

3. Planning considerations: establishing partnerships and engaging stakeholders

One of the most important elements in a successful planning process for recycled water is the establishment of partnerships and appropriate engagement with stakeholders.

3.1 INTEGRATED WATER RESOURCE PLANNING

Planning for the use of recycled water should take into account all relevant aspects of the total water cycle. Thus, consideration of the use of recycled water should take place on an equal basis with all alternative ways of providing water services and with the involvement of all relevant stakeholders as part of an integrated planning process.

Least cost planning is an integrated resource planning tool that can be used by local governments and suppliers of water services. Least cost water planning involves evaluating the costs and benefits of a range of means of meeting water customers' demand for water related services. In particular, it can involve reducing demand for water through demand management (encouraging the community to use less water), leakage reduction and water use efficiency, as well as exploitation of alternative sources for water (harvesting of rainwater and stormwater and use of recycled water). The least cost approach to provision of water services therefore entails the optimal combination of these options together with orthodox approaches (exploitation of existing water supplies) to produce the best water resource management outcome for the least cost.

In Queensland the Department of Natural Resources and Mines helps to promote integrated water planning by water and sewerage service providers through implementation of Total Management Planning. Total Management Planning is the means by which a service provider brings together all urban water-related strategic and operational matters into a single summary document. The document usually covers aspects of water supply, sewerage and storm water ingress to the sewerage system. The development and approval of a Total Management Plan is central to local government's ability to obtain subsidies from the Department of Local Government, Planning, Sport and Recreation for water and sewerage infrastructure. Total Management Planning can promote the sustainability of water supply if it effectively

integrates economic, social and environmental dimensions of water planning as part of the one planning process.

Under the Water Act the Minister for Natural Resources and Mines must plan for the allocation and sustainable management of water to meet Queensland's future water requirements, including water for the protection of natural ecosystems and the security of supply to water users. The Minister may achieve this through the preparation of a Water Resource Plan. The Water Resource Planning Process, led by the Department of Natural Resources and Mines, seeks to encourage the least possible uptake of surface and ground water through water use efficiency and demand management techniques. The planning process does not take consideration of the discharge of effluent to waterways, as recycling may increase over time as opportunities arise. Hence, STP effluent is not considered in the water allocation and management system designed to provide secure water entitlements.

3.2 COMMUNITY/STAKEHOLDER INVOLVEMENT IN PLANNING

Engagement with local communities and other parties affected by, or with an interest in, a water recycling proposal can be decisive in determining the level of support the proposal gains. The Queensland Government has published a range of documents to assist government agencies in undertaking community engagement activities, including:

- *Engaging Queenslanders: An Introduction to Community Engagement* (DPC 2003a)
- *Engaging Communities: A Guide to Engagement Methods for Practitioners* (Department of Communities 2005)
- *Engaging Queenslanders: Community Engagement in the Business of Government* (DPC 2003b)

These documents can be accessed on the *Department of Communities website*. The document *Engaging Communities: A Guide to Engagement Methods for Practitioners* (Department of Communities 2005) in particular has a comprehensive description of community engagement methods that may be used by proponents of water recycling schemes.

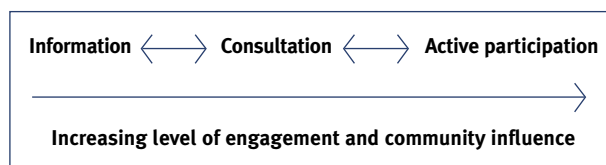
Although designed for Queensland Government agencies, the general principles of community engagement described in these documents can also be applied by other organisations such as local government, developers or industry.

3.2.1 Forms of community engagement in water recycling

There is no ideal type model for community engagement in water recycling. Different situations will require different solutions. The challenge for the proponent of a water recycling scheme is to choose the model that best fits the needs of their local community, their stakeholders and the resources they are able to devote to the process.

