

Total Management Plan (TMP), Catchments and Waterways

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Abstract

This paper is based on a project recently completed by GHD (formally Egis) for the Gold Coast City Council (GCCC).

A Total Management Plan (TMP) is a business management system used to integrate the environmental, engineering and financial aspects of an organisation's activities. It will allow the responsible authorities to organise and deploy its resources in a systematic and efficient manner to ensure that it receives the best value for money in the management of its catchments and waterways

The Queensland Government has recently issued guidelines for TMP's for water supply and sewerage assets. The application of TMP principles to the management of natural assets such as catchments and waterways, however, This project represents a "first" in Queensland and will place the Gold Coast at the leading edge of business practice.

While flooding continues to be a major issue facing Councils, waterway health is under increasing pressure from water pollution and threat to intrinsic environmental values. As such, waterway corridor management is another important element to be managed. Legislative requirements and regional commitments are also some the overriding drivers for managing the catchment and waterways. In carrying out this role, Councils also recognise that it has an obligation to achieve the most efficient use of ratepayer funds.

Implementing the TMP will serve to integrate water quality, catchment health, flood management and waterway corridor planning into a coordinated activity. This includes;

- A clear identification of Council's roles and responsibilities.
- A priority program for Level One catchments.
- A methodology for assessing risks within catchments;
- Identification of gaps and management issues to be addressed.
- A Catchment and Waterways Management Strategy, including an Action Program and Process Model.
- An implementation strategy.

Introduction

Like most Councils, actions and responsibilities for catchment and waterway management are spread across a number of directorates of the GCCC. This has made effective planning difficult and has led to the duplication of some functions. At the same time, whilst individual sections are performing well in many cases, overall outcomes are less than ideal, with gaps in planning processes and service delivery evident.

In responding to these challenges, The GCCC has recognised that catchments and waterways must be managed in an integrated and holistic manner. To achieve this, Council is seeking to introduce a *Total Management Plan (TMP) for Catchments and Waterways*. In late 1998, Council commissioned an initial study to assess the likely benefits of such a program. This was the first of the following three stages.

Stage 1: Define the project,

Stage 2: Develop the project and

Stage 3: Implement the project.

Following the completion of Stage 1 of the study, GHD formally Egis Consulting Queensland (Egis), were commissioned to undertake Stage 2 of the study, "*Development of the TMP*"

Council reports, relevant legislation and industry best practice information was reviewed and a series of meetings and workshops held with relevant Council officers. This provided an understanding of Council's current management systems and identified gaps and potential improvement options. A workshop was then held with key community stakeholders to identify critical waterways management issues that needed to be incorporated into the development of the TMP.

The key outcomes delivered from this process will form the basis for implementing the TMP. A major benefit of this process will be the introduction of a risk-based approach to catchment management. This will enable needs and resources to be prioritised rather than applied ad-hoc. The TMP will also deliver integrated best practice models and infrastructure planning and management tools. This will save money, deliver more coordinated services and provide a more scientifically defensible basis for catchment and waterway management.

Why do we need to more effectively to manage our catchments and waterways?

Stakeholder and ratepayer expectations

Council, like all local governments in Australia, is charged by the State and its ratepayers with the responsibility of providing a number of services to ensure that adverse flooding, pollution of receiving waters and degradation of waterway corridors is minimised. These expectations are reflected in a range of existing Council functions, including:

- Protection of the waterways and other natural resources of the City through the development and implementation of planning schemes and applicable codes.
- Regulation of activities and industries and response to environmental incidents to minimise risks to the public, workers, infrastructure, wildlife and natural systems.
- Design, construction and maintenance of stormwater drainage networks to minimise impacts to receiving waters and to reduce the frequency and severity of flooding.
- Taking a lead role in engagement and support of the community in waterway and catchment management planning.
- Providing leadership in the environmental management of Council's own operational areas such as sewerage infrastructure, landfill, road works, etc.

Ratepayers expect these services to be delivered at a reasonable cost and to an acceptable quality standard. A growing environmental awareness in the community has, however, raised expectations about how these services are delivered. It is no longer good enough to do things the way they were always done. Ecological sustainability, economic efficiency and social enhancement - the *"triple bottom line"* - all need to be delivered as part of the service.

Legislative and regional planning requirements

The last ten years has seen a range of new environmental laws and regulations introduced by the Federal and State Governments. These have included the Federal *Environment Protection and Biodiversity Conservation Act 1999*, which now regulates areas of declared national and international environmental significance including the Moreton Bay Marine Park and the Central Eastern Rainforests of the City's hinterland.

The State's *Environment Protection Act 1994* and *Integrated Planning Act 1997* oblige Council to take all reasonable and practicable measures to prevent or minimise environmental harm and to consider the principles of ecologically sustainable development in their decision-making. Council must address these requirements in the preparation of planning schemes and in the assessment of development applications. This means setting environmental values, key performance indicators and assessment criteria for the City's waterways in consultation with the community.

