PROCUREMENT OF GOVERNMENT INFRASTRUCTURE PROJECTS

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Inquiry into the Procurement of Government Infrastructure Projects

Personal Submission by David Smith (M. Eng. Science; BE; Fellow, Engineers Australia)

Overview

1. I preface my submission to the Committee by posing one or two questions that might help the categorisation and compilation of what might be a mountain of material received by the Committee from a multiplicity of viewpoints.
2. In the beginning, the **definition** of each of the key words in the Terms of Reference needs to be carefully considered. I have my opinion, others will have theirs and the Committee will have its own opinion depending on the reasons behind this Inquiry. Will the Committee address this sooner or later? If it does this at the beginning it may be able to set aside some Submissions as outside its terms of reference and so simplify and reduce the amount of analysis required.
3. I see **procurement** as a form of "journey" with the process the "means to an end". Many organisations use the term **"project delivery pipeline"** to represent the linear relationship between the steps involved. Does the Committee accept this concept?
4. And there must be "horses for courses" ie one size does not fit all - such that "**best**" for one category of project is not automatically **"best"** in another. For example, NSW Treasury has Capital Works Guidelines that apply to projects > $100m. The NSW Local Govt Act requires a Council to call tenders for any contract >$150,000. There are further requirements for contracts (projects?) between $10m and $100m.
5. How **risk** is managed and apportioned, along with **time,** are key factors **in differentiating these.** Will the Committee be categorising the responses? In simple terms, the following five process categories are listed for illustrative purposes:
   a. Design and document (with an input based (prescribed) Specification), tender and construct, then handover to owner's operators. This is seen as the traditionally proven least risk and least cost path as still preferred by NSW Public Works
   b. Tender, then design and construct under one contract - when time is of the essence or when an output based Specification is preferred
   c. BOOT = build, own, operate and transfer as one contract when private sector finance involved
   d. PPP = Public Private Partnership as one contract – mega projects?
   e. Alliance arrangement as one contract – mega projects?

Background assumptions

I will assume the Inquiry is being conducted in the context of all of the following documents **whose intent I support as "best practice",** with "good" requirements that I find particularly appealing listed below -

1. the NSW Govt "Procurepoint" (overarching) procurement framework guideline documents for construction that include the NSW Procurement Policy (owned by NSW Treasury) and code documents for all NSW Govt procurement.

   Without listing all of these, I will highlight that these include

   1. a Market approaches guide that replaces tendering guidelines; and

   2. typical contract and tender clauses and schedule (Quality Management System Guidelines Appendix F)

3. accrediting NSW Public Works – whose project management system has been externally certified as compliant with International Standards Organisation (ISO) Quality and WHS systems

2. the NSW Capital Project Procurement Manual M1993-42 (issued in 17/11/1993 with a review date 17//7/2016) that

   1. provides an integrated package of initiatives directed at reform in the construction industry;

   2. achieving greater consistency of practice across all of the Govt's construction agencies;

   3. **achievement of best practice within the public sector**

   4. increased opportunities for innovation

   5. improved efficiency and integrity in the performance of capital expenditure projects

   6. monitoring, advice and instruction by the Construction Policy Steering Committee reporting to the Capital Works Committee of Cabinet

3. NSW Govt Public Works **"Project Services"** suite of capabilities to assist other agencies manage their asset procurement - including

   1. program management

   2. procurement planning and design

   3. project planning and management

   4. contract management and administration

   5. construction management

4. NSW Govt Department of Premier and Cabinet Division of Local Government "Capital Expenditure Guidelines" December 2010 that apply to capital projects for infrastructure facilities – generally exceeding $1m -

   1. Where project costs are in excess of $10m, there are additional requirements for Business Management, Risk and Probity Project Plans, tender evaluation and reporting.

   2. There are *(excellent)* Capital Expenditure Review Minimum Requirements including

      Section 10.3 - Assess the capacity of Council to manage the project to completion and into the future by

      1. **Determining the capacity of Council's management and skill base to undertake the project**

      2. **Identifying the responsibilities of Council to the project on a year-by-year basis throughout the project's lifetime (to be itemised and costed)**

      3. **Undertaking a risk assessment including**

         1. **governance and management structures – the appropriate structure will depend on the type and complexity of the project and the stakeholders involved; and**

         2. **compliance requirements**

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   3.   **Considering the appointment of a Steering Committee**

   4.   **Designating a Project Manager with appropriate skills, expertise and experience and ensuring sufficient delegations are granted to allow the project manager to undertake the work.**

3. Sections 10.4 to 10.7 cover priorities (in accordance with the Integrated Planning and Reporting (IP&R) framework), alternatives, financial implications, and public consultation.

4. The Guidelines do not apply to a wide range of projects including Public Private Partnerships, nevertheless, it is stated "it is expected that in accordance with best practice, Councils should apply the principles of these guidelines to all capital projects".

