1. OVERVIEW

The Water Resources Division (WRD) has been operating a project management system since 1977. In 1988/89, the program consisted of 70 projects, some of which were composed of a number of jobs. For example, Production Bore Drilling Program contained 135 jobs.

A Project Management Committee exists to ensure the orderly introduction of new projects and the development and evaluation of work briefs, as well as the regular review of all projects from initiation to completion. The Committee comprises senior professional staff from Hydrology and Laboratory Divisions in Darwin, and from the Water Resources Branch in Alice Springs. Officers from Strategic Management Directorate and Utilities Directorate attend as observers.

This approach has the benefit of providing flexibility and enables different disciplines to provide input to each task. An important feature of the system is the close liaison with clients as part of the process of developing project briefs and incorporating projects within work programs.

The system complements a cost accounting system which enables financial management of projects, jobs, direct advice and indirect time of all Water Resources staff within PAWA.

2. INTRODUCTION

These procedures apply to the initiation, documentation, monitoring and reporting of all project activity. Where work is requested by other areas of PAWA, other Government agencies or the public, which will require significant input (say more than five staff days/crew days), it should be considered within the project system. Where such work does not require significant input it will be recorded against the relevant 'other direct advice' job number of the cost accounting system.

2.1 Aim and Objectives

The aim is to achieve the efficient and effective allocation of Water Resources staff to meet requirements and priorities of PAWA and other client projects.
Objectives are:

(a) The orderly introduction of new projects into the program and the development and evaluation of work briefs.

(b) To review all projects from initiation to completion to guarantee the efficient operation of the program. Projects should be completed in a timely and cost effective manner.

(c) To provide information for the collation of the project program for eighteen months in advance.

3. PROJECT CLASSIFICATION

3.1 Project Categories

Projects are classified into one of three categories, to identify the source of funding:

1. Business: Projects which are required for the provision of water related services to PAWA consumers, ie functions which are undertaken to deliver services to consumers whether or not charges are levied on specific users of these services. Includes PAWA town water supply and sewerage systems, and AES water supplies.

2. Client: Projects carried out to provide a service or furnish information to other Government Departments, Local Government, private industry, private groups and individuals.

3. General Community: Projects which are not directly related to the provision of services to consumers but are carried out for the wider community benefit or in the Territory’s or national interests. Source of funding is the NT Government for NT water resources assessment, control and statutory requirements, and provision of some advisory services.

The reporting of projects' progress and actions required also includes a list of projects, not yet commenced, for which category, type and priority still need to be determined.
3.2 Project Programs

For the purpose of internal management and control, projects have been further grouped under programs of:

- Water Supply
- Flood Management
- Waste Water Management
- Baseline Inventory

(i) Water Supply Program

This consists of all projects which are associated with the provision of water supply services, and includes investigation and assessment of surface water and groundwater for existing and proposed supplies, and monitoring of existing supplies. In the case of groundwater, it includes construction of production bores.

(ii) Flood Management Program

Flood management activities undertaken include floodplain mapping, estimating flood heights and discharge, developing and operating flood warning systems and providing an advisory service on floodplain management matters.

(iii) Waste Water Management Program

This program includes investigations and studies to assist the operation and augmentation of sewerage systems, monitoring the effects of waste discharge on surface and groundwater systems, and monitoring mining discharges to ensure protection of the environment.

(iv) Baseline Inventory Program

This program is aimed at collecting surface water and groundwater information for short, medium and long term development. The particular objective of the Baseline Inventory Program is to cover gaps in knowledge about NT water resources in prospective areas of development where no "primary" client exists, and therefore no information would be collected without Water Resources involvement.
3.3 Project Type

Projects are one or a combination of the following types:

- Assessment: Gathering of data and its interpretation to better understand the water resources.
- Planning: Using the knowledge acquired by assessment to make predictions about the way in which water might best be used in the future.
- Development: Changing water resources in some way to satisfy needs, for example by damming a river or pumping from a groundwater aquifer.
- Regulatory: Setting limits on the ways in which water is used, to maximise community benefit.
- Policy: Giving balanced direction to overall economic development and the conservation of natural resources.

