

# Operations & Maintenance Of Environmental Health Infrastructure In Mainland Queensland Indigenous Communities

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## ABSTRACT

For people to enjoy and maintain a healthy living standard, it is essential that environmental health infrastructure, such as water supply, sewerage and waste management systems and services are adequate. Inadequate essential services in remote Indigenous communities can underpin health status. It has been identified that the health status of Indigenous people is well below that of others living in Australia.

Recognising that improving a community's general health and wellbeing can result from effective operations and maintenance of environmental health infrastructure, the Queensland Government established the Operations and Maintenance (Mainland) Program (O&M Program) specifically for water supply, sewerage and waste management systems.

The O&M Program provides technical advisory services to 17 mainland Queensland Indigenous Councils. These services include:

- **Operations and maintenance** – to provide ongoing expert technical advice, which will assist in enhancing the operations and maintenance of the infrastructure.
- **Training** - to develop and facilitate an effective and relevant training framework to raise technical skill levels and competencies of Council staff.
- **Consultation** – to maintain open lines of communication with stakeholders – Council, the community, State agencies etc.
- **Other tasks** - to undertake other tasks in an ad hoc basis in support of the O&M Program.

Improving the capacity of the community to maintain essential services is a primary focus of the O&M Program. To this end, the program in its present form is making significant progress. Continued progress and improvements to environmental health infrastructure operations and maintenance will require ongoing cooperation among the broad range of stakeholders including all levels of government, the community and other stakeholders.

## KEY WORDS

Environmental Health Infrastructure	The essential infrastructure systems required for general health and wellbeing, such as water, sewerage, waste management, stormwater, roads and serviced lots.
Essential Service Officers (ESOs)	Council staff responsible for the operations and maintenance of essential services such as water, sewerage, waste management services.
Total Management Plans (TMP)	A plan intended to provide communities with an informed source of information about their infrastructure requirements, including history, condition, management and future needs etc.

## 1. INTRODUCTION

A 2003 report by Queensland Health reported that the health of Queensland Aboriginal and Torres Strait Islander people remains substantially worse than any other section of the Queensland population. Examples of this disparity between Indigenous people and other Queenslanders are:

- Gap in life expectancy is estimated to be 18-19 years less.
- The age adjusted death rate is estimated to be over three times (3.2) greater.
- Infant mortality rates are still unacceptably high at two and a half times greater.
- The estimated mortality rates for Queensland Aboriginal and Torres Strait Islander people in middle age (40-64 years) are among the highest recorded in the world.
- Mortality rates in early middle age are estimated to be more than 5 times greater.
- There has been little improvement in adult mortality over the last 20 years, and this lack of progress is virtually without precedent on a world scale. (Queensland Health, 2003)

In 1987, the Nganampa Health Council published an environmental health report called the 'UPK Report'. The report came to the conclusion that nine healthy living practices are necessary for improved health in the Anangu Pitjantjatjara Lands. These healthy living practices are important to improving the health and wellbeing of all people living in Queensland.

The nine healthy living practices were listed according to their likely importance to improving people's health status:

1. washing people
2. washing clothes/bedding
3. removing waste
4. improving nutrition
5. reducing crowding
6. separating of dogs and children
7. controlling dust
8. temperature control
9. reducing trauma (*UPK Report 1987*)

These healthy living practices are impacted on by the type and condition of environmental health infrastructure in the community. They can be used to identify, plan and prioritise environmental health infrastructure projects and their operations and maintenance.

Making headway on health depends on systematically addressing five related areas of need, which are:

1. Making improvements in infrastructure, including housing, water, sanitation, education, land and economic development, etc.
2. Increasing community participation and control in service delivery.
3. Establishing a network of primary health care services that deliver effective services.
4. Providing an adequate level of health resources.
5. Developing a skilled health labour force. (Queensland Health, 2003)

Points 1 and 2 are directly related to the condition and management of a community's environmental health infrastructure.

## **2. DISCUSSION**

In 1995, the Queensland Government established an Aboriginal and Torres Strait Islander infrastructure program to provide capital funding to Indigenous communities in the areas of water, sewerage, waste and related infrastructure. To obtain an understanding of the community needs, Total Management Plans (TMP) for 34 Indigenous communities throughout Queensland were finalised in 2000.

The TMPs documented the existing status of water, sewerage, waste and related infrastructure and as well projected capital requirements over ten years. Furthermore, the TMPs documented suggested maintenance and training requirements for each community.

In 1998, following an analysis of infrastructure requirements in remote Indigenous communities and evidence of unsatisfactory health status, the Queensland Government provided funding of \$6 million to the Aboriginal Coordinating Council (ACC) to establish a pilot project for operations and maintenance of infrastructure. Such support maximises the use, lifecycle and sustainability of infrastructure in Indigenous communities and helps to mitigate the risk of continued community exposure to unacceptable health and environmental hazards.

When the ACC ceased operations on 30 June 2004 the Department of Local Government, Planning, Sport and Recreation (Department) resumed responsibility for the program. While significant progress was made towards achieving Pilot Project objectives, there remained considerable opportunities for improvements to achieve sustainable infrastructure operations and maintenance outcomes. Therefore, an initiative funded by the Department was implementation of a sustainable program of technical advisory services for environmental health infrastructure operations and maintenance provided to all 17 Indigenous mainland Queensland Councils.