The Queensland Government recognises a continuum of three levels of community engagement (see diagram below):

- Information provision involves dissemination of information from the project proponent to the affected community and stakeholders. It is a one-way process.
- Consultation is a two-way relationship in which the water recycling proponent seeks and receives the views of communities and stakeholders on their proposal.
- Active participation accepts that members of the community and other stakeholders should have a role in making decisions about water recycling in their community.



These three levels of engagement are not mutually exclusive as each may be used at different stages of the one project.

3.2.2 Issues to consider for community engagement in water recycling

The project proponent should decide on the appropriate level of community engagement early in the planning process. This will ensure the maximum opportunity for feedback and participation by community members in the planning process, and ensure appropriate notice is given for the proposal. But it is also important to remain flexible about engagement. If the needs of the community change during the engagement process or there is a change in the external environment, the project proponent should respond to that change accordingly.

Once engagement commences there are many possible techniques that can be used. *Engaging Communities: A Guide to Engagement Methods for Practitioners* (Department of Communities 2005) recommends that when deciding on an approach, the project proponent

should consider such factors as:

- The objectives of the engagement process: this will influence the scope of the engagement and assist in weighing up the possible benefits and costs.
- The nature of the target community: whether it is geographic or industry-based community, a community of interest or some other form.
- What is the political environment: is there political support for the project or is it contested?
- What is the capacity of the community to influence the project? In other words, what decisions have already been made? It can be very damaging to raise expectations within a local community about their capacity to influence a project when such decisions have already been made.
- What resources are available to support the engagement process? Skilled facilitators and communications experts may be required, as well as extended time periods to enable the community to absorb information and consider their interests.
- Is there high-level commitment among the project proponents to the proposed community engagement approach? This commitment is required to guarantee resources are available and any difficulties encountered are appropriately managed.

There are also aspects of the community itself that can significantly influence the engagement process. These factors may be discovered through techniques such as community profiling or stakeholder segmentation that are designed to ensure that the appropriate messages go to each part of the community and key sub-groups are identified for more focused engagement, where necessary. Some of the community features that should be considered are:

- Demographic features, such as age, socio-economic mix, literacy levels and any cultural issues.
- Community preferences for engagement. This will vary within sub-groups and may depend on the issue under consideration. Wherever possible community preferences should be addressed.
- Previous experience with engagement. If a community has had some previous experience with engagement that has been either positive or negative this could affect their level of trust in the engagement process.
- Communities and sub-groups will vary in their capacity to participate in engagement activities. Key elements of community capacity for engagement relate to their level of knowledge of the issues being discussed, the

resources available to them (in particular, time), the skills to make a positive contribution (e.g. literacy or public speaking) and the infrastructure to participate (e.g. transport to communication venues or availability of child care).

- Existing engagement structures and processes. Where possible, any existing networks, committees or other community structures should be utilised to support engagement within the community.
- The nature and extent of the possible impact on, or benefit to, the community. The benefits and costs of water recycling may not be evenly shared within communities so it is important to identify which parts of the community are affected and in what way.

3.2.3 The engagement process in water recycling

The Queensland Government has adopted six guiding principles for community engagement. These principles should be used when selecting techniques for community engagement:

- **Inclusiveness:** ensuring that everyone who may be affected by the proposed changes has the opportunity to be engaged, while also ensuring that dominant groups are not the only ones that get a hearing.
- **Reaching out:** making the effort to engage with those in the community who may not traditionally participate in engagement activities. This may involve taking action to overcome barriers to engagement.
- **Mutual respect:** this involves acknowledging the importance of the community's contribution to project development; in other words that the project proponent is truly listening to the views of the community, not just talking.
- **Integrity:** maintaining honest, open communication is essential to ensuring trust within the community. There must be a willingness to follow through on any commitments made to the community and an assurance that the proponent will follow up and explain any changes that take place in project planning over time.
- **Affirming diversity:** this is to ensure that engagement processes are appropriate to all sub-groups within the community and do not exclude anyone on the basis of age, gender, disability or cultural background.
- **Adding value:** ensure that the engagement process builds capacity for future engagement activities and supports sustainable community outcomes.

