identifies the elements that need to be delivered to achieve those outcomes. These guidelines are written following a program logic approach to objective development and evaluation. A plan's program logic (see Figure 5) should outline the steps that need to occur for a plan to meet its desired objectives in a simple linear visual form; document assumptions behind objective, strategy and rule relationships; and describe implementation deliverables including performance indicators and their success criteria.

Developing a plan's program logic before the plan commences will provide a structure from which to achieve expected outcomes efficiently and effectively, and for those outcomes to be effectively measured. Applying program logic to the planning cycle allows evaluation to be completed in stages (Figure 2), which can progress as more information becomes available during a plan's term. A total picture of a plan's success can be developed using multiple lines of evidence based on information that is often variable in scale, coverage and duration. This flexible approach allows some form of review to occur, even though outcomes may not yet be directly attributable to a plan or fully achieved.

Appropriateness　　　**Efficiency**　　　　　　　　　　**Effectiveness**

The Plan　　　　　　Plan implementation　　　　　　　Plan outcomes

| Plan | Water management activities and outputs | Targeted objective outcomes | Broad objective outcomes |

Key plan information and internal plan structure　　　Strategies　　　Economic, social, cultural, Indigenous and environmental outcomes
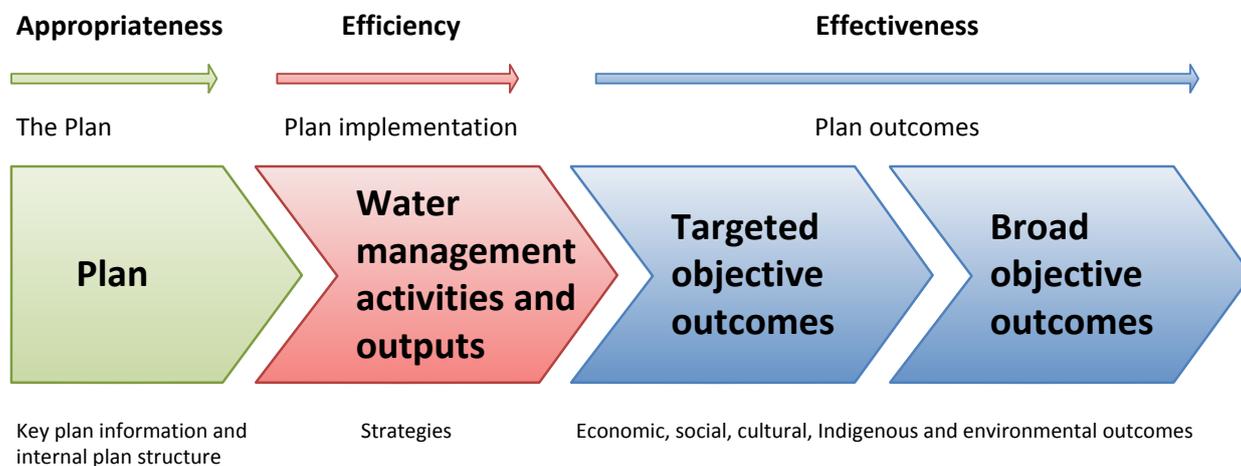
Figure 2 Plan operation elements following program logic and their related evaluation stage

Plan evaluation will consider the following elements

Appropriateness—whether the scale, scope, prioritisation and internal logic of a plan were and are still suitable for the circumstances. This relies on information that includes: geographical scale; types of water sources covered; the level of risk assigned to each water source; and whether each component of a plan has adequate linkages (i.e. whether all rules link to a strategy, each strategy links to a targeted objective and each targeted objective links to a broad objective—this is the plan's internal logic and the basis of the plan's program logic).

Efficiency—the level of implementation of plan rules, and whether their implementation was optimised. This element focusses on the water management activities required to implement a plan's rules and the resulting outputs (e.g. volumes of water made available for economic and social/cultural use, water trading statistics, volumes supporting environmental outcomes). The outputs feed directly into the achievement of targeted outcomes.

Effectiveness—extent to which the objective outcomes were met. That is, the level of success in achieving plan strategies that inform targeted and broad objectives.

Effectiveness evaluation of a plan is strongly influenced by the two previous evaluation stages (see Figure 3).

Appropriateness of plan scale, scope, prioritisation and internal logic	**Efficiency of** implementation of plan rules

Effectiveness of economic outcomes, social, cultural and Indigenous outcomes, and environmental outcomes
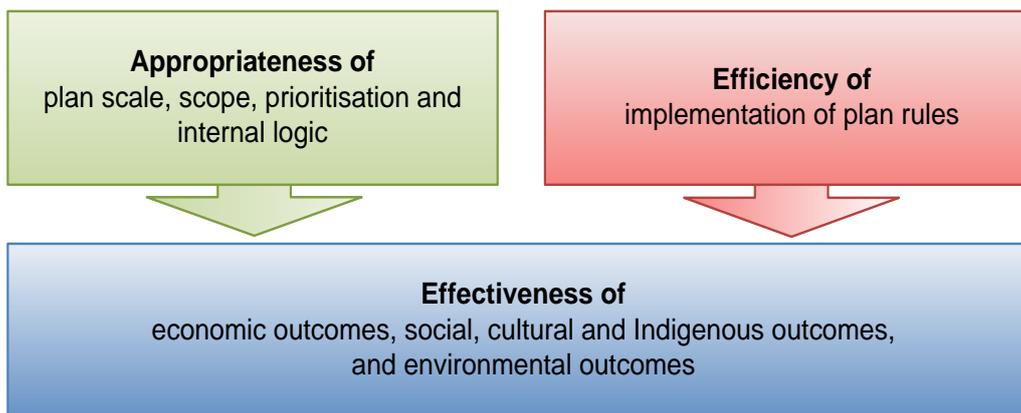
Figure 3 Interaction of the three evaluation elements

The following **key principles** underpin the evaluation approach:

- Plan objectives should only be included if they relate to water management activities the plan controls through strategies and rules.
- Only objectives that have a clear path through plan strategies to plan rules can be evaluated. Similarly any rules that do not link via a plan strategy to an objective will not contribute to plan evaluation.
- Objectives should be written to address only one of three aspects (economic, social and cultural, or environmental) of the plan vision.
- If plan strategies or rules have not been implemented, any effectiveness evaluation will be diminished or not possible.
- The evaluation of broad objectives is reliant on the achievement of targeted objectives and plan strategies as documented by predetermined predicted or known response or connectivity relationships (in this document called relationship knowledge). The program logic approach assumes if targeted objectives and related strategies indicate progress, then progress is also being made towards the related broad objectives.

6 Process for setting and evaluating objectives

The objectives and their associated evaluation process should be established at the commencement of a plan. This allows the achievement of a range of economic/social-cultural/environmental objectives addressed through water management strategies that utilise plan rules which are underpinned by relationship knowledge to effect desired outcomes. Objective success is evaluated by assessing whether the rules were implemented when appropriate conditions occurred (efficiency), and then hydrologic and economic/social-cultural/environmental assessment of PIs against predefined success criteria in the context of externalities and/or other relevant factors (effectiveness).

Many of the steps in the objective setting and evaluation process overlap and some will require delivery by specific points in a plan's term or life cycle, as shown in Figure 4. This diagram is based on the current water sharing plan term of 10 years, but can be adjusted to suit alternative or ongoing time frames.
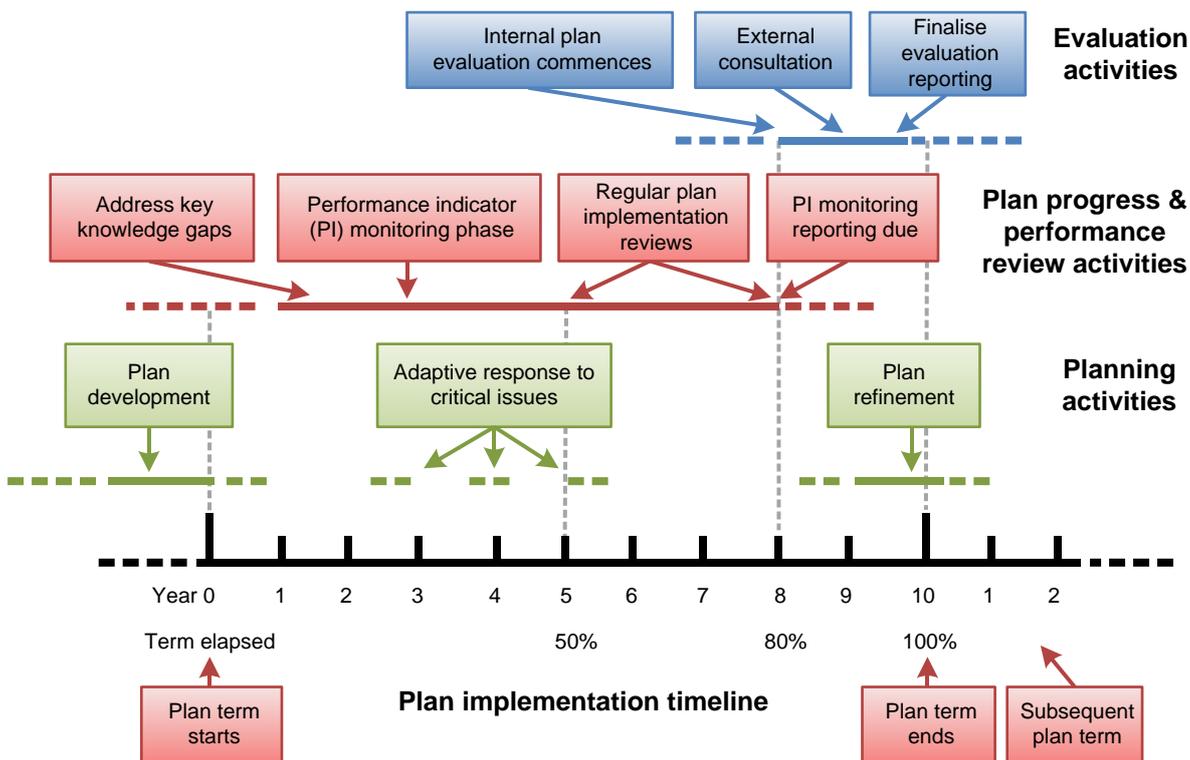
Figure 4 Timeline based on existing water sharing plan requirements