5. NSW Audit Office Performance Audit Reports including

   1. No. 252 - Large construction projects: Independent assurance

   noting

      1. **Existing systems do not provide sufficient independent assurance that large capital project costs are controlled effectively and that scope changes and other variations are warranted and represent good value;**

      2. **The current assurance system also provides limited visibility and assurance for the government regarding project progress, management and performance between contract award and project completion**

   and that the government established

      3. **an Investment Assurance Committee to advise................; and**

      4. **a robust, consistent, independent Investor Assurance Framework across government and across infrastructure life cycle**

      5. **Treasury advises that considerable changes are anticipated or being implemented including a Financial Management Transformation project and continual improvements to State budget management**

   with Recommendations

      6. **That Treasury.... review....including the Gateway Review Process....the assurance system for projects <$100m etc**

      7. **That Infrastructure NSW report publicly on the Investor Assurance Framework**

   2. No. 251 – Country Towns Water Supply and Sewerage program

      noting management of funding under the program has not been fully effective

   3. No. 247 – West Connex: Assurance to the Government

      noting only one independent externally managed Gateway Review was conducted during the period covered by the audit with inappropriate (due to conflicts of interest) reliance on steering committees and boards converting into confusion and lack of clarity with regard to regular, formal monitoring by and reporting to Infrastructure NSW. Some aspects of good practice of internal

> **governance and assurance were implemented effectively as designed and some were not.**
>
> **One Audit Office recommendation is NSW Government agencies should ensure the governance arrangements for future major capital projects include a clear separation of those responsible for delivery, commissioning and assurance.**

Personal Background

I make this submission as a proven performer with a lifetime of experience delivering public infrastructure projects as listed below. I am not a spruiker or consultant with the gift of the gab but am a bureaucratic survivor who delivers - as most recently achieved at Cowra Council as listed below.

I have worked for over 15 years in the "projectised" National Capital Development Commission whose systems were second to none, unique and successful - it is a pity that it is not until now that anybody has promoted these and this has become my passion in my retirement -on behalf of all of the staff of that organisation, disbanded upon proclamation of self government for the ACT.

I have worked for 3 years in the elite Major Projects Group of the first ACT Government when the Chief Minister established the Group to "procure" a Casino for Canberra. This was achieved (via an international architectural competition) along with subsidiary developments in the same complex including a 5 star hotel (now Crowne Plaza) and Royal Theatre.

I have worked for almost 10 years as a Performance (Efficiency) Audit Manager in the Australian National Audit where my audit criteria for reviewing the Sale of Aussat that secured Australia's second telecommunications licence (won by Optus) treated this Commonwealth Asset Sale as a procurement process. An Appendix to that audit report was titled "Best Practice Guidelines for the Sale of Commonwealth Assets" and this was adopted for use world wide by the International Association of Supreme Audit Institutions (ASOSAI).

I have worked for the last 9 years as Cowra Council's only Project Manager providing capital works procurement services (as an in-house contractor) that most Councils will engage NSW Public Works to provide. This has given me a contrary insight as while the organisation is competent in delivering routine repairs and maintenance and operational services, there was limited experience and skills as are required to plan, design, procure and administer major infrastructure projects such as a new sewage treatment plant ($15m), automation and upgrade of the 70 year old water treatment plant ($3.5m) and a new water treatment plant for a village ($1m).

I have developed a version of the NCDC Program and Project Management System suitable for Cowra Council - then presented a paper, outlining how this system works, to the 2014 Engineers Australia National Conference within the Mastering Complex Projects Conference section. **The paper title was changed by the Conference Organising Committee to "Australia's own unique and successful program and project management technique".** It is attached to this Submission in both Word and Powerpoint form.

In support of the paper Councillor Bill West, Mayor, Cowra Council praised the effectiveness of the Monthly Reports submitted to Council during construction of the new $15m Cowra Sewage Treatment Plant, stating "**these were clearly the best project reports Council had ever received**. The project management system gave Councillors confidence that the appropriate representation of Council's interest was first and foremost, with all criteria being quickly assessed and monitored in an easy transparent manner. **The obvious identified and reported milestones were a credit to the Project**

David Smith (formerly NCDC, Canberra; Australian National Audit Office and Cowra Shire Council)

Management and those responsible. The importance of creating, understanding and adhering to a professional project management philosophy is an imperative to good responsible governance be it the public or private sector ".

Terms of Reference

That the Committee inquire into and report on

"What is world's best practice for procurement of government infrastructure projects"

with particular reference to:

1. Gateway decision making – what is the best process to ensure efficacy of PPP compared to other methods
   a. **NCDC invented project delivery <u>Milestones </u>that were an internal precursor to the external Gateway Review mechanism. They work well, are a proven technique and are recommended to be introduced into all NSW government project and infrastructure procurement systems whatever their size. They provide a discipline that is equally appropriate and applicable to small projects, large projects and mega projects, including projects using PPP and Alliance delivery mechanisms. For an overview explanation, the Inquiry is referred to the** Word and Powerpoint attachments.

   b. As evidenced by the findings and recommendations in the NSW Audit office reports No. 247, 251 and 252, while NSW Treasury has established a comprehensive set of guidelines/procedures, it is my interpretation that the main reason for the failures observed and reported by the Audit **Office could well be a lack of appropriate experience and/or skills at the top of the key institutions**, especially Treasury - I say this from my personal experience with the transfer/conversion from NCDC to ACT Treasury management upon granting self government to the ACT.