3.2.4 Tools for community engagement

Apart from the supplier and user of recycled water, there are other key stakeholders who should be involved in integrated water resource planning (including water recycling):

- relevant government agencies (e.g. EPA, Queensland Health, Department of Natural Resources and Mines, Department of Primary Industries and Fisheries and local government)
- downstream communities or farmers who may be affected, favourably or unfavourably, by upstream changes to effluent discharges
- local residents whose property values, health or peace of mind may be affected by proposed water recycling schemes
- key community groups (e.g. catchment management groups) or peak industry bodies that can provide specific knowledge and also assist in educating the public and encouraging support for water recycling
- local politicians (who are likely to have a crucial role in decision-making)
- customers who will purchase or use commodities or services produced using recycled water (e.g. supermarkets or golf course users)
- workers who may be exposed to health risks from contact with recycled water.

Wherever possible, integrated water resource planning should involve all of these stakeholders. In order for local communities to be in a position to select the right options to ensure their water service needs are met, they should be provided with appropriate levels of information about the range of choices open to them. This inclusive process for decision making ensures that all parties likely to be affected by a proposed water recycling project are satisfied not just with the decisions taken regarding the proposed use, but also with the process that has led to that decision. Consultation that is limited to presenting local communities with a final decision about implementation of recycling may fail to gain broad acceptance.

There are many tools available for community engagement. These are discussed in detail in *Engaging Communities: A Guide to Engagement Methods for Practitioners* (Department of Communities 2005).

3.2.5 Feedback, evaluation and ongoing engagement

Whichever engagement technique is chosen it is essential to provide opportunities for feedback and follow-up, once the planned engagement process is completed. Feedback allows participants to verify that their concerns have been accurately represented when decisions are being made. Follow-up is particularly important when there are delays between the engagement process (e.g. during planning) and the commencement of the actual water recycling project. The best time to establish the protocols for feedback and follow-up is during the planning stage for the community engagement process.

Evaluation is an important way to identify the successful and unsuccessful elements of an engagement process. It can identify whether the engagement process met everyone's needs, contributed to more effective decision-making and whether it was cost effective. The publication *Engaging Queenslanders: Evaluating Community Engagement* (Department of Communities 2004) has been developed by the Department of Communities to provide advice on evaluating community engagement activities. It provides advice on data collection tools, interpreting and analysing data and ensuring evaluation outcomes contribute to future planning and decision-making.

The significance of water recycling within a community does not end with the successful implementation of a scheme. It can be valuable for scheme proponents to establish an ongoing relationship with key stakeholders, including members of the local community, via a contact or liaison group, so that any emerging issues or concerns can be dealt with on a cooperative basis before any conflict develops. At a minimum this should include recycled water suppliers and users but could also involve neighbouring landholders, regulators and customers who use products or services that have recycled water as an input.

3.3 PARTICIPATION OF GOVERNMENT AGENCIES IN PLANNING

Regulators have an important role to play in planning by encouraging water recycling as a means for reducing discharges to waterways and by participating in Total Management Planning undertaken by water and sewerage service providers. Government agencies also have a statutory role to play in the Integrated Development Approval System (see section 2.1.2 of these guidelines).

Appendix D contains contact details for state government agencies that provide advice on water recycling in Queensland. Although the EPA is the lead agency for

proponents of water recycling schemes, it is essential for EPA licensing officers to refer any proposals for water recycling that have the potential to impact on public health to the appropriate regional office of Queensland Health.

3.4 PLANNING CONSIDERATIONS FOR SUPPLIERS AND USERS OF RECYCLED WATER

While planning for recycled water schemes should take place within an integrated water resource planning framework, there are still specific planning issues that should be considered before particular recycled water applications are implemented.