Relationships between steps are presented in Figure 5 and listed chronologically in Table 2. Some examples of the application of this process are given in Appendix 1. Each step corresponds to a heading with explanatory information provided. Note the figure and table are colour-coded to indicate planning cycle staging and should be approached as follows:

1. **Planning (green).** Work through the objective setting process during plan development to ensure objective and strategy evaluation will be feasible and deliverable within reporting timeframes. If not, the objective or strategy should be reworked, and/or further consideration given to filling key knowledge gaps. This is a cyclic objective and strategy setting process that will need to be approached in both a top down and bottom up manner to achieve the best outcomes.
2. **Documentation (orange).** This section consolidates the information collated and resources produced during the objective setting process. It covers steps 6.5 and 6.7–6.9
3. **Implementing (red).** Throughout the plan term there should be regular reviews of both rule implementation and PI monitoring progress: these activities are plan progress and performance review activities. By building these elements into all aspects of plan implementation, adjustments or corrective

action can be taken if plan progress or outcomes are not as expected. If these reviews are not undertaken, there can be lags in corrective action and/or evaluation limitations.

4. **Evaluating (blue).** Plan evaluation reporting should commence towards the end of a plan's term (80% of term is recommended) or predetermined reporting period in enough time to deliver useable results for plan term review or for external reporting requirements. It should be possible to complete several steps in advance, for example most of the appropriateness evaluation and some of the efficiency evaluation.

There is also some crossover between Figure 5 and Figure 6. The difference between the two is as follows:

- **Figure 5** shows a plan's **program logic**, which is an established framework for evaluation, a linear series of steps that set out what needs to occur for a project to meet its desired outcomes—in this instance for a plan to achieve its objectives. This includes a larger range of information than Figure 6. Figure 5 aims to show the full process for setting and evaluating objectives.
- **Figure 6** shows an example of a plan's **internal logic relationships**. This is a flowchart showing the relationships between broad objectives, targeted objectives, strategies and rules. This is a subset of the information presented in Figure 5 and represents content contained within the plan. Three charts are prepared for each plan, one for economic, social/cultural and environmental outcomes. This is an analytical tool useful for ensuring there are no disconnected rules, strategies or objectives in the plan.
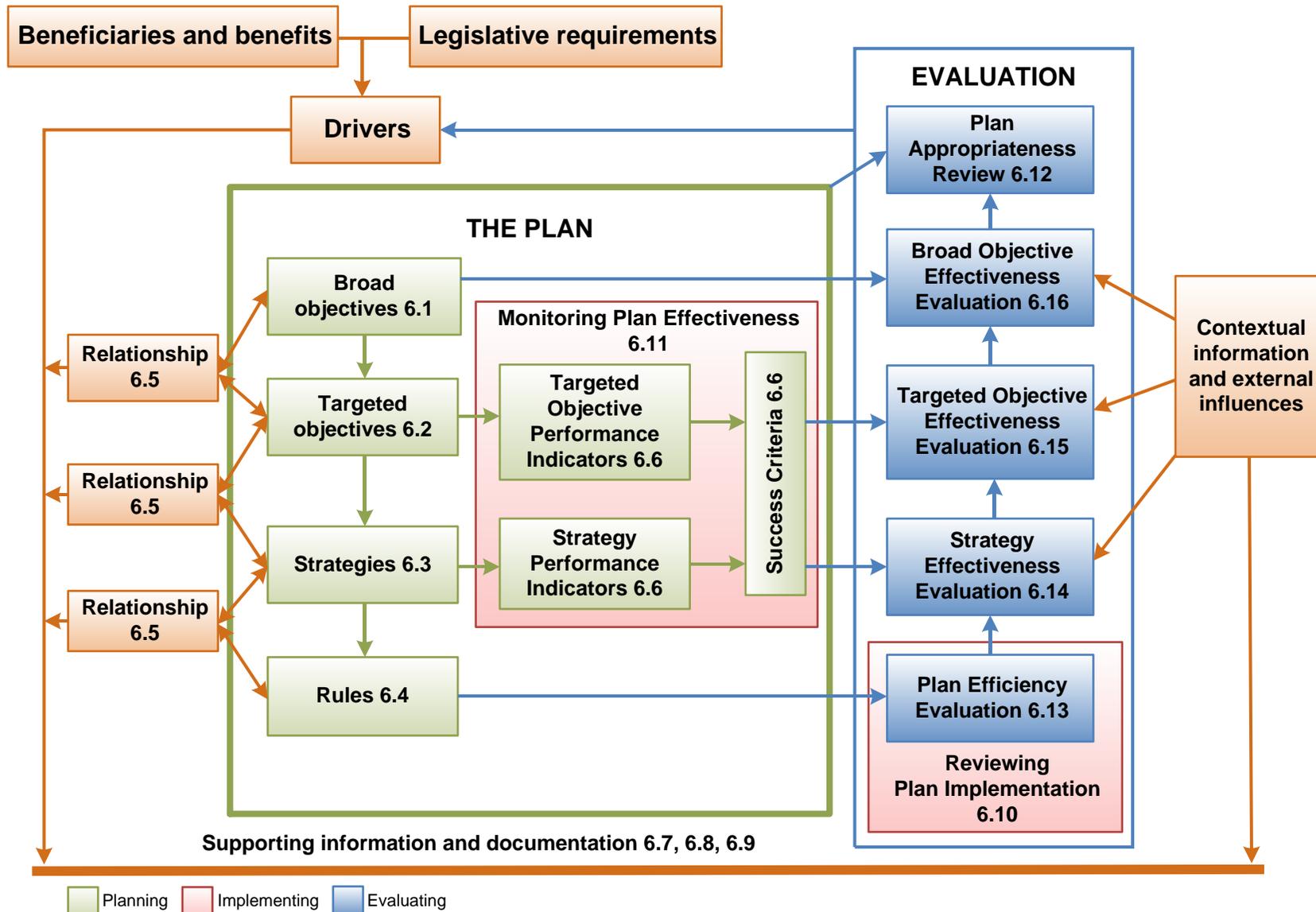
Figure 5 Plan and evaluation element interactions

Table 2 Steps in the establishment of objectives and the evaluation process

	Step	Planning cycle stage
6.1	Determine broad objectives	Planning
6.2	Determine targeted objectives and their relationships to broad objectives	
6.3	Determine water management strategies and their relationship to targeted objectives	
6.4	Determine plan rules and their relationship to strategies	
6.5	Define and document relationships	
6.6	Determine the strategy and targeted objective performance indicators (PIs)	
6.7	Prepare plan internal logic relationship diagrams and define evaluation boundaries	
6.8	Prepare a prioritised summary of PIs, success criteria and knowledge gaps	
6.9	Consolidate documentation supporting objective, strategy and PI relationships	
6.10	Review plan rule implementation	Implementing
6.11	Review PI monitoring progress	
6.12	Evaluate the appropriateness of the plan	Evaluating
6.13	Evaluate plan efficiency	
6.14	Evaluate the effectiveness of strategies	
6.15	Evaluate the effectiveness of targeted objectives	
6.16	Evaluate the effectiveness of broad objectives	
6.17	Evaluate the plan's success	
6.18	Consolidate evaluation documentation	

Note that colours relate listed steps to other diagrams in this document—orange indicates documentation required and other colours are as explained.

6.1 Determine broad objectives

Broad objectives are statements of desired outcomes to which the plan will contribute. At least one broad objective is required for each of the economic, social/cultural and environmental aspects of the plan's vision statement. All broad objectives must have at least one related targeted objective. While the broad objectives are not wholly within the influence of a plan's targeted objectives and strategies, there should be a definable conceptual relationship between targeted objectives and broad objectives that demonstrates a plan's expected contribution to the achievement of the broad objective. These relationships should be defined and documented (see 6.5 and 6.9).

Broad objectives are generally derived from legislative requirements and community drivers. They address a larger scale (spatially, temporally and scope of influence) than targeted objectives. Their assessment is based on a plan's contribution towards reaching a broad objective, rather than achievement of the broad objective itself. There are many factors external to a plan that influence the success of a broad objective, for example land use, management of externally controlled environmental water, commodity prices, climatic conditions and other natural resource programs.