2. Best procurement process and documentation
   a. The NCDC was a projectised organisation with an internal management structure based on two over-arching Committees that performed Gate Review functions viz the Programming Committee and the Planning Committee comprising each Division Head ie Chief Engineer, Chief Architect, Chief Planner etc. For 30 years (from 1958 - 1988) the NCDC successfully built the City of Canberra until self Government was proclaimed for the ACT. The ACT Government Treasury then established a Business Unit titled ACT Procurement Solutions that assumed most of the old NCDC procurement functions **that still operate today delivering over $700m worth of capital works per annum.**

   b. The NCDC program and project management system is considered world's best practice in that it bridges both the American PMBOK methodology and the British PRINCE framework with what has been labelled "**<u>Australia's own unique and successful Program and Project Management System".</u>** It was unique as it preceeded modern day project management theory and practice and it was successful in that it was the key driver behind the successful development of Canberra taking the City from ~30,000 population in 1958 to ~300,000 in 1988. It was brought to Canberra by senior engineers in the NCDC who had worked with American companies on the iconic Snowy Mountains Hydro Electricity Scheme. They "projectised" the NCDC in the early 1960's - away ahead of the rest of the world - and **it worked and I know how it worked.**

   c. **Hence my confidence in recommending this technique/system to the Inquiry.**

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       d. Please read my paper and/or the Powerpoint presentation that explains this all in a lot more detail. Both are attached to this Submission.

3. Standardisation (within NSW?)

       Are there sufficient skilled professionals across all Agencies to achieve this goal?

       The success of the "projectised" NCDC in building Canberra was the **centralisation of infrastructure procurement** for projects within every government department ie we planned, designed, constructed and handed over hospitals, health centres,public housing, shopping centres, roads, parking areas, traffic signal systems, subdivisions, police stations, courts, bus interchanges, schools, parks, national monuments and institutions such as the High Court, National Gallery, Archives, War Memorial; Foreign Affairs, Taxation, Customs and dozens of other office blocks. Two jewels in the crown were the Australian Institute of Sport complex and the transfer of key personnel and all management systems including program and project management for construction of the new Parliament House, on time, by the Queen in 1988.

4. Standardisation nationally within a federal structure
   a. Further to 3 above, my experience as a Performance Audit Manager responsible for the Federal Departments of Transport and Communications and Arts from 1991 to 2000 (when I reviewed the performance of 8 Federal government programs with 6 of these becoming the subject of a formal Inquiry by the Joint Committee of Public Accounts and Audit (JCPAA)) would suggest this would be an impossible task unless championed at COAG level by either the PM, Treasurer or Minister for Finance.
   b. I would be honoured to expand on this statement if asked further by the Inquiry Committee as time does not permit me to commit everything to paper right now!

5. Minimising the cost to contractors
   a. Standardisation as far as possible will definitely assist contractors but the cost to government would be high and the need for an ongoing commitment and its funding would be a challenge to ongoing governments.
   b. Provision of additional funds to a range of professional bodies who would work with Standards Australia, Infrastructure Australia and other peak bodies would be most admirable and is recommended as a practical option. There have been and still are, underfunded attempts to achieve this goal - so the interest and expertise exists within the professions.

6. Achieving optimal contestability
   a. Optimal contestability might be an elusive goal and I devote no time to this endeavour. There are probably academics working on this but it is not my passion.

7. Any other related matter
   a. Achieving the necessary **personal skills** (skill sets) through training and certification of practitioners is my main concern.
   b. All the policies, systems, procedures and processes in the world will not work if there are insufficient appropriately experienced and skilled practitioners who have been given the authority (delegations) to empower and support them lead and manage their task.
   c. I support the excellent set of criteria ie intent in the **NSW Govt Department of Premier and Cabinet Division of Local Government "Capital Expenditure Guidelines**" December 2010 that apply to capital projects for infrastructure facilities – generally exceeding $1m - where there are Capital Expenditure Review Minimum Requirements including as per Section 10.3 - Assess the capacity of Council to manage the project to completion and

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into the future by determining the capacity of Council's management and skill base to undertake the project etc etc -(also see above)

d. **Establishment of a Project Management Office (PMO)** is also a recommended option to oversee the successful execution of an organization's strategy to be delivered through a portfolio of projects. However, most PMOs are stuck in the project-reporting vortex and while they hear of "the strategic PMO", as one PMO Manager put it, "How do I learn to become strategic?" Becoming 'strategic' requires a strategic focus plus the relevant tools, techniques and processes as well as the requisite knowledge and skills.