3.5 ENSURING RELIABLE DEMAND FOR RECYCLED WATER

Multiple use of water can represent an important business opportunity both within existing enterprises that use significant amounts of water and for all other potential users of non-drinking water.

Notwithstanding this, recycled water suppliers should still ensure that they have confidence about potential markets for their recycled water before committing to development of water recycling schemes. There are a number of ways of achieving this. One way for local government to ensure reliable markets for recycled water is to encourage clustering of intensive users of recycled water (e.g. industrial developments, plant nurseries or turf farms) in close proximity to the sources of recycled water, such as STPs. This approach reduces the establishment and running costs of infrastructure and increases the reliability of markets for recycled water.

3.6 SUBSIDIES FOR RECYCLED WATER SCHEMES

Subsidies are available to local governing bodies that could assist with the cost of infrastructure to support water recycling. These are administered by the Department of Local Government, Planning, Sport and Recreation, which should be consulted for further information (see contact details in Appendix D).

3.7 PRICING OF RECYCLED WATER

To ensure financial viability of the recycled water project, a price for recycled water that reflects both the value of the resource and the capital and operating costs of the project should be considered. Further discussion of options for pricing of recycled water is contained in the EPA's *Manual for Recycled Water Agreements in Queensland* (EPA 2005b).

3.8 PLANNING CONSIDERATIONS FOR SMALLER SCHEMES

The scale of planning activities undertaken should be appropriate to the scale of the proposed development. For example, an STP that supplies recycled water to a neighbouring turf farmer located well away from urban development could be expected to require less detailed planning inputs than a major dual reticulation scheme serving many customers. Thus, for a small water recycling scheme, if the flow chart shown in Figure 2.1 is followed, no requirement for development approval exists and no stakeholder objections are encountered, then the process may be relatively short and simple.

Before committing to water recycling, potential users of recycled water should also consider what water savings could be achieved through discretionary measures such as water use efficiency or utilisation of alternative sources. For example, harvesting of roof water and storage in rainwater tanks may have advantages over water recycling from treated municipal effluent owing to simpler treatment and management issues.

3.9 RECYCLED WATER AGREEMENTS

With the exception of dual reticulation supplies (see below), whenever a recycled water producer supplies another person or organisation with recycled water, the two parties should negotiate a formal agreement regulating their relationship. In Queensland this Recycled Water Agreement is often referred to as a *Third Party Agreement* to indicate that it involves a party (the user) who is not bound by the existing development approval for the activity that produces the recycled water (the first and second parties being the EPA and the treatment plant operator). However, not all Recycled Water Agreements will be between “third parties” and the holder of a development approval.

A Recycled Water Agreement should be entered into freely by each party and should specify their respective obligations and responsibilities with respect to the supply and use of recycled water. Although the content of these agreements will be negotiated between the parties, they should have several key features:

- They should describe how and for what purposes the recycled water is to be used, and any uses that are specifically excluded.
- They should emphasise that water recycling is a partnership between the supplier and the user.
- In the event of dispute, they should facilitate joint problem solving rather than sanctions.

The EPA has published a *Manual for Recycled Water Agreements* (EPA 2005b) and associated *Model Recycled Water Agreement* (EPA 2005c) containing a set of model clauses that may be used by recycled water suppliers and users to design their own Recycled Water Agreements that best suit their circumstances.

3.9.1 Terms and conditions of supply for users of dual reticulation

It would not generally be practical to negotiate Recycled Water Agreements for recycled water systems that have large numbers of customers, as would be the case with dual reticulation systems delivering recycled water from advanced water recycling plants. The best approach for this form of reuse is for the recycled water supplier to present each customer with a “Terms of Use” document containing the conditions under which the recycled water will be supplied. This will specify the obligations of the supplier and the responsibilities of the customer to ensure safe use of the product. The user accepts these terms and conditions by using the recycled water supplied and paying the appropriate tariff.