6.2 Determine targeted objectives and their relationships to broad objectives

Targeted objectives are statements of the desired outcomes of a plan. At least one targeted objective is required for each broad objective. All targeted objectives must be linked to at least one plan strategy and the relationship between them defined and documented (see 6.5 and 6.9). Targeted objectives require PIs and success criteria to be developed (see 6.6).

Targeted objectives are generally derived from broad objectives and related water management drivers such as the Basin Plan 2012 and estuary management plans. They express the way in which the plan will contribute to the achievement of the related broad objectives. They generally address a smaller defined scale (either spatially, temporally or scope of influence) than broad objectives. Achievement is subject to water management activities that a plan can control through the implementation of plan strategies and is measured by the degree to which targeted objective PI success criteria have been met. Targeted objectives should be clearly defined, achievable, measurable and directly attributable to a plan's operation and outputs. They should also be time bound, specifying realistic time periods for achievement and/or starting points. They typically relate to specific water management activities, for example controlling river flows, setting commence- and cease-to-pump levels, maintaining water supply or groundwater access, and controlling the extraction of surface and groundwater.

6.3 Determine water management strategies and their relationship to targeted objectives

Water management strategies are statements of water management activities the plan will use to deliver the targeted objectives. Each strategy will have a rule or set of associated rules that may vary depending on the water source type or condition and the required management effort. At least one strategy is required for each targeted objective and all strategies must link to plan rules, with the relationship between them defined and documented (see 6.5 and 6.9). Strategies require PIs and success criteria to be developed (see 6.6).

Water management strategies are based on an expected response or benefit often underpinned by evidence or models (termed 'relationship' in this document). They express the way in which the plan will contribute to the achievement of the related targeted objectives. They will address an area of water management the plan directly controls via rules. Achievement is measured by the degree to which the related strategy PI success criteria have been met.

In some circumstances there may be definable knowledge gaps in the relationship between a strategy and a targeted objective. The water management strategy will still be relevant to include if it is based on a precautionary approach to delivering a plan outcome provided the relationship knowledge gap is identified and documented. For example a strategy that aims to protect a culturally or environmentally significant asset from

any detrimental impacts caused by water extraction may specify a setback distance for works based on a precautionary distance that is expected to provide the required level of protection. Although there may be knowledge gaps surrounding the exact water requirements of individual assets, applying a precautionary approach to setting a setback distance for all assets of that type results in a suitable and useable strategy.

Water management strategies may have been identified in plan supporting documents such as the risk assessments prepared for WRP areas. In these documents, the strategies may include water management activities and related activities such as knowledge gap risk mitigation; improving a plan's appropriateness; or activities that support plan implementation. Appendix 2 shows the how these risk assessments integrate with this objective setting and evaluation process.

6.4 Determine plan rules and their relationship to strategies

Plan rules are the mechanism by which the plan implements water management strategies. At least one plan rule or rule set is required to implement each strategy. Plan rules may be linked to multiple strategies. Often the rules implementing a strategy may be located in different parts of a plan. For example, a strategy aiming to allow trade will rely on the implementation of rules controlling licencing, dealings, metering, accounting, long-term annual average extraction, available water determinations, etc. Relationships between strategies and rules should have been documented during step 6.3 (see 6.5 and 6.9).

Plan rules are specific to the requirements of an individual plan area but the approach will be aligned with similar water source types or water management issues. Achievement is measured during plan performance reviews by the degree to which a particular rule has been implemented. This forms the basis of the plan efficiency evaluation that is used as contributing evidence to the strategy PI, and hence the assessment of the strategy's success.

6.5 Define and document relationships

Each relationship specified in steps 6.1–6.4 should have a related conceptual model that is based on evidence such as response models or other rationale that underpins the relationship. The strength of relationships should drive the selection of the most appropriate broad or targeted objective, strategy or rule, because without strong relationship foundations any evaluation of plan success will be limited. This refers to both evaluation sensitivity and the ability to complete each evaluation step. This process should generate a relationship documentation base, data prerequisites (e.g. identification of relevant assets to be protected, PIs, project plans), contextual information, known knowledge gaps and identified confounding and/or external factors that may influence result delivery (e.g. climatic variability). These should be clearly documented and stored for the long term (see 6.9 for further information).

As noted in 6.3, documents such as the risk assessments prepared for WRP areas may identify addressing specific knowledge gaps as a risk mitigation strategy. For more information regarding the risk assessment and objective setting integration, see Appendix 2.

6.6 Determine the strategy and targeted objective performance indicators (PIs)

PIs are a measure against which targeted objective and strategy achievements are assessed and the effectiveness of the plan evaluated. There must be at least one PI linked to each targeted objective and at least one linked to each strategy (see 6.2 and 6.3). A PI may link to several targeted objectives or strategies. PIs are documented in water sharing plans but additional information should be retained for the plan term. This should include background information, references to related performance indicator monitoring project plans and a table showing PI relationships to targeted objectives and strategies. PIs should have clearly defined and assessable success criteria (see 6.9), use reliable measures, and associated models should have a high degree of certainty.

PIs are an integral part of an objective or strategy, helping ensure they meet SMART requirements. They clearly indicate what is to be measured and the desired success criteria (e.g. benchmark, standard, baseline, or trend). PIs should focus on realistically anticipating the information and resources that will be required to

deliver meaningful and useable results. Where foundational information is limited, the knowledge gap should be identified. Selection of PIs and success criteria that are likely to be impacted by the knowledge gap should be limited until those knowledge gaps are resolved, or the risk of not delivering useable PI results within adequate time periods determined.

PIs for strategies are directly related to plan water management outputs such as issuing licences, allocating water, providing flows and enabling trade.

PIs for targeted objectives should identify whether observed changes relevant to the objective are due to the influence of the plan using strategy PIs as a foundation. Some objective PIs may not provide complete results within a plan's term or for a particular plan area but are still relevant and can be included as they provide progress information that can be used to report a targeted objective's contribution towards the achievement of a broad objective.

Supporting documentation should be prepared or linked to each PI covering expected delivery timeframes, likely sensitivity and result confidence. Resourcing requirements, limitations and external influencing factors should also be recorded and may be provided by linking relevant PI monitoring project plans.

6.7   Prepare plan internal logic relationship diagrams and define evaluation boundaries

To ensure that the broad and targeted objectives, strategies and rules are coordinated, linked and relationships are transparent, plan internal logic relationship diagrams showing these interactions should be developed based on the results of the preceding steps and the layout example in Figure 6. There should be three diagrams prepared, one each for economic, social/cultural and environmental outcome. It is important to create this diagram from two starting points: the objectives at the top of the tree and the rules at the bottom. This process will ensure the identification of any misaligned, disconnected or unaccounted for plan components. If any problems are identified, they should be resolved and either new strategies or objectives added in accordance with the preceding steps or the rationale for excluding them documented (e.g. lack of foundational information, resourcing, etc.). These diagrams support the cyclic development of strategies and objectives and are particularly useful for understanding the operation of existing plans. They will also be used in the plan's appropriateness evaluation (step 6.12) to analyse the plan's internal logic or structure.

Managing expectations surrounding plan outcomes should be considered in this step. The plan internal logic relationship diagrams assist by providing a clear structural basis for the management of the following:

- Rule-to-strategy-to-targeted-objective linkages address expectations that may arise during plan development by clearly identifying how the desired outcomes will be achieved or what achievement contribution will be delivered. A plan can only contribute to objective achievement through the control of water management activities.
- External influences occurring during a plan's term are not under the control of that plan and so may impact plan outcome delivery. Plan internal logic relationship diagrams may be used during the evaluation process to show where and how external influences have limited or enhanced both plan outcome and evaluation delivery.
- If rules are reviewed or additional rules are proposed during a plan's term, the plan internal logic relationship diagrams will allow potential impacts on linked strategies (and hence associated targeted objective outcome delivery) to be quickly determined and considered during the process. This has flow on benefits for plan evaluation by showing where and how plan rule changes have enhanced or limited plan strategies and evaluation delivery.

6.8   Prepare a prioritised summary of PIs, success criteria and knowledge gaps

A summary of success measures, including delivery timeframes and accountability for each PI, should be prepared as plan supporting material together with a table showing PI relationships to targeted objectives and strategies. The latter may become plan content.

Available resources are likely to limit how much work can be undertaken to inform the performance indicators or knowledge gaps. These decisions are likely to be made externally to this objective setting process. By preparing a prioritised list of PIs for an individual plan (or across a set of plans of a similar type that specify the same PIs and success criteria) this information can be used to assist resourcing decisions and ensure limited resources are directed towards the most critical elements. This summary should clearly show those PIs most critical for informing each strategy and targeted objective and may refer to additional information such as project plans or resourcing requirements.

Similarly any foundational knowledge gaps that have been identified in relationships or for performance indicators in steps 6.2–6.6 should also be included in the summary along with any additional relevant information. These should be prioritised based on risk to evaluation delivery.