Submitted on 10 February 2016

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Australia's Own Unique and Successful Program and Project Management Technique

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Synopsis

David Smith has developed for use within Cowra Council a simplified version of the management system that has delivered successful program and project outcomes in the building of Canberra from 1958 through to this day. That management system which is a uniquely Australian invention of the 1960's and 70's was developed by the now disbanded National Capital Development Commission (NCDC) and continues to successfully serve its successor agency within the ACT Government. This paper explains how it can be as effective for a small project in a small organisation as it is for a large project in a large organisation.

It is suggested that one NCDC technique, here titled **"managing by milestones"**, provides a useful bridge between the American and British project management standards for smaller organisations, such as Cowra Council, that are not familiar with conventional project management theory and practice. In larger organisations with established program and project management systems, this technique is just as relevant, being consistent with procedures now titled within the British PRINCE2 **framework** as Managing Stage Boundaries and Phase/Gate Review.

Current project management best practice theory and education is based on either the American PMBOK **methodology,** as developed by PMI for single projects **o**r PRINCE2 that provides an organisational context.

The new Project Management System currently being adopted by Cowra Council (as explained in this paper) extends current best practice for a smaller organisation in 3 areas. It includes:

1. **Program Management** _at the front end_ – where pre-project processes are recognised and managed by the Executive. This derives in part from the way the NSW Government in its _Local Government Act 1993_ has mandated that Councils must use an Integrated Planning and Reporting (IPR) System;

2. an extended **Completion Stage** _at the back end_ – noting PMBOK, PRINCE2 and standard training courses provide only general reference to the extensive Operations and Asset Management procedures that typically exist within a local government council; and

3. a completely new **WHS compliance stream** _in the middle_ - to cover both Safety in Design and Construction Stages, including an Officer's Duty of Care to "verify" continuing application of safety procedures as mandated by the new and "harmonised" NSW _Workplace, Health and Safety Act 2011_**.**

The program and project methodology and reporting technique described in this paper is offered as both international best practice and a procedure for compliance with Australian legislation, especially workplace, health and safety. That is, it is a mandatory "must have", not a "should have" - particularly for all NSW Councils and any organisation with a capital works project delivery program.

1. Introduction

1.1 **How Project Management contributed to the success of the NCDC**

In 2013, coinciding with the 25th staff reunion since the disbanding of Canberra's National Capital Development Commission (NCDC), the staff published a book (Ed. Ferguson, 2013) titled *"A City Like No Other"* containing the uncoordinated and voluntarily prepared reminiscences of 35 staff members. It records the stories from staff who led a partnership between in-house and private sector resources that was critical to the successful achievement of the Commission's objectives during the 30 years (1958 to 1988) that the NCDC existed.

Central to the inspiration for this paper are five specific references in the book (quoted below) to the NCDC's unique and successful program and project delivery system that has guided the author David Smith since 1974 when he joined the NCDC - well before project management had become an established discipline. The system was developed to assist the assembled team of highly skilled and professional officers meet targets for the completion of projects "and in all 30 years monies appropriated from the Government were spent to the cent (*every financial year*). This was no mean feat" (Browning, 2013)

"The founding staff were of critical importance to this venture. The Snowy Mountains Hydro Scheme was a "Great National Enterprise" which pioneered the integrated process of design and delivery of a large and complex infrastructure project. Several senior engineering staff recruited to the NCDC came from the Snowy Mountains Authority and **they developed a project delivery procedure based on "milestones"** in close alliance with major private sector builders. The great strength of the NCDC was in its ability to plan, design and construct as a seamless process uninterrupted by the disruptions which characterise normal urban governmental administration" (Binning, 2013 and Blood, 2014)

"Two great strengths of the NCDC were its well established decision-making system and central program and finance system. The budget and program, covering thousands of individual studies, planning, design and construction 'jobs', ranging from a few hundred dollars to multi-millions, were effectively tracked and managed from a central system" (Black, 2013)

"NCDC's processes and procedures were way ahead of their time in quality control. **The use of milestones such as PSP's and FSP's was invented by the NCDC** and has become part of the Canberra design vocabulary" (Pegrum, 2013 Note: PSP = Preliminary Sketch Plans and FSP = Final Sketch Plans)

"After reviewing more than 20 Federal Departmental programs as a Performance (Efficiency) Audit Manager after leaving the NCDC, I never encountered one that came near the level of professionalism in project delivery and program management (and therefore success in delivering outcomes) as was practiced in the NCDC environment. In particular **the discipline achieved by the establishment of project delivery pipeline milestones for each stage was unique** ie IB = Issue Brief (to design consultant); CT = Call Tenders; LA = Letter of Acceptance (Award) for a contract; PC = Practical Completion etc." (Smith, D. 2013)

The management by milestones technique was a key element in how the NCDC regularly performed beyond expectation every year for 30 years and became an acknowledged best practice organisation that envied no other!

These reminiscences have inspired David to publish in this paper the essence of that program and project management system. As Cowra Council's only designated Project Manager, David has developed a version of the "managing by milestones" technique that is just as effective for a small project in a small organisation as it is for a large project in a large organisation.

This paper explains how the managing by milestones technique will successfully deliver projects within an infrastructure program but it is readily adjusted to cater for other types of program and project.