The supplier should also have a system to ensure that whenever a property changes ownership or a rental property is re-tenanted, the new owner or tenant is fully informed of the supplier's responsibilities and the user's obligations in using recycled water. Local government could ensure that new owners are alerted to the supply of recycled water to their property via an annotation to the local government rates database. For rental properties, the terms and conditions of supply of recycled water should be appended to the rental lease.

3.10 COMMITMENT TO RESPONSIBLE USE AND MANAGEMENT OF RECYCLED WATER QUALITY

The sustainable use of recycled water requires clear allocation of responsibilities for protection of public and environmental health. Acceptance of these responsibilities by all relevant parties can be formalised through development of a recycled water policy.

3.10.1 Responsible use of recycled water

During both planning for and operation of water recycling schemes, it is essential that appropriate responsibility is allocated and accepted by the relevant parties, for every element of the scheme that could lead to risks to public or environmental health.

3.10.2 Responsibilities of government agencies

Employees of government agencies, at both the state and local level, need to be familiar with the legal basis for water recycling (see Chapter 2 of these guidelines), and the Queensland Government's policies that support water recycling, largely contained in the *Queensland Water Recycling Strategy* (EPA 2001). They should also take account of the advice provided by these guidelines.

EPA officers involved in development approvals for persons undertaking the ERA of sewage treatment that supply water recycling schemes should also be familiar with any relevant EPA administrative guidelines that exist for water recycling. The EPP Water also contains a specific requirement for EPA officers making environmental management decisions about activities involving water recycling to consider the water quality objectives for waters affected by the recycling as well as the maintenance of acceptable health risks. EPA officers are also required by the EPP Water to take appropriate account of the *waste hierarchy* (outlined in the Environmental Protection (Waste Management) Policy) by encouraging, first of all, waste prevention (e.g. by reducing the contaminants in trade waste), then reuse and recycling, and only then disposal to land or water.

EPA officers involved in any application to modify an existing STP licence or development approval to permit water recycling, or a proposal for a new water recycling scheme, must have confidence in the capability of the existing or proposed treatment system to reliably and consistently deliver recycled water that is fit for the

purpose for which it is intended. If the user applies additional treatment (e.g. extended lagoon storage to achieve additional virus reduction) this should also be taken into account when assessing the treatment capability of the system.

For existing STPs, evidence of consistent performance could include:

- monitoring results that indicate achievement of the water quality standards appropriate to the class of recycled water being supplied (see Tables 6.2a and 6.2b)
- evidence of management systems comprising quality assurance and quality control that are capable of ensuring the reliable production of quality recycled water (e.g. a Recycled Water Management Plan prepared in accordance with these guidelines)
- evidence that management systems are capable of dealing with non-conformances or system failures
- evidence that the personnel who will manage the production and use of the recycled water have the technical capability to run the system successfully.

EPA officers who assess new water recycling proposals will require the following information from proponents:

- evidence (e.g. in terms of hydraulic loading rates, substitution for current use of potable water or economic benefit from cropping or pasture production) that the proposal involves beneficial reuse and is not intended primarily to avoid discharge to a water body
- evidence that the proposed treatment process is capable of delivering the performance required to ensure delivery of recycled water to specification
- a draft Recycled Water Management Plan, or other equivalent plan, that includes risk assessment, quality assurance, and procedures for dealing with system management
- plans for training of personnel who will be involved in management of the system.

Regulators in EPA and local government must ensure that proposed water recycling schemes having the potential to affect public health are referred to the local office of Queensland Health for their advice.

As it is Queensland Government policy to encourage and support water recycling that is safe and cost-effective, all regulators have a duty to work with suppliers and users, and with one another, to facilitate this to the greatest extent practicable.