6.9   Consolidate documentation supporting objective, strategy and PI relationships

Supporting documentation should have been prepared and/or sourced for each identified relationship in 6.5, for PIs at step 6.6 and 6.8 and for plan internal logic at step 6.7. This may be plan-specific or relate to a number of plans of a similar type that rely on the same objectives, strategies and/or performance indicators. If a standard set of objectives are applied to a group of plans it is particularly important to document any individual variations applied to a single plan within the set, along with the material used for the majority.

A summary of all related information should also be prepared and retained to ensure access to material is maintained throughout the term of a plan and is readily available for the evaluation stage. Any additional information that is collected or generated during the plan term should be stored with the initial development stage material. This may include updated relationship foundation material, project plans, PI results, review of plan rule implementation reports, etc.

Consideration should be given to selecting the most appropriate and accessible form of storage given plan term length and potential for changes during that period (including staffing, locations, departmental structures), information diversity, and future access requirements. The current DPI standard is HP Content Manager 9.
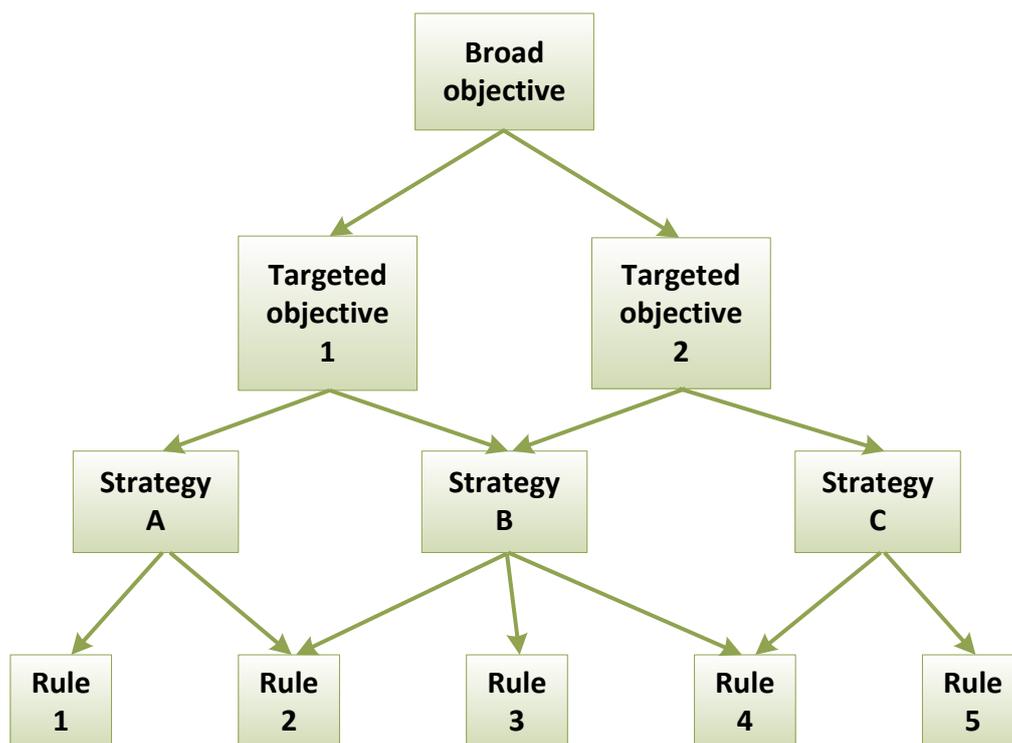
Figure 6 Plan internal logic relationship diagram example

6.10 Review plan rule implementation

Plan implementation reviews (previously called audits and a current requirement of s.44 of the WMA 2000) examine whether the rules of a plan were implemented correctly and within the required timeframes. The frequency of reporting may be determined by related legislation and agreements, for example the WMA 2000 specifies no more than five-year intervals for WSPs and the Basin Plan 2012 requires annual reporting. Implementation reviews may also report on the progress of monitoring required for strategy and targeted objective PIs (see 6.11). However, they do not attempt to assess the outcomes or effectiveness of plans in achieving objectives or appropriateness of the provisions within plans. Several plan implementation reviews may be undertaken during the term of a plan. An internal NSW Department of Industry process for conducting implementation reviews has been developed for all water sharing plans. Reviews are currently conducted at years five and eight of WSP terms (see www.water.nsw.gov.au/water-management/water-sharing/auditing-and-reporting for examples).

Analysis should be conducted at a clause level and classify the degree and timeliness of implementation for each plan rule or rule set as 'not required', 'implemented', 'sometimes implemented', or 'not implemented'. Assessment may use evidence from a variety of sources, including annual compliance reports from Water NSW, General Purpose Water Accounting Reports (NSW Department of Industry), water trading, usage and flow statistics, and other relevant data. Reporting and data collation templates have been established for WMA 2000 requirements and will be developed for Basin Plan 2012 requirements. These reviews are used as the foundation for evaluating plan efficiency (see 6.13).

6.11 Review PI monitoring progress

A PI monitoring progress review examines whether progress is being made towards meeting PI success criteria delivery timeframes. Although there is no specified reporting under the WMA 2000, progress may be reported with plan rule implementation reporting (see 6.10). The Basin Plan 2012 has varying PI progress reporting requirements including Schedule 12 items listed below.

- Item 6 Social cultural PIs (annual reporting)
- Items 8 and 9 Environmental watering plans (annual and five-yearly)
- Items 12 and14 Water quality and salinity management plans (five-yearly)
- Item 15 Water trade (five-yearly).

Assessments may be undertaken or obtained from varying sources as summarised in 6.8. These reviews guide effectiveness evaluation (see 6.14 and 6.15). It is relevant to note that plan evaluation will commence when approximately 80% of a plan's term has occurred, thus PI monitoring programs need to report results or progress prior to this point to inform the evaluation.

6.12 Evaluate the appropriateness of the plan

The first element of an evaluation looks at a plan's structure and uses information regarding a plan's scale and scope and internal logic or linkages to make an assessment. Scale and scope assessments look at the relationship of a plan to neighbouring plan areas and the level of management intensity within a plan. If the objective setting and evaluation process has been followed to this point (see 6.7) an internal logic assessment will be quickly achieved.

The extent of the following aspects should be addressed.

Plan scale and scope

- Types of water sources (regulated river, unregulated river, groundwater) managed by a plan and the area the plan covers
- Suitability of the level of management applied (note risk assessments prepared for WRP areas under the Basin Plan 2012 or otherwise completed pre and during plan term are a useful tool for assessing suitability of management intensity)
- Connectivity with other water sources including relationships both within and outside the plan area, strength of connectivity, likely impacts and management efficiencies

Plan internal logic

- Relationship between key elements within a plan document including vision, objectives, strategies, rules and PIs (see 6.1, 6.2, 6.3, 6.4, and 6.6 for details). These elements may be set as requirements of controlling legislation or other agreements (see section 3. Drivers for setting objectives)

- Availability and extent of documentation supporting plan internal logic relationships (see 6.5, 6.7, and 6.9)

Resulting data, analyses and supporting documentation should be collated. Results of appropriateness assessments should be presented in report card format together with efficiency and effectiveness results as an overall plan evaluation. See 6.18 for overall evaluation reporting information and report format guidelines.

6.13 Evaluate plan efficiency

The second element of an evaluation looks at plan efficiency. It builds on information collected for plan rule implementation reviews across the whole plan term (see 6.10) to determine how efficiently the plan operates to deliver expected outputs (such as issuing licences, allocating water, providing flows and enabling trade) and the extent to which the delivery of the rules has been optimised. Plan efficiency may be influenced by a number of factors, including:

- clarity of plan rules

- resources and supporting processes available to implement plan rules

- changes in legislation and government policy during the term of a plan

- external factors such as extreme climatic conditions.

Efficiency analysis maps key implementation processes and benchmarks them against best practice to determine if there better ways of achieving the same result. The assessment examines the reasons and circumstances surrounding plan rules not being implemented or the partial or inefficient implementation of plan rules. It may recommend the rules or supporting processes be improved, revised, or an alternative planning approach be considered. Amendments made to a plan, or similar plans may provide information regarding inefficiencies that have been detected and resolved during a plan term. Information may be available from various sources including a plan's historical amending notes, similar plans for the water source type, documents used for the preparation of plan implementation reviews, and specific studies undertaken to assess key information gaps in the plan or to expand the knowledge base for a specific water management issue. These efficiency assessments contribute to the evaluation of plan strategies (see 6.14).

Resulting data, analyses and supporting documentation should be collated. Results of efficiency assessments should be presented in report card format together with appropriateness and effectiveness results as an overall plan evaluation. See 6.18 for overall evaluation reporting information and report format guidelines.

6.14 Evaluate the effectiveness of strategies

The third element of an evaluation looks at plan effectiveness. This is a three-stage process, progressively building to provide an overall plan effectiveness result. Strategy effectiveness is the first stage of an effectiveness assessment and is based on plan rule implementation efficiency results (see 6.13) and the results of strategy PIs against their success criteria (see 6.6 and 6.8). It would be beneficial to assess these issues in a collaborative and/or consultative manner with those actively involved in implementation and management activities.