A peer review of a draft of this paper contains the following response from Gordon Shannon (2014):

> *"Within the NCDC framework, we actually determined action when the information provided by the system revealed that there were deficiencies emerging which needed correction. The Programme Committee role may have been a bit cumbersome but it did allow for discussion and suggestion about where to go from there. I do believe also that it kept those carrying responsibility for projects to be on their toes and anticipating action needed. It also ensured that the whole gamut of interests in the organisation (eg finance, budgeting, user requirements, public relations etc) were informed and could participate as required. I also still believe that the ways we went about such things as determining user requirements, controlling our agents, requiring proper assessment of the value of work done before approving payments and insisting on contractual performance were significant in our success. I would like to see another paper incorporating some commentary about the practical and personal aspects of implementing the activities in the way the NCDC went about things."*

1.2 The current standards

There are currently two standard Project Management approaches recognised world-wide as "international best practice" and in addition, the recently published international standard ISO 21500:2012 "Guidance on Project Management".

The American based Project Management Institute (PMI) has published a Guide to the Project Management Body of Knowledge (*PMBOK Guide*) which is the acknowledged de facto world standard METHODOLOGY but it addresses only **single projects.** It defines (42 no.) project management **"processes"** that are generally recognised as good practice." These are derived from interaction between (ten) **knowledge areas** being *integration, scope, time, cost, resources, quality, risk, communications, procurement and stakeholders* and (five) **process groups** relating to the typical organisational **delivery cycle** being *initiation, planning, executing, closing* with an overarching *monitoring and control* group. *PMBOK Guide* states "Initiating processes are often done external to the project's scope of control by the organisation or by program or portfolio processes." Stanislaw Gasik, PMP has advised "there is a large set of other PMI standards for more complicated entities: program management, portfolio management and whole organization (OPM3)."

The United Kingdom Office of Government Commerce developed an extensive suite of arrangements encompassing project governance issues including portfolio, programme and project management. The Intellectual Property in these methods is understood to have been recently outsourced to AXELOS Limited which remains 49% owned by the UK Government. This suite of methods includes PRINCE2 (Projects IN Controlled Environments Version 2) that places the management of projects in an organisational FRAMEWORK through the use of seven processes with associated templates. It comprises a daunting methodology for all but the most serious and appears overly comprehensive for most small and medium sized organisations to understand without specialist consultant advice on how to utilise "scalability" techniques to reduce the extent of processes and documentation.

International Standard ISO 21500 Guidance on Project Management follows PMBOK providing high-level description of project concepts and processes without providing detailed advice on the project in its programme and portfolio context. It also incorporates governance and other concepts from PRINCE2 and other sources.

1.3 **An Australian Technique "Bridging" the Overseas Standards**

The NCDC model was developed to service the infrastructure delivery programs containing a mix of large, medium and small projects required to plan, design and construct the city of Canberra and it did not fail. The key "management by milestone" technique bridges the American and British standards by labelling as a Milestone each deliverable of each process group or stage gate as defined in the standards. PRINCE2 describes this step as Reporting Stage End (SB5) within Managing Stage Boundaries where results of a stage are gathered together and reported so that progress is clearly visible to the project management team. It also presents a plan for approval to proceed to the next stage.

Use of this simple mechanism for bringing individual project managers and organisation management personnel together on a regular basis during the project life cycle (or delivery pipeline) to "celebrate" achievement of each Milestone, ensures timely monitoring of progress and prompt addressing of issues should the requirements of each deliverable at any stage along the pipeline appear to be at risk or even of not being achieved.

Key personnel took these management practices when they transferred to the New Parliament House Construction Authority and assisted that organisation deliver the building on time for the Queen to open as part of Australia's bicentennial celebrations in 1988.

Other senior NCDC staff who transferred to the newly formed Australian Capital Territory (ACT) government in 1989 continued to use these systems within ACT Public Works and ACT Procurement Solutions - the ACT Treasury Business Unit responsible for program delivery in not just infrastructure (transport, water, energy and communications) but other portfolios including education, health, justice, community and social services.

Evolution of the system continues within the ACT Administration where in 2013/14 over $700 million expenditure in project work has been oversighted by the Chief Minister's Economic Development and Treasury Directorates. The use of Project Delivery Milestones remains a key platform in the successful ongoing delivery of the ACT Capital Works program.

In 2009, Cowra Council commenced construction of a new $15m Cowra Sewage Treatment Plant. As Council's Project Manager, David Smith provided Council with a detailed progress report every month - see Figure 1. The format provided overview information on both the separate;

- phase/stage reporting for the small work packages specifically established for local contractor involvement - being the site bulk earthworks, lagoon construction, landscaping, staff amenities building and chemical storage facility; and
- milestone reporting for the $9 million main contract for the treatment process plant package.