3.4 Priorities

It is not intended to rank each and every project from the most to the least important. Within project categories, project programs are consistently presented in order of:

1. Water Supply
2. Flood Management
3. Waste Water Management
4. Baseline Inventory.

Within each project program, projects are in general ranked in order of priority.

3.5 Classifying a Project

Most projects can be readily classified into a particular category and program; for example "Alice Springs Water Supply Augmentation" is in Category 1 (Business) in the Water Supply Program. A small number of projects have multiple classifications, probably the best example being the project "Surface Water Inventory and Data Processing" which is in all three categories (various sources of funding) and all four programs.
4. PROJECT MANAGEMENT COMMITTEE (PMC)

The PMC has the responsibility of achieving the aim and objectives as outlined in Section 2.1.

The tasks of the Committee are technically oriented and included:

(a) Detailed technical review of the Initiation Sheet and Brief for each project.

(b) Monitoring of the technical aspects of certain projects at key times of those projects.

(c) Endorsement of the final report for each project (refer also to Section 9.2).

4.1 Committee Membership

The PMC consists of the following members:

Chief Engineer Hydrology (Chairman)
Project Officer Water Resources (Secretary)
Principal Engineer Groundwater
Principal Engineer Surface Water
Principal Chemist
Water Resources Superintendent South
Officer from Strategic Management (Observer)
Officer from Utilities - Water Engineering (Observer)
Other staff by invitation

The Secretary's duties include:

(a) Maintain a single register of all Initiation Sheets and Briefs.

(b) Distribute an agenda to the Director, all Committee Members, invited staff and Notice Boards two working days before each meeting.

(c) Prepare typed minutes and distribute to PMC members, the Director, Notice Boards and all Branch heads within five working days of a meeting.

4.2 Committee Meetings

These are held on a bi-monthly basis with additional meetings as required.
4.3 Committee Reporting

The Director Water Resources is to be provided with minutes and all briefs accepted by the committee for his endorsement. The minutes will be attached to the agenda of the next WRD Management meeting for information and feedback. The report schedule will also be suitable for providing input for external reporting requirements.

5. PROGRAMMING

5.1 Project Timetable: as per Brief - responsibility of Principal and Manager.

5.2 Staff Schedule: Detailed schedule of all staff input over at least the next eighteen months - responsibility of Branch and Section heads.

5.3 WRD Programming: Timetable of all Division projects, based on staff programs where available, for at least the next eighteen months and identified future needs for longer term jobs - responsibility of PMC, to be carried out by the Secretary. This timetable will be updated on a bi-monthly basis or more regularly as required, and provided as an agenda information item for WRD Management meetings.

6. PROJECT INITIATION

Each project is to be initiated using a Project Initiation Sheet and commenced under conditions as laid out in the Project Brief.

6.1 Project Initiation Sheet

An Initiation Sheet (see Attachment A for format) will be used to initiate all technical projects. The endorsed Sheet is required not only to activate a project in the Project Management System, but also to open it in the Cost Accounting System.

While any Water Resources officer may initiate a project, projects will usually be initiated by Branch or Section Heads at the direct request of clients. The Initiation Sheet will be submitted to the Project Committee Secretary for action.
All Initiation Sheets will be reviewed by the Project Committee and may be:

(a) Accepted in principle (requires the recommendation of at least the respective functional head and one other principal)

(b) Returned for further information

(c) Not accepted, and returned to the initiator with reason.

All Initiation Sheets received and accepted by the PMC will be noted in the minutes and sent to the Director for endorsement. Once endorsed, the Sheet is forwarded to the Job Costing Clerk who will allocate a job identification code, and enter the project on the accounting register.

The initiation and acceptance of urgent projects is described in Section 6.3.