3.10.3 Responsibilities of suppliers of recycled water

In general terms, suppliers of recycled water have a responsibility to:

- supply recycled water that is fit for its intended purpose. To achieve this, they should have in place infrastructure, management systems and monitoring programs that will ensure effective management of trade waste discharges, operation of treatment facilities and delivery of water of a quality fit for its intended use
- provide each user with all “relevant information” about the recycled water, as required by the Workplace Health and Safety Act (see section 2.1.7 of these guidelines). This will include information about the quality of the recycled water
- negotiate a Recycled Water Agreement with each person using their recycled water, or provide terms and conditions of use for users of recycled water from dual reticulation schemes (see section 3.9 of these guidelines)
- keep to the terms of the Recycled Water Agreement
- ensure that the entire system for producing and using the recycled water, including each site where recycled water is used, is covered by a Recycled Water Management Plan, or equivalent site-based management plan or irrigation management plan, that incorporates risk assessment
- alert each user, as soon as practicable, of any problems relating to recycled water quality or supply
- respond appropriately to any misuse of recycled water by the user that they become aware of. This could include notification to the EPA or termination of the supply of recycled water to that user
- provide all relevant information to each user that is required for the user to develop their component of the Recycled Water Management Plan or equivalent management plan.

Water service providers registered under the Water Act (including providers of recycled water) also have certain responsibilities relating to asset management planning, reporting and customer service standards that are spelt out in the Water Act, unless exempted.

3.10.4 Responsibilities of commercial users of recycled water

Users of recycled water, other than domestic users connected to a dual reticulation scheme, have a responsibility to:

- protect the health and safety of employees, contractors and site visitors
- adhere to the terms of the Recycled Water Agreement entered into with the supplier
- produce and maintain management systems comprising well-documented work and emergency procedures (e.g. as part of a Recycled Water Management Plan)
- provide their employees with appropriate and up to date training (including personal hygiene when working with recycled water) so that employees can work safely and responsibly
- provide their employees with appropriate personal protective equipment as determined by their Recycled Water Management Plan
- maintain their equipment so that it operates safely
- provide appropriate signs to inform employees and visitors of the use of recycled water
- audit implementation of their Recycled Water Management Plan regularly
- notify the EPA if they become aware of any actual or potential serious or material environmental harm resulting from their use of recycled water (in accordance with the requirements of the Environmental Protection Act).

Queensland Workplace Health and Safety (a division within the Department of Industrial Relations) will produce a document on the safe workplace use of recycled water. Contact details for Queensland Workplace Health and Safety are shown in Appendix D. When this document is available a link will be placed on the EPA website.

3.10.5 Responsibilities of domestic users of recycled water

The responsibilities of domestic users of recycled water supplied by Council or other provider of recycled water services are to:

- only use recycled water in accordance with the terms and conditions or other guidance provided by their recycled water supplier

- ensure that visitors and family members are aware of the use of recycled water and all relevant measures for safe use
- ensure that they do not waste recycled water or use it inefficiently
- ensure that the recycled water applied to their garden does not leave their property as runoff or as spray drift.

3.11 RECYCLED WATER POLICY

A recycled water policy is essentially a way to document the commitment of an organisation and its members to the responsible management of recycled water and communicate this to others. The draft National Guidelines for Water Recycling (NRMCC & EPHC 2005) recommend that a recycled water policy should address the following issues:

- commitment to responsible use of recycled water
- commitment to application of a risk management approach
- recognition and compliance with relevant regulations and other requirements
- communication and partnership with agencies with relevant expertise including water suppliers, primary industry departments, health departments, environment protection authorities and other regulators
- communication and partnership arrangements with users of recycled water (e.g. farmers, local government, operators of sports facilities and recreational parks, industry, firefighters)
- communication and engagement with employees, contractors, stakeholders and the public
- intention to adopt best practice management, including the *multiple barrier approach* to water quality (see Chapter 4 of these guidelines).
- continual improvement in the management of recycled water treatment, use and application.

The recycled water policy must be communicated to, and accepted by, all parties with responsibilities under the recycled water management system, including contractors.