Councillor Bill West, Cowra Council Mayor (2008 to present), has praised the effectiveness of these Monthly Reports saying "these were clearly the best project reports Council had ever received. The project management system gave Councillors confidence that the appropriate representation of Council's interest was first and foremost, with all criteria being quickly assessed and monitored in an easy transparent manner. The clearly identified and reported milestones were a credit to the Project Management and those responsible. End of stage milestone reports are the appropriate interface between overview information for management/Council and detailed project manager level information. The importance of creating, understanding and adhering to a professional project management philosophy is an imperative to good responsible governance be it the public or private sector ". The project was delivered under budget and since commissioning, the Treatment Plant has met all performance requirements.

This management by milestones technique could be effectively utilised by the NSW Government as it grapples with the best way to deliver "the $7.4 billion infrastructure backlog works required to bring assets considered to be in poor or unserviceable condition to a satisfactory standard. 37% of NSW Councils need to implement or improve their infrastructure management practices and procedures". (LGIA, 2013) This may imply that there is also a need in these Councils to embrace improved capital works delivery procedures. It has been estimated that the deficiency in capital spending (infrastructure renewal gap) for all council purposes in NSW was between $400 and $600 million per annum in 2006.(IIFS of NSWLG, 2006)

1.4 **Stage / Phase Gate Process Defines the Modern Day Equivalent**

Downloads from websites contain text to indicate the internal "stage/phase gate process" is the modern day "management by milestone reporting" technique and that this process is traceable back to NASA "phased project planning" for aerospace projects.

Kerzner (2006) states "The stage-gate process was created because the traditional organisational structure is primarily for top-down, centralized control and communications, all of which are not practical for organizations that use project management and horizontal workflow. The stage-gate process evolved into life-cycle phases. Stages are phases of the decision-making process where development work is (progressively) completed. Phase–gate systems divide the innovation process into a predetermined set of stages composed of a group of "prescribed, related and often parallel activities." Since each future stage is more expensive than the previous, it is imperative that management with an understanding of the program context is involved in approving passing between stages.

P D Trak Solutions (2014) web site "offers a variety of predefined stage/phase-gate process templates (project management templates) that contain best practice based process definitions and each contains a set of tools that are optimized for managing that particular type of project. The stage/phase-gate process is the framework for implementing a structured project management process. The stage/phase-gate process defines a sequence of phases and gates that each project must pass through, providing a roadmap for the consistent, successful execution of projects. Each phase has an objective statement, a set of required tasks and deliverable documents. This information helps organizations in two ways: 1) it minimizes the risk that the project team will overlook important tasks that are needed for project success and 2) it defines the points at which the management team will assess progress and make decisions whether to continue investing in the project. The process guides the project team to provide the information necessary to support this decision making process."

The Tasmanian Government Project Management System embeds Milestones as a feature for internal, central reporting up and managing down. (TG PMG, 2011)

1.5 External Gateway Reviews

There is another form of Gateway Review Process that is external and not to be confused with the internal "management by milestone reporting" technique -

The Australian Government has introduced the Gateway Review Process (Gateway) to strengthen the oversight and governance of major projects/programs and assist *Financial Management and Accountability Act 1997 (FMA Act)* agencies to deliver agreed projects/programs in accordance with the stated objectives. Gateway involves short, intensive reviews at critical points in the project/program's lifecycle by a team of reviewers **not associated with the project/program**. This provides an arm's length assessment of the project/program against its specified objectives, and an early identification of areas requiring corrective action.

The NSW Government developed the Gateway Review System to help agencies improve their procurement discipline and achieve better service results from their activity. A small team of experienced procurement practitioners**, not involved in the projects**, conduct the reviews. The teams assess the progress of projects against seven criteria: Service delivery; Affordability and value for money; Sustainability; Governance; and Risk, Stakeholder and Change management.

ENGINEERS AUSTRALIA

Submission: Mastering Complex Projects
Smith, David (Cowra Council) – Australia's Own Unique and Successful Program and
Project Management Technique

2. The NCDC Milestone Reporting Technique

2.1 Milestone Reporting

The simplicity of the management by milestone reporting technique is illustrated in Figure 2 where the three key reporting levels are outlined. The state of progress of a project is discussed informally (with essential note-keeping only) in what this paper terms a "conversation" and once a Milestone has been achieved, due thanks and congratulations are able to be "celebrated" as part of the ongoing team-building and re-confirmation process. This step contrasts with current education practice that typically identifies a token celebratory event ("party") after completion of the project when in reality the game is all over for the main players.

Figure 2 identifies how the level of detail in the information "reported up" to the next level of management decreases consistent with the KISS principle - Keep it Simple Stupid. Conversely, there is a sense of cascading down of the information collected and reviewed to ensure each level of management focuses on its key role and is not overloaded as follows:

2.1.1 The **Executive manage a Multi-Project Program** comprising a large number of projects (see Level 1 in Figure 2 and the Directing a Project box in Figure 3) by monitoring and reviewing Whole of Project information such as the Total Cost along with Start and Finish Dates and % Complete perhaps with a Red/Amber /Green signal as well. The amount of single project information is kept brief as the Executive typically only want an overview of overall project delivery performance but if a major milestone has been missed or is in jeopardy this would be specifically reported and discussed.