6.2 Project Brief

Once an Initiation Sheet has been accepted by the PMC, endorsed by the Director, and entered on the accounting register, a Manager and Principal will be appointed by the PMC Chairman to prepare the Brief. They should liaise as necessary with other staff (including staff in other Divisions and Branches with a functional interest in the Project content) and with the client to ensure his needs are met by the Brief.

The Brief should present the following:

- detailed objectives (with written endorsement from client if possible)
- general approach/methodology
- description of individual activities involved, sufficient for functional team members to understand what will be required of them and why
- listing of the principal, manager and team
- timetable (on pro-forma - see Attachment B) endorsed by appropriate Branch Heads
- estimated costs (Attachment C) and cash flow (on timetable pro-forma)
- specific staff management and financial management requirements of the Manager and Principal.
The Brief will be submitted to the Committee Secretary for tabling at the next Committee meeting. The Secretary will ensure that the Brief covers the required information as listed above. All Briefs will be reviewed by the PMC and may be:

(a) Accepted.
(b) Not accepted and returned for further information.

Once accepted, the Brief will be submitted to the Director for his endorsement. Verbal presentation of briefs may be required to be made to the WRD Management Committee by the Manager and/or Principal.

6.3 Urgent Projects

All projects, including urgent ones are to be initiated and implemented through the Project Management process. However, urgent jobs can be 'walked' through the system to be accepted by the PMC and endorsed by the Director Water Resources. The impact of such projects on the timing of other projects, and the resourcing of such projects, is to be clearly documented prior to acceptance and endorsement. Formal acceptance will be made at the next PMC meeting.

7. PROJECT COMMENCEMENT

No work should commence on a project except in accordance with an approved Brief, and unless funding has been authorised.

8. PROJECT SUPERVISION AND CONTROL

8.1 Project Supervision

(a) The Project Manager is responsible for day-to-day direction, co-ordination, financial control, and reporting of the job. He/she is also responsible for day-to-day client liaison during the course of a job.

Depending on the size, degree of complexity, and type of project, the project manager may be any appropriate professional from P2 to P5 or a Principal or Senior Technical Officer.
(b) The Project Principal provides a senior reference person to the Project Manager, and is responsible for general oversight and periodic review of progress. In many instances the project principal will be a functional head such as the Principal Engineer Groundwater or the Principal Engineer Surface Water. For those projects where the relevant functional head is not project principal, the functional head should be referred to at the time the project is initiated and briefed, at key stages of the project, and to review the project report(s).

(c) Occasionally the project principal and manager may be the same person. For example, in the case of a straightforward project being handled mainly at P1 level, an appropriate P4 may be both manager and principal.

8.2 Project Team

The Project Team consists of all staff, crews and consultants serving the project as scheduled and costed within the Brief. It also includes any functional head or specialist providing assistance.

8.3 Financial Control

Prime authority to commit funds will be assigned to the Manager, who may allocate delegations (within PAWA regulations) for portion of the project’s budget to relevant project team members.

8.4 Files

Managers will ensure that all relevant material is recorded on file.

Types of files to be raised include:

- A registry file, which will contain a copy of all forms, briefs, minutes, instructions, financial authorisation, costs and cash flows and other material relevant to the administration of the project, including communications between the client(s) and the various staff involved directly in the project.

- Technical working files, which will be maintained on each project by the team, and will contain all working notes, calculations, maps, etc. At the completion of the project, these files will be registered in the technical data archive.
9. REPORTING

9.1 Progress Reports
Principals will report technical progress on every project being conducted under their oversight, every two months or as required by the PMC. A project summary will be maintained by the Committee Secretary (format at Attachment D). The information contained in the summary will form input to the Division's bi-monthly report.

9.2 Final Reports
All projects will culminate in a report.
Preparation of the draft will be the responsibility of the Manager. A review team will be responsible for review of the draft. The team will be made up of the Principal, and other staff as requested by the PMC.

The final report, its distribution list and letters of transmittal will be endorsed by the PMC and forwarded to the Director Water Resources for approval.

The Director may decide to seek approval of the Chairman or Minister for distribution in certain cases.