Council is also required under the *Environmental Protection (Water) Policy 1997* to develop and implement an *Urban Stormwater Quality Management Plan* for the City. There is also new State legislation regulating coastal, acid sulfate soils and vegetation management that needs to be addressed.

The TMP will provide an effective structure for Council to address these legislative requirements and has been developed specifically to comply with relevant State Government guidelines.

In addition to new laws, comprehensive voluntary frameworks have also been established for integrated management of catchments in South-east Queensland. The *Healthy Waterways Strategy* has used several years of research to develop a twenty year plan aimed at improving the water quality and overall condition of the region's waterways and catchments. The *Moreton Bay Waterways and Catchments Partnership*, of which Gold Coast is a key member, has been formed to oversee implementation of this regional Strategy.

Gold Coast, like all other Councils and businesses, needs to find the most cost-effective way of satisfying these statutory and regional planning requirements. Moreover, it needs a way of turning what often appear to be confusing and complex regulations into clear priorities. This must be done transparently and objectively in the face of increasing community scrutiny of Council's decision-making processes. The consequences of getting it wrong are significant, including the increased threat of litigation and commercial and legal liability.

With growth rates and development pressure increasing, the legal and corporate requirements of Council becoming increasingly stringent and sophisticated lobby groups and public expectations rising, implementing an effective business management system within Council is essential to anticipate and meet environmental due diligence objectives and ensure ongoing compliance with statutory requirements. The TMP has been developed to provide a means for Council to deliver these outcomes.

Following an extensive review and update of all relevant legislative requirements and regional commitments relevant to Council, a summary table was developed to present the relevant key issues to be addressed and how they have been addressed in this TMP. Detailed analysis has been undertaken on how the TMP including the Strategy will provide Council with a mechanism to comply with Water EPP requirements. This Strategy also complies with the EPA's Model Urban Stormwater Quality Management Plan guideline.

Council Corporate Commitment

With growth rates and development pressure increasing, the legal and corporate requirements of Council are becoming increasingly stringent. With sophisticated lobby groups and public expectations also rising, implementing an effective business management system within Council is essential to anticipate and meet environmental due diligence objectives and ensure ongoing compliance with statutory requirements.

The TMP has been developed to provide a means for Council to deliver these outcomes. Council have prepared a *Draft Corporate Plan 2002* due out later this year which represents a direct commitment by Council to protecting and improving the catchments and waterways through the setting of strategic priorities and objectives. The implementation of this TMP will provide a significant contribution to the delivery of a majority of strategic priorities and objectives in this plan.

Risks assessment for the catchments and waterways

A key aspect of the TMP is the introduction of a risk-based methodology to prioritise issues for the application of resources to catchment and waterway management works. The risk assessment methodology adopted for the TMP is based on the Australian Standard 4360 for Risk Management with changes made to better suit the application within the context of catchment management. This method involves estimating the potential risks to the receiving environmental values associated with specific catchment related threats and identifies the catchments that are currently at the greatest risk of damage and would require the most immediate action to prevent and minimise any future damage. It also identifies the principal management issues that need to be addressed (i.e. water quality, flooding or waterway corridor management) for each catchment.

The key outcomes of undertaking a broad risk assessment at this stage included:

- The prioritisation of each of the 11 major catchments to enable a more detailed and comprehensive investigation to be undertaken at a future stage for the preparation of Integrated Catchment and Waterways Management Plans for each catchment.
- The provision of a methodology to identify, prioritise and manage relevant issues within a catchment during the preparation of Integrated Catchment and Waterways Management Plans for Stage 3 of the Total Management Plan – Implementation.
- The identification of information resources and needs, including critical (key) information requirements.

As part of this process, technical workshops were held to prioritise the City's eleven major catchments based on a range of criteria including: environmental, ecological, economic, water supply and cultural values, development pressures, catchment size, available studies, flooding problems and community interest.

How do we currently manage our catchments and waterways?

A review of the Council's current management framework and management practices relating to waterways and catchment management issues has been undertaken.

The main objectives of this review were to:

- Review current management practices relating to water quality, drainage and catchment issues.
- Identify current initiatives, programs and studies being undertaken by the various departments.
- Identify the extent of contribution and involvement of various departments' under current structure.
- Identify the gaps, weaknesses and strengths of the current management practices and opportunities for improvement.

The review was based on information obtained from workshops held with the Project Committee, workshops/meetings held with relevant staff from individual branches and directorates, and documentation supplied by Council.

The results of this review have been used to develop strategies to facilitate greater coordination and communication between directorates in managing catchment and waterways issues including;

- Corporate Plan
- Council Committees
- Environmental Management Systems
- Operational Plans
- State of the Environment and Health of the Waterways Reporting
- Catchment Management Studies
- Water Quality Monitoring Programs
- Water Quality Management
- Flood and Drainage Management
- Riverine (Regional) Flood Management
- Drainage Upgrades for Existing Systems
- Drainage Planning for New Developments
- Development Assessment and New Planning Scheme

How do we move forward?