### **2.1 Objectives**

The primary objective for the O&M Mainland Program is to improve the health and wellbeing of Indigenous communities by providing an integrated operations and maintenance program focused on whole of asset life infrastructure provision and management.

Other specific objectives are:

1. To assist operations and maintenance of infrastructure in water supply, sewerage and waste management.
2. To improve asset management.
3. To provide technical training.
4. To assist with legislative compliance.

Allied closely with these operation and maintenance objectives is the requirement to develop and sustain ongoing community employment, training and management capability. Facilitating improved employment, skills transfer and training outcomes will enhance a community's capacity for the longer term.

## 2.2 Essential Service Officers

Essential Service Officers (ESOs) are members of Council's infrastructure or works teams. They are responsible for the operation and maintenance of water, sewerage and waste management services. ESOs benefit from the O&M Program through technical advice and specialist training in water industry operations and waste management.

ESOs play a vital role in improving a community's health and wellbeing. They often work closely with Environmental Health Workers and other professionals, which complement and support each other in their respective roles.

## 2.3 Program Structure

To assist the DLGPSR in this program, an intensive procurement process was conducted to secure that the services of an appropriately qualified and experienced service provider. The service provider engaged to assist the Department in this program is the Cairns based office of Maunsell Australia Pty Ltd. The Maunsell Australia team is also composed of Hunter Water Pty Ltd and Simmonds & Bristow Pty Ltd.

Implementation of the program services to the 17 Indigenous Councils is divided among five Maunsell Council Managers. It is the responsibility of the five Council Managers to deliver appropriate advice, maintain communication and ensure delivery of the services. Specialist assistance such as training is provided by Simmonds & Bristow Pty Ltd and system operations by Hunter Water Pty Ltd. Strategic program management is coordinated by the Department.

Essential to the effectiveness of this program structure is development of close collaboration and communication among all parties involved. This ensures that the Councils are provided a high level of service at all times.

## 2.4 Services

The services to be provided for this Program are:

### *Technical Advisory Services*

1. Conduct site visits to each community at least once every three (3) months to assess the operational status of the water supply, sewerage and waste management infrastructure systems. Provide technical advice to enhance the capacity and capability of the systems to sustainable levels of operations and maintenance.
2. Carry out weekly contact with the ESO and/or infrastructure unit.
3. Assist in the development and improvement of an asset management culture for water, sewerage and waste management infrastructure systems within the Council and the community.
4. Monitor legislative compliance to ensure that the infrastructure systems are being operated and maintained satisfactorily.
5. Provide advice to the Department and Council to help ensure that appropriate technology for the infrastructure systems is considered.

### *Training*

1. Prepare training needs analysis for ESOs and update as required.
2. Facilitate a training program for ESOs and other identified council staff.
3. Develop ESO orientation, technical training and support materials to strengthen existing knowledge and provide increased skills capacity.

#### *Consultation*

1. Carry out ongoing liaison with infrastructure staff, Council management and relevant stakeholders to encourage acceptance of the ESO's role, facilitation of their responsibilities and coordination of related projects.
2. Provide information from time to time to update government agencies and other stakeholders on outcomes and status of infrastructure operations and maintenance.
3. Support development of effective communication mechanisms for ESOs.
4. Provide support and assistance for public awareness activities relating to sustainability of the infrastructure systems.

#### *Other tasks*

Undertake other tasks in an ad hoc basis in support of the Program.

### **2.4 Community Infrastructure Audit**

A key activity of the O&M Program is an intensive condition audit carried out on the infrastructure, the operations and maintenance and staff capacity. This process identifies the current state of the infrastructure and provides training needs analysis. Ongoing technical assistance and an appropriate site specific training program are then implemented.

The audit identified a large range of issues ranging from simple items which can be rectified by a change of work practices to a requirement for new infrastructure. Identified issues were assessed according to criteria of; public health, occupational health and safety and compliance. The criteria were selected as they are considered to be the best indicators of whether a system is operating at the required level.

In order to provide a structured feedback to the Council, issues identified during the audit were classified according to the categories of; minor maintenance, major maintenance and capital works.

The audits provide a valuable management tool for current and future operational activities, plan future infrastructure and assist in making appropriate financial decisions.

### **2.5 Water Demand Management Project**

Another exciting project managed through the O&M Program is a pilot water demand management project currently being implemented in the Northern Peninsula Area of Cape York. The pilot project seeks to determine an appropriate delivery methodology, actions and evaluate outcomes prior to commencement of water demand management in the other community locations.

Implementing water demand management strategies essentially involves fostering sustainable behaviours among the stakeholders. The water demand management project is using an approach shown to be very effective at bringing about behaviour change which is community based social marketing (CBSM). When water demand management principles are communicated using a CBSM approach, priorities of different users are considered to ensure that water supplies are used wisely in the public interest. This approach involves: identifying barriers to a sustainable behaviour, designing a strategy that utilises behaviour change tools, piloting the strategy and evaluating the impact of the program.

### **3. CONCLUSION**

The provision of essential environmental health infrastructure mitigates the risk of continued community exposure to unacceptable health hazards, including skin infections, eye and ear and respiratory infections, diarrhoeal diseases and rheumatic fever.

Improving the capacity of the Council and community to maintain essential services is a primary focus of the O&M Program. To this end, the program in its present form is making significant progress. Continued progress and improvements to environmental health infrastructure operations and maintenance will require ongoing cooperation among the broad range of stakeholders including all levels of government, the community and other stakeholders.

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Nganampa Health Council (1987). *UPK Report*.

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