At least three copies of each report will be lodged in each of PAWA's Darwin and Alice Springs libraries.

The original, or unbound copy of the manuscript will be stored in the technical data fire secure storage area on the first floor, Sasco House.

10. ALICE SPRINGS OFFICE ARRANGEMENTS
Day-to-day management of the Alice Springs office is the responsibility of the Water Resources Superintendent South, who is responsible directly to the Regional Manager Southern. The Alice Springs structure includes people performing many (but not all) functions similar to the three Divisions in Darwin.

Technical function heads in Darwin have functional direction over respective activities in the Southern Region.

Project Principals for projects carried out from Alice Springs may be locally based (ie Water Resources Superintendent South) or Darwin based depending on the type and complexity of the project, and its extent (Southern Region or NT wide).
PROJECT INITIATION SHEET

PROPOSED PROJECT TITLE

Project Category: Business/Client/Community

Project Program: Water supply/Flood Man/
Waste Man/Inventory

Project Type: Assess/Plan/Develop/Regulate/
Policy

PROJECT INITIATION SHEET

OBJECTIVE AND DESCRIPTION OF PROJECT*

REASON FOR PROJECT AND PERCEIVED PRIORITY*

FILE REFERENCES

LIBRARY REFERENCES

ESTIMATED COST INFORMATION

Cost Centres involved (tick)

Dwn ASP

Management...

Hydrology...

Laboratories...

Drilling...

Test Pump...

Monitoring...

Tech Serv Admin...

Estimates for Expense Types

$ estimates for Expense Types

Manpower... days...

Energy...

Stores & Materials...

Transport...

Travel...

External Services...

General Expenses...

TOTAL EXPENDITURE

RECOVERIES...

ESTIMATED* START DATE./. . . .COMPLETION DATE./. . . .

INITIATING AGENT: Name./. . . .Date./. . . .

RECOMMENDATION OF PROJECT COMMITTEE

Accepted

Returned for further information

Rejected

Reason

DESIGNATED PRINCIPAL MANAGER*

ASSIGNED JOB NO.

*Attach any relevant information
+Provide details if available

DIRECTOR

ENDORSED/NOT ENDORSED
# Project Timetable and Cash Flow

**Project Title**  
__________________________________________________________  
**Job No.** _____________

**Prepared By:** __________________________________________  
**Date:** __________________________

**Endorsed By:**  
**Budget Officer:** __________________________  
**Section Heads:** __________________________________________ 

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**Subsequent Stages**  
Stage 2

**Projected Cash Flow ($'000)**

**Manpower**

**Energy**

**Stores & Materials**

**Transport**

**Travel**

**External Services**

**General Expenses**

**Total**

---

*Use following symbols for key target dates*

- R: Review
- C: Consultant Brief
- D: Commission Consultant
- E: End of Stage
- I: Interim Report
- F: Draft Final Report
- A: Final Report

---

**Attachment B**
# PROJECT COST ESTIMATE

## PROJECT TITLE

---

## JOB No.

---

## PREPARED BY:

---

## DATE:

---

## CHECKED BY:

---

## DATE:

---

### ESTIMATE OF EXPENDITURE ($ \times 10^3 $

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### COST ESTIMATE

- PRELIMINARY ESTIMATES
  - FOR SUBSEQUENT STAGES (IF APPLICABLE)
    - STAGE 2
    - STAGE 3
  - TOTAL ESTIMATE
  - COST RECOVERY (IF APPLICABLE)
### PROJECT JOB NUMBER

- **A. WATER SUPPLY**
- **B. FLOOD MANAGEMENT**
- **C. WASTE WATER MANAGEMENT**
- **D. BASELINE INVENTORY**

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<th>3. (GENERAL COMMUNITY)</th>
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**NOTE:** Where a project falls into more than one project category it will only be listed ONCE in the **FIRST** category in which it appears, together with the % of activity related to the other categories.

**eg:** PRODUCTION BORE DRILLING PROGRAM
Category 1 80%
" 2 20%