Council has recognised that a more integrated and holistic approach is needed to adequately address catchment and waterway management issues in the longer term. In addition to the management framework options discussed earlier, a key outcome of the TMP has, therefore, been an *Integrated Catchment and Waterways Management Strategy*. Under this strategy, Council would seek to achieve sequencing of

development approvals in tandem with infrastructure capacity to more effectively deal with water quality, flooding and waterway corridor issues.

Full cost benefit analysis of economic, social and environmental costs and benefits would also accompany all major decisions about priority works. A common information platform would be developed to optimise information transfer between suppliers and users.

Following the review of current practices and identification of the gaps, an Integrated Catchment and Waterways Management Strategy (the Strategy) has been developed to address these gaps and to improve council compliance with relevant legislations.

Overall strategy Vision and Goals have been developed along with 7 major sub-strategies. The rationale, objectives and actions tasks have been developed of each of these sub-strategy. The strategies contains prioritised 33 major actions and more than 70 sub-actions which have been developed in conjunction with the Council's Project Committee through a number of workshops, to achieve Council's vision, community expectations and legislative requirements. However, the final actions included in this strategy must be fully supported by the Council, which represent the ratepayers interests.

A Strategy Implementation Model has also been developed to assist Council in implementing these actions in an integrated manner to deliver goal driven outcomes.

What is the best way to implement the TMP?

The TMP is fundamentally a business document, not a detailed organisational review. It contains a series of tasks for Council to deliver (in cooperation with its partners) in order to address a range of catchment and waterway issues identified. The TMP will, however, work only if it is fully supported by Council's elected representatives and ratepayers.

A specific Action Program and Process Model has been detailed as part of TMP development. A review of potential management options for implementing the Action Program was also undertaken.

The criteria used to assess the options identified included capability to deliver the City's corporate Goals and Objectives, transparency, accountability, effectiveness, efficiency and the level of organisational re-structuring likely to be required.

Allocating the responsibilities for various actions / programs to different department will result in continued inefficiencies, un-coordination of management activities and duplication of efforts. Given that most of the strategy actions will be delivered using the model of Integrated Catchment Management and Waterway Planning, it is essential that this tool be implemented by a single management body or group to ensure coordination is achieved.

Based on the results of this review, it is recommended that a *Management Implementation Group* be set up to implement the TMP. This Group should comprise middle managers of relevant operational areas led by a Director appointed to act as "*TMP Champion*". The Group should oversee a specific Council budget to implement the TMP.

The review also indicated that Council should ultimately address the organisational weaknesses that exist due to the current disjointed management arrangements and investigate the need for an integrated “*Water Management Group*” within Council in the longer term.

This TMP is a corporate business document for the Council, and should be implemented as such. Effective implementation of this TMP and its Strategy will deliver a significant component of the strategic priorities and objectives of the draft Corporate Plan 2002. Therefore reporting on performance should be included in the Corporate Plan Quarterly Report.

Successful implementation of the TMP will not only ensure Council meets its legislative requirements and regional commitments, but it will also enable Council to manage its catchment and waterway resources which are of high priority to the ratepayers of the Gold Coast in a integrated and efficient manner.

Conclusions:

- The TMP is fundamentally a business document that recommends an effective management framework and integrated strategies to deliver Council's responsibilities in effectively managing the City's catchments and waterways.
- Council has a key responsibility to manage catchments and waterways in an effective and integrated manner to maximise the benefits to the ratepayers from limited resources and to continue meeting legislative requirements and regional commitments.
- A risk assessment methodology has been designed to undertake a detailed risk assessment during Stage 3 of the Total Management Plan – Implementation for the preparation of individual Integrated Catchment and Waterways Management Plans (ICWMPs). The primary purpose of the risk assessment is to articulate the basis for prioritising management issues within a specific catchment based on an understanding of the key values and threats throughout that catchment or subcatchment.
- Based on a review of the current management practices of various waterway issues a summary of strengths, weaknesses and opportunities of the relevant activities under the current organisational management have been identified and have been used to develop the Strategy, formulate options to improve management frameworks.
- Waterway and catchment management responsibilities are spread across most departments and amongst a number of functional areas within departments.
- Although Council's operational areas can be seen to follow best practice in many instances, the outcomes of all Council's various efforts are not assessed against any unified goals for waterways nor the delivery of value for money.
- Improvement of Council's current organisational arrangements and management practices regarding catchments and waterways issues are the key delivery platforms for implementing the TMP strategies and consequently for delivering healthy waterways for the City.
- Effective implementation of this TMP and adoption of the Strategy will deliver a significant component of the strategic priorities and objectives of the draft Corporate Plan. As a corporate document, reporting on the TMP's performance should be included in the Corporate Plan Quarterly Report.

- Implementation of the TMP will not only help meet Council's legislative responsibilities, but will also assist in organising the City's resources in a systematic and efficient manner that can address catchment and waterway issues of priority to the ratepayers of the Gold Coast.

References

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