Strategy effectiveness evaluation contributes to targeted objective evaluation. If results show PI success criteria have been met and related plan rules implemented, the strategy has been effective and the results can be used to assess the effectiveness of the related targeted objective. If the rules have been successfully implemented, but the strategy success criteria have not been met, the reasons why need to be determined. There may be a variety of factors that have influenced success and some of these may have been predicted in step 6.5. Others may include unforeseen external influences, extremes of climatic ranges, a weak or inappropriate relationship between the rule and strategy, or poor PI selection.

The program logic approach builds evaluation results incrementally with evaluation ceasing if an adequate foundation is not available. **Where the rules have not been implemented the evaluation should not progress to examining the strategy PI success criteria**. If the rules have been implemented and the success criteria have not been met because of an underlying inadequate foundation, this should prompt a review of either the rules or the PI. Conversely there may be other variables that have resulted in not meeting the success criteria and this should not trigger review. The tables provided in Appendix 3 provide guidance for decisions concerning the quality and use of available information.

Table 3 sets out the level of contribution a particular strategy will have to the evaluation of a related targeted objective dependant on the level of rule implementation and achievement of PI success criteria. This table demonstrates the importance of both rule implementation and the selection of strategy PIs that will deliver results within reporting time frames.

Resulting data, analyses and supporting documentation should be collated. Results of strategy effectiveness assessments should be presented in report card format together with appropriateness and effectiveness results as an overall plan evaluation. Strategy PI results should be prepared separately and may be included as an evaluation report appendix.

Table 3 Strategy effectiveness assessment and level of contribution to targeted objective evaluation

Information progression (each strategy)	Strategy PI success criteria— met	Strategy PI success criteria— shows progress	Strategy PI success criteria— not met
Rules implemented	Progress to targeted objective evaluation	Progress (partial result) to targeted objective evaluation	No further contribution
Rules partially implemented	Progress (partial result) to targeted objective evaluation	Progress (partial result) to targeted objective evaluation	No further contribution
Rules not implemented	No further contribution	No further contribution	No further contribution

6.15 Evaluate the effectiveness of targeted objectives

Evaluation of targeted objective effectiveness is the second stage of the effectiveness evaluation and is based on the results of targeted objective PIs against their success criteria (see 6.6 and 6.8) and the evaluation of strategy effectiveness (see 6.14).

Targeted objective effectiveness evaluation contributes to broad objective evaluation. If results show PI success criteria have been met and related strategies have been successful, the targeted objective has been effective and the results can be used to assess the contribution the plan has made towards the achievement of the related broad objective. If the strategies have been successfully implemented, but the targeted objective success criteria have not been met, the reasons why need to be determined. There may be a variety of factors that have influenced success and some of these may have been predicted in step 6.5. Others may include unforeseen external influences, extremes of climatic ranges, a weak or inappropriate relationship between the strategy and targeted objective, or poor PI selection.

The program logic approach builds evaluation results incrementally with evaluation ceasing if an adequate foundation is not available. **Where the strategies have not been implemented the evaluation should use caution when examining the targeted objective PI success criteria, or not proceed if there is only one strategy for the targeted objective**. If the strategies have been implemented and the success criteria have not been met because of an underlying inadequate foundation, this should prompt a review of either the strategy or the PI. Conversely there may be other variables that have resulted in not meeting the success criteria and this should not trigger review. A targeted objective with more than one strategy may still be able to be evaluated if one strategy is not implemented, or the strategy success criteria are not met. The tables provided in Appendix 3 provide guidance for decisions concerning the quality and use of available information.

Table 4 sets out the level of contribution a particular targeted objective will have to the evaluation of the related broad objective dependant on the strategy effectiveness assessment and achievement of targeted objective PI success criteria. This table demonstrates the importance of both strategy implementation and the selection of targeted objective PIs that will deliver results within reporting time frames.

Resulting data, analyses and supporting documentation should be collated. Results of targeted objective effectiveness assessments should be presented in report card format together with appropriateness and effectiveness results as an overall plan evaluation. Targeted objective PI results should be prepared separately and may be included as an evaluation report appendix.

Table 4 Targeted objective effectiveness assessment and level of contribution to broad objective evaluation

Information progression (each targeted objective)	Targeted objective PI success criteria - met	Targeted objective PI success criteria – shows progress	Targeted objective PI success criteria – not met
Strategy - effective	Progress to broad objective evaluation	Progress (partial result) to broad objective evaluation	No further contribution
Strategy - partially effective	Progress (partial result) to broad objective evaluation	Progress (partial result) to broad objective evaluation	No further contribution
Strategy - not effective	No further contribution	No further contribution	No further contribution

6.16 Evaluate the effectiveness of broad objectives

Evaluation of broad objectives is the third stage of the effectiveness evaluation and builds on the effectiveness assessment of targeted objectives (see 6.15). Broad objectives are statements of desired outcomes to which the plan will contribute and as such are not wholly within the influence of a plan's targeted objectives and strategies. Their assessment is based on a plan's contribution towards reaching a broad objective, rather than achievement of the broad objective itself. In evaluating their effectiveness, both the targeted objective effectiveness results and external factors and influences should be assessed using the defined conceptual relationship that should have been documented during objective development (see 6.2). The tables in Appendix 3 provide guidance for decisions concerning the quality and use of available information.

Resulting data, analyses and supporting documentation should be collated. This is particularly important for contextual information and external influences that have occurred during a plan's term. Results of broad objective effectiveness assessments should be presented in report card format together with appropriateness and effectiveness results as an overall plan evaluation. (see 6.18 for overall evaluation reporting information and report format guidelines).

6.17 Evaluate the plan's success

Overall plan evaluation brings together the results of the three evaluation elements (appropriateness, efficiency and effectiveness) to provide a comprehensive picture of the success of a plan. Evaluation of a plan's success combines quantitative assessments of key measurable PIs set for strategies and targeted objectives, with qualitative assessment of appropriateness and efficiency plan components.

A successful plan will:

- still be **appropriate** for its intended purpose (e.g. the sharing of water within a defined water management area)
- have been implemented as expected and as **efficiently** as possible
- have been **effective** in achieving its objectives (as measured against predetermined success criteria).

The overall plan evaluation should be prepared as the introductory and summary section to the report cards prepared in previous steps and be delivered in time to provide feedback into the planning cycle at plan term review or at other predetermined reporting times. Evaluation reports can act as drivers for the improvement of plans or for the development of new plans. An evaluation provides an overview of whether changes may be needed to a plan, whether improved processes are required to fully implement a plan's provisions, as well as recognising ongoing successful plan components.

Evaluation reports may also provide information to external drivers and other processes for improved water resource planning and management, and contribute to external reporting requirements under NSW and Commonwealth legislation and agreements including the Basin Plan 2012.

6.18 Consolidate evaluation documentation

Supporting evaluation documentation should be prepared and information links recorded for each evaluation stage. Contextual information and identified confounding and external factors that have influenced evaluation delivery should also be recorded. Consideration should be given to the use of departmental document storage (HP Content Manager 9, etc.) to ensure access to material is maintained throughout the term subsequent plans and is readily available for future plan development and evaluation.

Appendix 1 Examples of the application of Figure 5

The first figure in this Appendix is an explanatory guide to the second and third figures, which are simplified examples of Figure 6 that show one ground and one surface water environmental objective. It is expected that as these guidelines are tested and used, this Appendix will be updated to provide worked examples for both groundwater and surface water objectives covering the triple bottom line reporting areas: economic, social/cultural and environmental outcomes.

Figure A-1   Explanation of terms used in Figure 5

Legislative Requirements
NSW *WMA 2000,* Commonwealth *Water Act 2007, Basin Plan 2012,* Long Term Water Plan

Benefits
Ecosystems that depend on groundwater for part or all of their life cycle are protected and maintained in the long term contributing to biodiversity and other life supporting ecosystem functions.

Beneficiaries
1) Vegetation communities dependent on the presence of subsurface groundwater
2) Native fauna dependent on healthy GDEs to provide a food source and habitat.
3) People of NSW (healthy ecosystems, cultural and recreational association with GDEs).

Drivers
Community needs, other influences

EVALUATION

Plan Appropriateness review
1) Was the plan's scale and scope appropriate?
2) Was the plan's internal logic well structured and supported by adequate documentation?
3) Were local scale management decisions

Relationship
Protecting and maintaining the ecological condition of GDEs will contribute to the protection of environmental values of the groundwater sources within the plan area for the ongoing support of dependent flora, fauna and ecological diversity.

THE PLAN

Broad Objectives
Contribute to the protection and maintenance of environmental values and condition of the groundwater sources in the plan area

Broad Objective Effectiveness Evaluation
Assuming plan rules were implemented and strategy and targeted objective success criteria were met, how much contribution was made towards the achievement of the broad objective?

Monitoring Plan Effectiveness

Targeted Objective Performance Indicators
1) Change in distribution (extent) of GDEs during the plan term
2) Change in native GDE vegetation diversity during the plan term
3) Change in native GDE vegetation health during the plan term.

Success Criteria
1) There is no decline in area (extent) of GDEs during the plan term compared to the extent mapped at plan commencement
2) There is no loss of native GDE vegetation diversity as measured by the method specified in the supporting project plan during the plan term compared to the diversity known at plan commencement
3) There is no loss of native GDE vegetation health as measured by the method specified in the supporting project plan compared to the health known at plan commencement.