A Program in this context embraces the list of projects assigned by an organisation in accordance with its Corporate Structure. Cowra Council has four Programs being those assigned to the General Manager, Corporate Services, Environmental Services and Infrastructure and Operations.

A Portfolio in this context embraces the list of programs assigned by the organisation (possibly to separate agencies) in accordance with its Corporate Structure. Portfolios are more likely to be found at Federal and State Government Departmental level. For instance the Federal Government's Finance portfolio is diverse with five agencies each having a series of programs that provide budget and financial management services and advice; electoral services and support; Australian Government online delivery; information and communication technology management; non-defence asset management; asset sales; the administration of the Australian Government's general insurance fund, investment funds and superannuation schemes; Commonwealth land policy; discretionary compensation mechanisms; and the administration of Parliamentarians' entitlements.

2.1.2 **Directors manage and report Milestones** (see Level 2 in Figure 2 and the Managing Stage Boundaries box in Figure 3) by reviewing and controlling the work of the Project Managers they supervise. Directors then report summary information (including exceptions) up to the Executive. The amount of single project information reviewed and discussed is increased to include all of the Phases/Stages defined for each project with the relevant Milestone being defined as the Output (Deliverable) for that Phase/Stage. These Milestones are the basis for monthly upwards reporting (feedback) and downwards advising (directing and controlling) on issues affecting overall project delivery in accordance with organisational goals and context. They are established during the Project Planning phase in response to the Sponsor's Requirements. If time is the critical factor, the milestones need to be programmed in reverse order i.e. backwards from the required Completion Date, with resources (cost) and risk adjusted up accordingly. If cost is the most critical factor, then the project can be programmed from the Start Date with probably more time available to address and minimise all perceived risks during the earlier planning and design stages.

2.2 The topics discussed (and documented for the record) during "milestone setting", and in later "milestone progress reviewing" conversations could, depending on project complexity and issues, include all of the issues raised and identified in;

- PMBOK being - integration, scope, risks, activities, program, budget, actual costs, human resources, procurement, quality, communications, stakeholders and change management.
- PRINCE2 as a gate review under "Review and decision points" and "Managing stage boundaries" - see Figure 3. "Within any project there will be key decisions, the results of which will have fundamental effects on the direction and detailed content of the project. There is thus a need for the Project Board (Sponsor) to review the direction and ongoing viability on a regular basis. The benefit these end-phase/stage assessments bring to the project include providing a "fire break" for the project rather than let it run on in an uncontrolled manner" (OGC, 2005) and
- ISO 21500:2012 being - Direct and control project work; Control changes, scope, resources, schedule, costs and risks; Perform quality control; Administer procurements; Manage communications and Close project phase or project

2.3 **Project Managers manage and report Activities and Tasks** required to achieve each Milestone. This information, as depicted as Level 3 in Figure 2 and the Managing Product Delivery box in Figure 3, will usually derive from the single project Work Programme which should have a Work Breakdown Structure **(Milestone WB)** outlining broad Activity areas and/or Packages - typically sub-contractor activities such as Bulk Earthworks, Roads, Lagoons, Landscaping, Treatment Plant, Buildings etc.

2.4 Then at the next level down, Tasks - typically the separate trades managed on a day by day basis on site through such mechanisms as Pre-Start meetings and Toolbox Talks e.g. earthworks excavation and backfill, concrete formwork and reinforcement, steelwork, sewer and stormwater pipework, pump and motor installation, electricals etc.

3. The Major Milestones

A **Sponsor Requirement** Statement for each new "idea" (or user requirement) is the first Milestone. It is labelled **SR**. These labels were in-house NCDC vernacular**.** Management and staff conversations around the corridors would often include the likes of "...and by the way, have you got the SR yet for that new school?"

While a template for this statement is the inevitable result of modern day project management maturity within an organisation, it can be as simple, short and jargon free as its author wants it to be. It could be a simple statement of WHAT is wanted, WHEN it is needed and HOW many $ are available.

A higher authority within the organisation should then approve further work i.e. committal of resources to this topic by developing the "idea" and expressing it in organisation-speak as a **Project Brief**, labelled **PB -** the second Milestone. This Milestone is also the Outcome (Deliverable) for PMBOK Stage 1 Initiation. Some use the term Project Charter.

The idea may then sit in the organisation's books until such time as further funds are allocated and approval is given to proceed to the Planning Stage and on completion of this, the resultant **Project** (Management) **Plan**, labelled Milestone **PP** is achieved. This Milestone is also the Outcome (Deliverable) for PMBOK Stage 2 Planning. In an infrastructure delivery program, **Project Planning** usually involves collection of background data and supporting information perhaps in the form of Preliminary Studies and a Business Case. Approval to proceed beyond this point will depend on organisational or grant funding approval.