Contextual Information
Information on other environmental, social and economic variables e.g. change in catchment condition, water use patterns, land use change, climate, extreme events, improved information to fill knowledge gaps and improve relationship information

Targeted Objectives
Ecological condition of high priority GDEs such as vegetation communities dependent on the presence of subsurface GW is protected and maintained over the long term

Targeted Objective Effectiveness Evaluation
Assuming plan rules were implemented, and the strategy success criteria were met, were the targeted objective performance indicator success criteria met?

Relationship
Minimising extraction impacts at a local and water source scale in both the short and long term is expected to provide adequate protection for GDEs and their groundwater connectivity.

Strategies
1) Manage potential extraction impacts on water levels at a local scale for areas where there is a higher demand and a higher level of risk
2) Minimise extraction impacts on water levels at a water source scale
3) Minimise extraction impacts on water levels over the longer term

Strategy Performance Indicators
1) Extent of cones of depression in areas where local scale management has been applied to mitigate risk to the groundwater source from extraction.
2) Change in drawdown during the plan term
3) Annual comparisons of rolling average extraction with the LTAAEL during the plan term
4) Change in groundwater levels over the long term.

Success Criteria
1) Cones of depression did not impinge on distance restrictions for GDEs within the local impact management area.
2) Drawdown has not declined below specified limits during the plan term
3) Extraction (based on rolling averages) did not exceed the LTAAEL during the plan term and corrective action was taken if required.
4) Change in groundwater levels over the long term does not impact GDE access to groundwater or has not declined beyond specified levels determined at plan commencement.

Strategy Effectiveness Evaluation
Assuming plan rules were implemented, were the strategy performance indicator success criteria met?

Relationship
Although the specific groundwater requirements of individual GDEs such as degree and timing of dependence have not yet been determined, it is expected that the application of rules based on precautionary principles can be effective in managing groundwater connectivity.

Rules
a) Specific rules for new bores near GDEs (setback distances, construction standards, application of discretionary conditions).
b) Set and manage extraction to a long term average annual extraction limit
c) Risk based management of extraction in localised areas (Local impact areas, orders under the *WMA 2000)*

Plan Efficiency Review
1) Were the plan rules implemented?
2) Were any amendments made in response to efficiency gains or changes in external drivers (e.g. new legislation)?
3) Were plan specified studies or reviews undertaken and new information incorporated during the plan term?
4) Did support processes operate efficiently?
5) Is there an efficient process to identify medium and high value water sources?

Reviewing Plan Implementation

Supporting information and documentation (including assumptions and key knowledge gaps)

☐ Planning ☐ Implementing ☐ Evaluating

Figure A-2   Groundwater environmental objective example

Legislative Requirements
NSW *WMA 2000,* Commonwealth *Water Act 2007, Basin Plan 2012,* Long Term Water Plan

Drivers
Community needs, other influences

Benefits
The resilience of fish communities is protected and maintained in dry periods and is indicative of the protection of biodiversity and other life supporting ecosystem functions. Changes that are expected to be provided by the plan to the plan area and its economic, social and environmental dependants

Beneficiaries
1) Native fish communities and their habitats and ecosystems.
2) People of NSW (healthy ecosystems, cultural and recreational association with water).

EVALUATION

Plan Appropriateness review
1) Was the plan's scale and scope appropriate?
2) Was the plan's internal logic well structured and supported by adequate documentation?
3) Were local scale management decisions

Relationship
Native fish are an important part of functional aquatic ecosystems. Protecting and maintaining their distribution and population structures contributes to the protection of the ecological condition of the water source.

THE PLAN

Broad Objectives
The ecological condition of this water source and its dependent ecosystems (instream, riparian and floodplain) are protected and maintained over the long term.

Broad Objective Effectiveness Evaluation
Assuming plan rules were implemented and strategy and targeted objective success criteria were met, how much contribution was made towards the achievement of the broad objective?

Relationship
Minimising extraction impacts at a local and water source scale in both the short and long term, and during periods of low flow, is expected to provide adequate protection for native fish communities by maximising the refugial capacity of pools and maintaining longitudinal connectivity within and between water sources.

Targeted Objectives
Protect and maintain the population structure of native fish in unregulated water sources.

Monitoring Plan Effectiveness

Targeted Objective Performance Indicators
1) Change in distribution (extent) of native fish populations in relevant water sources during the plan term
2) Change in fish community age structure for targeted species including age class continuity.

Success Criteria
1) There is no decline in distribution of native fish populations in targeted water sources during the plan term compared to the extent mapped at plan commencement.
2) There is no decline in fish community age structure during the plan term compared to the structure determined at plan commencement.
3) The fish community age structure shows recruitment and sustainable age class continuity during the plan term.

Targeted Objective Effectiveness Evaluation
Assuming plan rules were implemented, and the strategy success criteria were met, were the targeted objective performance indicator success criteria met?

Strategies
1) Manage potential extraction impacts on pool water levels during low flow periods by limiting drawdown (this protects a pool's refugial capacity).
2) Minimise extraction impacts on water levels at a water source and inter water source scale (This protects the longitudinal connectivity between water sources)
3) Minimise extraction impacts on water levels over the longer term

Strategy Performance Indicators
1) Extent of pool / gauge based CTP drawdown beyond natural drying in times of low flow during the plan term (in water sources assessed as high and medium ecological value)
2) Change in entitlement in defined local areas
3) Annual comparisons of rolling average extraction with the LTAAEL during the plan term

Success Criteria
1) There is a less than 20% difference between zero / low flow period frequency/durations under existing rules compared to the modelled 'without development' scenario.
2) There is no increase in entitlement in the specified local areas beyond that for basic landholder rights or domestic and stock purposes.
3) Extraction (based on rolling averages) did not exceed the LTAAEL during the plan term and corrective was action taken if required.

Strategy Effectiveness Evaluation
Assuming plan rules were implemented, were the strategy performance indicator success criteria met?

Contextual Information
Information on other environmental, social and economic variables e.g. change in catchment condition, water use patterns, land use change, climate, extreme events, improved information to fill knowledge gaps and improve relationship information

Relationship
In upstream water sources where natural drying occurs more frequently and water demand is less, cease to pump rules based on visible flow are applied. Greater management intensity is applied in downstream water sources where there is higher demand, more reliable flows and connectivity protection requirements are greater.

Rules
a) 'No visible flow' based cease to pump rules (upstream water sources).
b) Gauge based cease to pump rules (downstream water sources)
c) No extraction from pools when flow falls to cease to pump limits
d) Risk based management of extraction in localised areas (dealing (trade) rules limiting growth in entitlement in specific areas*).
e) Set and manage extraction to a long term average annual extraction limit

Plan Efficiency Review
1) Were the plan rules implemented?
2) Were any amendments made in response to efficiency gains or changes in external drivers (e.g. new legislation)?
3) Were plan specified studies or reviews undertaken and new information incorporated during the plan term?
4) Did support processes operate efficiently?
5) Is there an efficient process to identify medium and high value water sources?

Reviewing Plan Implementation

Supporting information and documentation (including assumptions and key knowledge gaps)

☐ Planning ☐ Implementing ☐ Evaluating
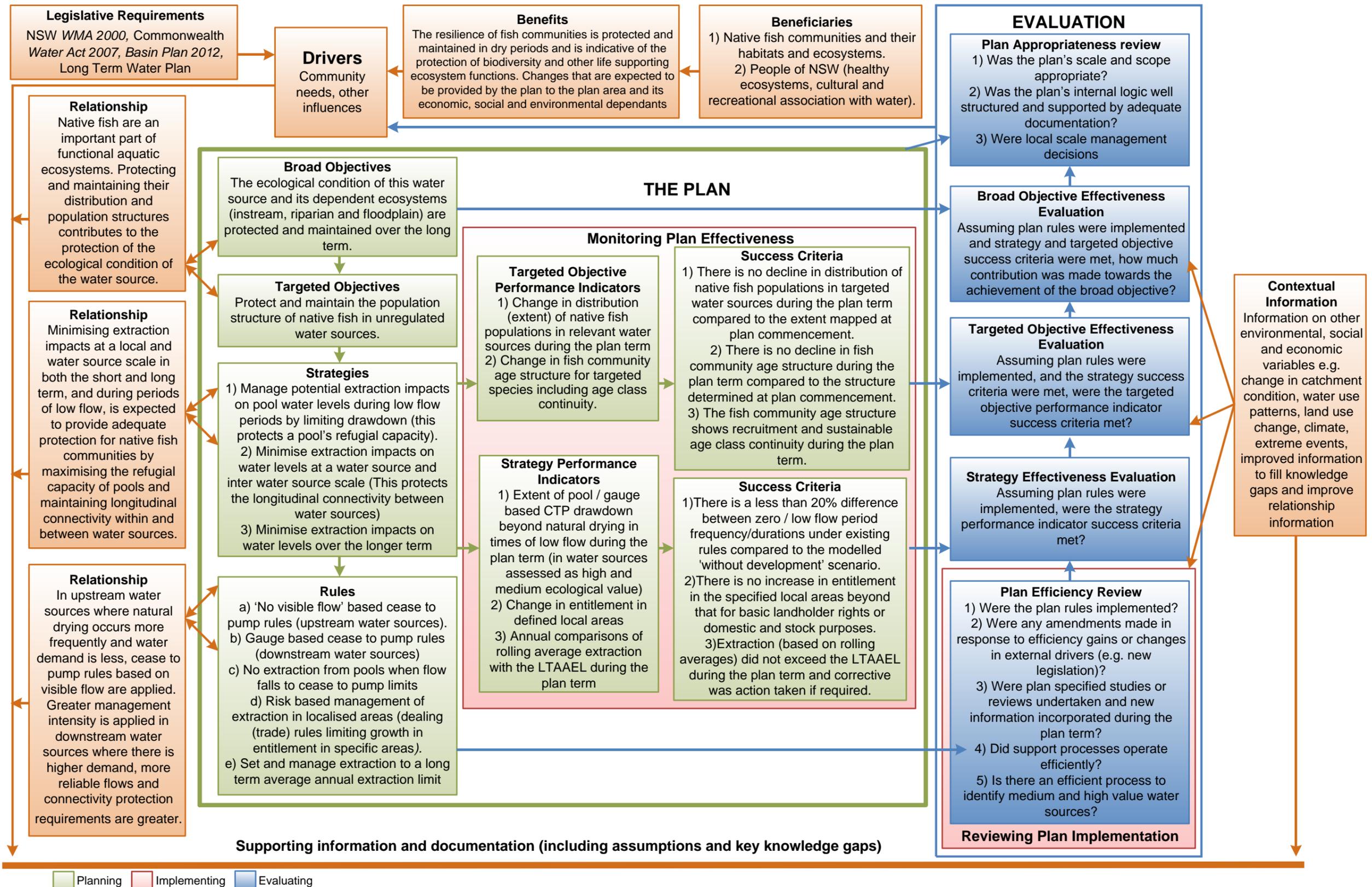
Figure A-3 Surface water environmental objective example

Appendix 2 Integration of objective setting and risk assessments for WRP areas

There are several points where risk assessments integrate with this process for setting and evaluating plan objectives. These are shown in the diagram below, and are as follows:

- Where risk mitigation strategies seek to improve the appropriateness of a plan through relevant objective setting and performance monitoring, they are objective setting drivers and inform plan evaluation.
- Where risk mitigation strategies are water management activities they can be used directly as strategies in the objective setting and evaluation process or inform rule choice.
- Where risk assessments define areas at high or moderate risk, this can inform the selection of appropriate rules.
- Where risk mitigation strategies address knowledge gaps, they can be used to improve the conceptual models described in the relationship boxes which in turn informs evaluation.
- Observed change in risk level identified in reviews of risk assessments throughout the plan term can inform both strategy effectiveness and plan appropriateness evaluation.
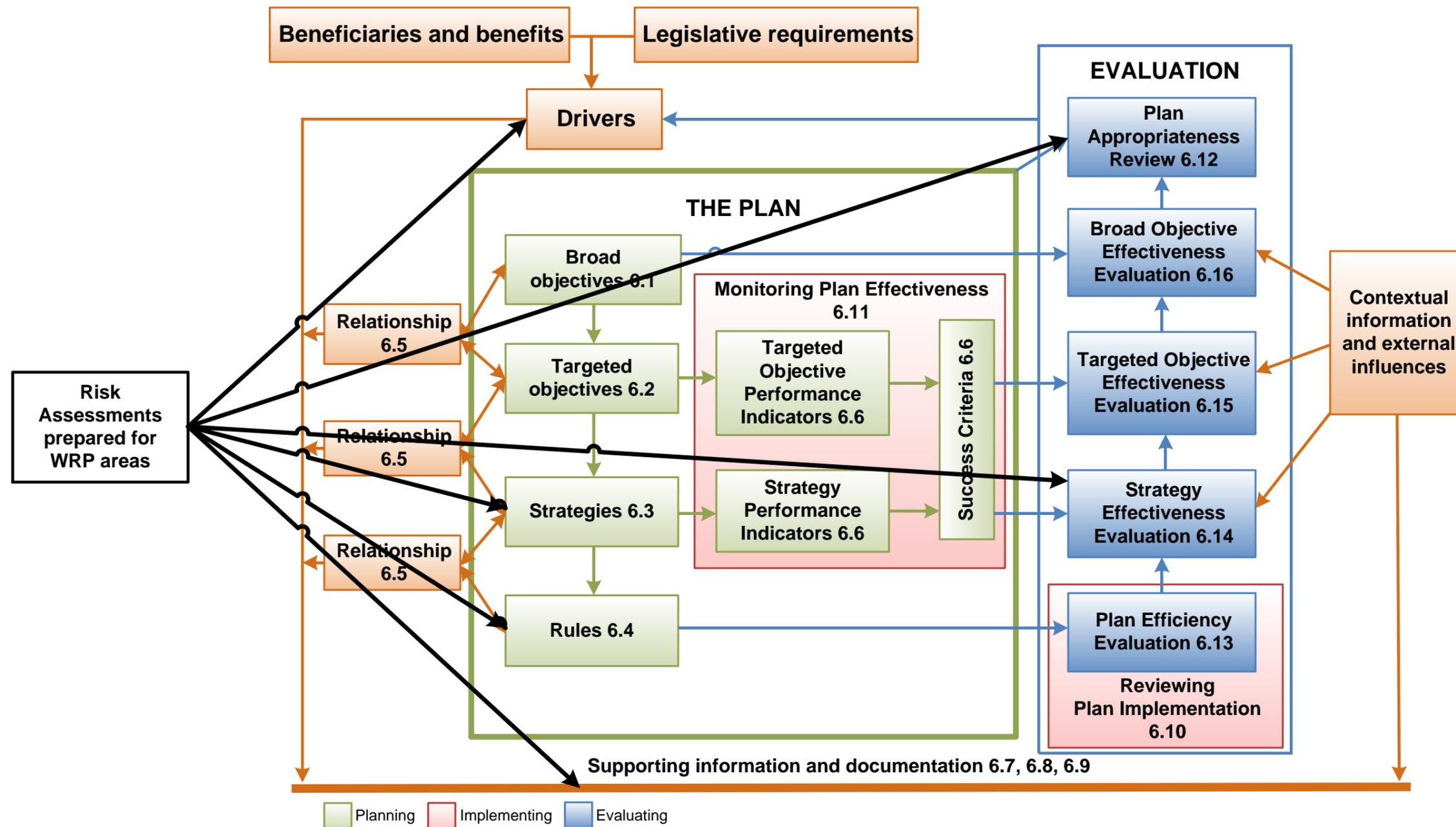
Figure A-4 Relationship between water resource plan risk assessments and Figure 5

Appendix 3 Guides to evaluation decision-making

How to use this appendix

The layout of this Appendix corresponds to each of the three report cards and the performance indicator result summary table that should be created for each evaluation report. Detailed findings and further information should be kept separately to the report as the report presents a summary of findings. Each of the following sections explains how to apply the evaluation assessments, particularly those that apply to assigning a ranking or category. For ease of comprehension this Appendix should be read in conjunction with a completed or example evaluation report. Also, the column headings appearing in each report card or result summary have been used in this Appendix and are cross referenced throughout the text in bold for clarity.

Appropriateness report card

An appropriateness report card presents a summary of the appropriateness evaluation findings or results. An appropriateness evaluation is an assessment of whether the scale, scope, prioritisation and internal logic of a plan were and are still suitable for the circumstances of the plan.

Appropriateness report cards should be set with the column headings shown in Table A-1.

Table A-1   Appropriateness report card headings

Evaluation criteria	Evaluation question	Evaluation indicator	Appropriateness evaluation findings	Performance	Recommendation	Priority

The **Evaluation criteria, Evaluation question, Evaluation indicator** columns are likely to be standard for all evaluation reports as the appropriateness criteria do not tend to change when plan content changes. The **Appropriateness evaluation findings** column should contain a summary of result information. The **Performance, Recommendation** and **Priority** columns should be populated based on the following guide.

The **Performance** column is an assessment of how effectively the plan met the evaluation question. Each **Appropriateness evaluation finding** should be given a **Performance** rating as set out in Table A-2. These are subjective assessments that may have some category overlap and care should be taken to apply the rating consistently for a report or series of reports. If the evaluator is unable to reach a finding due to inadequate data then the grey category should be used.

Table A-2   Appropriateness report card headings—Performance column

Performance (Appropriateness Evaluation Finding Performance)	
🟢	Satisfactory
🟠	Opportunity for some improvements
🔴	Opportunity for major improvements
⚪	Not assessable due to inadequate information

A **Recommendation** should be provided for each orange, red or grey **Performance** assessment to guide future plan refinement. Each **Recommendation** should be assigned a **Priority** rating. Table A-3 shows categories used in the **Priority** column.

Table A-3   Appropriateness report card headings—Priority column derived from tables A-4, A-5 and A-6

Priority (Recommendation priority)
High
Medium
Low

Priorities are determined by following a risk-assessment approach based on an expected likelihood and consequence. Tables A-4, A-5 and A-6 are used together to determine each recommendation **Priority**. These tables are also relevant to efficiency and effectiveness report cards.

Table A-4   Appropriateness report card headings—Priority column, likelihood categories

Likelihood If the recommendation is not addressed (or has not been addressed by other management strategies or controls), what is the likelihood of consequences occurring?	
Highly Likely/Certain:	The consequence is certain to occur, reoccur, or will probably occur in most circumstances.
Likely:	The consequence should or might occur at some time.
Unlikely:	The consequence may or may not occur at some time.

Table A-5   Appropriateness report card headings—Priority column, consequence categories

Consequence If the recommendation is not addressed (or has not been addressed by other management strategies or controls), what is the likely impact and how much effort will be required to manage it?		
Minor	**Moderate**	**Significant**
The consequences can be absorbed through non-regulatory action or by management effort.	With non-regulatory action and proper management the consequences can be endured without significant financial, legal, political, social or environmental impact.	The consequences have the potential to lead to: • significant loss or difficulties for water users • significant administrative or financial cost to the NSW Government • high political consequence • high legal risk • high social, environmental or wider economic impact.

Table A-6   Appropriateness report card headings—Priority column, priority rating determination

Recommendation Priority			
Likelihood	Consequence		
	Minor	**Moderate**	**Significant**
Highly Likely/Certain	Medium	High	High
Likely	Low	Medium	High
Unlikely	Low	Low	Medium

Efficiency report card

An efficiency report card presents a summary of the efficiency evaluation findings or results. An efficiency evaluation is an assessment of the level of implementation of plan rules, and whether their implementation was optimised. This element focusses on the water management activities required to implement a plan's rules and the resulting outputs (e.g. volumes of water made available, flows provided, water trading statistics). Efficiency report cards should be created with the column headings shown in Table A-7.

Table A-7   Efficiency report card headings

Plan part	Plan rule groups	Evaluation question	Efficiency evaluation findings	Performance	Recommendation	Priority

The **Plan part** and **Plan rule groups** columns can be populated directly from the plan. **The Evaluation question** column is populated based on the preceeding columns. The **Efficiency evaluation findings** column may be sourced from a combination of plan review reports and evaluation assessment. The **Performance** column is an assessment of how effectively the plan met the evaluation question. Each **Efficiency evaluation finding** should be given a **Performance** rating as set out in Table A-8. These are subjective assessments that may have some category overlap and care should be taken to apply the rating consistently for a report or series of reports. If the evaluator is unable to reach a finding due to inadequate data then the grey category should be used. Note **Efficiency evaluation findings** may conclude that a scheduled event has not occurred either as planned or as a result of triggers not reached. In these cases adequate explanation should be given and a **Recommendation** only if required.

Table A-8   Efficiency report card headings—Performance column

Performance (Efficiency Evaluation Finding Performance)	
🟢	Satisfactory
🟠	Opportunity for some improvements
🔴	Opportunity for major improvements
⚪	Not assessable due to inadequate information OR Events have not occurred

A **Recommendation** should be provided for each orange, red or grey **Performance** assessment (see note above re: grey assessments) to guide future plan implementation efforts and resolve outstanding issues. Each **Recommendation** should be assigned a **Priority** rating. The categories used in the **Priority** column are shown in Table A-9.

Table A-9   Efficiency report card headings—Priority column derived from tables A-4, A-5 and A-6

Priority (Recommendation priority)
High
Medium
Low

These are determined by following a risk-assessment approach based on an expected likelihood and consequence. The tables presented in the *Appropriateness report card* section should be used to determine

each recommendation **Priority**. Note some efficiency **Recommendations** may have been sourced from plan implementation reviews. These will have already undergone a similar risk based prioritisation assessment.

Effectiveness report card

An effectiveness report card presents a summary of the effectiveness evaluation findings or results. An effectiveness evaluation is an assessment of the extent to which the expected objective outcomes were met, that is the level of success in achieving plan strategies that inform targeted and broad objectives. Effectiveness report cards should be created with the column headings shown in Table A-10.

Table A-10 Effectiveness report card headings

Plan objective	Performance indicators	Effectiveness evaluation findings	Performance	Strength	Recommendation	Priority

The **Plan objective** and **Performance indicators** columns should be populated from the plan, with the inclusion of any additional performance indicators identified during the evaluation process. The **Effectiveness evaluation findings** column should contain a finding for each plan objective derived from the results for the listed performance indicators. The **Performance, Strength, Recommendation** and **Priority** columns should be populated based on the following guide.

The **Performance** column is an assessment of how effectively the plan met the evaluation question. Each **Effectiveness evaluation finding** should be given a **Performance** rating as set out in Table A-11. These are subjective assessments that may have some category overlap and care should be taken to apply the rating consistently for a report or series of reports. If the evaluator is unable to reach a finding due to inadequate data then the grey category should be used.

Table A-11 Effectiveness report card headings—Performance column

Performance (Effectiveness Evaluation Finding Performance)	
🟢	Satisfactory
🟠	Opportunity for some improvements
🔴	Opportunity for major improvements
⚪	Not assessable due to inadequate information

The **Effectiveness evaluation findings** are based on the results of several PIs. Each effectiveness evaluation finding requires an assessment of the **Strength** of the underlying data and results. This should be applied as a summary **Strength** for each objective but take into consideration the **Strength** ratings applied for individual performance indicator result summaries (see the next section) that are associated with that particular objective. Each finding should be assigned a strength rating as shown in Table A-12 based on the criteria in A-13 and on the following points:

- information availability and analysis—the amount of evidence available, including multiple lines of evidence
- quality of information—the type of evidence, including consideration of its strengths and weaknesses and the level of certainty about the validity of the evidence
- temporal and spatial coverage—relevance to the plan area or high-risk areas within it and number of plan years to which the information is applicable.

This provides an understanding of how confident the evaluator is about how well the data supports the finding.

Table A-12 Effectiveness report card headings—Strength column derived from table A-13

Strength
Good
Moderate
Poor

Table A-13 Effectiveness report card headings—Strength rating determination

Evaluation finding strength	Information availability & analysis	Quality of information	Temporal and spatial coverage
Good	Documented evidence readily available addressing the PI during the plan term Publically available information Sufficient data/ information available for assessment	Data available that addresses the PI using the measures specified or appropriate substitute with supporting documentation	All plan area covered, or smaller areas as a result of active management of high risk areas Coverage for most or all years of the plan
Moderate	Limited documented evidence available addressing the PI during the plan term Unpublished or internal reports/data	Reliable data available that indirectly addresses the PI	Coverage of part of the plan area Coverage for some years of the plan
Poor	No data source identified or unanalysed data sets identified	Insufficient data/information available for assessment.	Restricted or local interest coverage (which is not the result of a risk minimisation approach) Coverage for minimal years of the plan

A **Recommendation** should be provided for each orange, red or grey **Performance** assessment. Each **Recommendation** should be assigned a **Priority** rating. The categories in Table A-14 are used in the **Priority** column.

Table A-14 Effectiveness report card headings—Priority column derived from tables A-4, A-5 and A-6

Priority (Recommendation priority)
High
Medium
Low

These are determined by following a risk-assessment approach based on an expected likelihood and consequence. The tables presented in the *Appropriateness report card section* should be used to determine each recommendation **Priority**.

Performance indicator result summary table

The performance indicator result summary table presents a summary of the results that are available for each performance indicator. These results are used to formulate the effectiveness evaluation findings. Performance indicator report cards should be set with the column headings shown in Table A-15.

Table A-15 Performance indicator result summary table headings

Performance indicator	Related plan objectives	Results	Strength of information

The **Performance indicator** and **Related plan objectives** columns should be populated from the plan. The **Results** should be presented as summary material and include any identified gaps or further data that could be used in future assessments (e.g. unanalysed data sets). Each **Results** column entry should be assigned a **Strength of information** rating as in Table A-16 based on the criteria in Table A-17 and on the following points:

- information availability and analysis—the amount of evidence available, including multiple lines of evidence
- quality of information—the type of evidence, including consideration of its strengths and weaknesses and the level of certainty about the validity of the evidence
- temporal and spatial coverage—relevance to the plan area or high risk areas within it and number of plan years to which the information is applicable.

This provides an understanding of how confident the evaluator is using the performance indicator results.

Table A-16 Performance indicator result summary table headings—Strength of information column derived from table A-17

Strength of information
Good
Moderate
Poor

Table A-17 Performance indicator result summary table headings—Strength rating determination

Information strength	Information availability & analysis	Quality of information	Temporal and spatial coverage
Good	Documented evidence readily available addressing the PI during the plan term Publically available information Sufficient data/ information available for assessment	Data available that addresses the PI using the measures specified or appropriate substitute with supporting documentation	All plan area covered, or smaller areas as a result of active management of high risk areas Coverage for most or all years of the plan
Moderate	Limited documented evidence available addressing the PI during the plan term. Unpublished or internal reports/data	Reliable data available that indirectly addresses the PI	Coverage of part of the plan area Coverage for some years of the plan
Poor	No data source identified or unanalysed data sets identified	Insufficient data/information available for assessment	Restricted or local interest coverage (which is not the result of a risk minimisation approach) Coverage for minimal plan years