In order to develop the idea further, a **Concept** (functional) **Design (**labelled Milestone **CD)** may precede **Detailed Design** drawings, technical specifications and legal contract documentation to enable seeking quotes or calling tenders **(Milestone DD).** Upon approval of the documentation signifying achievement of these Milestones, approval is given to proceed to a procurement stage whose tasks have a series of established Milestones defining the standard public body procurement process as follows;

>   **RFQ/RFT/RFP** for Request For Quotes or Request For Tenders or Request For Proposal
>
>   **OT** for Open Tenders
>
>   **CA** for Council (or as delegated) Approval to award a contract
>
>   **LA** for Letter of Acceptance (or Award) of contract

Once construction commences, **Monthly Reporting** (with the Milestone label **MR**) occurs cyclically for as long as required until **Physical Completion** (with the Milestone label **PC**) is achieved. The date of this Milestone represents the Outcome for PMBOK Stage 3 Implementation but the associated paperwork (covering acceptance of the Deliverable) all lies within PMBOK Stage 4 Completion.

Completion Milestones are;

>   **PC** for Physical or Practical Completion of any contractual arrangements
>
>   **FC** for Financial Completion of all budgetary allocations including variations and claims

FR for Final Report, usually including documentation of any Lessons Learned

AC for Administrative Completion including Safety Management System, Asset Management, Inventory and Insurance update matters

The PMBOK Administrative Closure Procedure states "This procedure contains all the activities and related roles and responsibilities of the project team members ....to transfer the project products and services to production and/or operations ....it addresses actions and activities necessary to

- define stakeholder approval requirements for changes and all levels of deliverables;
- confirm that the project has met all sponsor, customer, and other stakeholder's requirements;
- verify that all deliverables have been provided and accepted; and
- validate that all completion and exit criteria have been met for the project.

The Moreland Group training package prepared for Engineering Education Australia states "Most projects get to 90% complete and fade out - they don't actually finish because people have moved on".

At Cowra Council, Milestone **AC** for **Administrative Completion** has been introduced as unless separately identified, monitored and signed off, these tasks tend to be overtaken in the excitement of Commissioning, Handover and Official Opening ceremonies. In this period, the external contractor will have left town, the consultant project team has likely been disbanded and/or will have exhausted their allocated funding leaving the in-house Line Manager with an arduous paper-work task. The expanded role for this milestone at Cowra Council recognises the difference in roles between the NSW Government department capital works delivery agencies which are not burdened with the routine role of a Local Government Council for ongoing Asset Management and Operations and Maintenance functions as is as depicted in Figure 5.

Hence, an additional requirement has been added to all capital works contracts. The contractor is now required to prepare and explain during Handover and Training a full set of new Standard Operating Procedures (SOP) and accompanying Safe Work Method Statements (SWMS) that have been developed in full consultation with the Operators. This is a safety precaution to ensure Council's Operators are fully conversant with the operational requirements of every new feature on the first day after handover has been signed off. Prior to that date the Contractor assumed primary responsibility for and operated any equipment installed within its contract. From the first day after Handover/Commissioning, Council assumes the primary duty of care for ensuring a safe working environment and becomes answerable to WorkCover and/or perhaps a Coroner if there is a Notifiable Incident. Most "standard" Technical Specifications were silent in this area leaving Council's Line Manager responsible for producing the SOP and SWMS procedures after Handover/Commissioning and it did not happen - leaving Council exposed legally on and from Day 1.

That completes the explanation overview for the straightforward and logical, almost linear "project delivery pipeline" approach being adopted by Cowra Council. It offers small and medium organisations that might be new to project management a relatively simple approach to start with. And it is compatible with international standard ISO 21500, the American PMBOK and key components from the British PRINCE2 framework.

4. How Milestone Reporting Better Informs a Council's Legal Requirements

4.1 Cowra Council project management system

The Cowra Council project management system through its dependence on the milestone reporting technique also provides a mechanism for compliance with both:

- the Integrated Planning and Reporting (IPR, 1993) requirements within the NSW *Local Government Act 1993 (see Section 4.2 and Figures 6 and 7);* and
- An Officer's Duty of Care to "verify that both workplace compliance and safety response processes are resourced and timely as part of a continuing application by the organisation as required by the (as "harmonised" Federally) *NSW Workplace, Health and Safety Act 2011*. *(see Sections 4.3 and 4.4 and Figures 8 and 9)*

4.2 NSW *Local Government Act 1993* Integrated Planning and Reporting (IPR) requirements

The NSW *Local Government Act 1993* contains a set of mandatory procedures prescribing how Councils must follow Integrated Planning and Reporting (IPR, 1993) requirements. Figure 6 refers.

At the macro level these identify that every Council must have

- a Community Strategic Plan spanning 10 years after community engagement;
- a Delivery Program spanning 4 years with 6 monthly reporting;
- an Operational Plan detailing the year's activities with 3 monthly reporting;
- a Resourcing Strategy embracing financial, workforce and asset management planning;
- perpetual monitoring and review activities - all feeding into the Annual Report

These requirements align neatly with the five *PMBOK Guide* project management **process groups** being *initiation, planning, executing* and *closing* and an overarching *monitoring and control* group.

Figure 7 illustrates this alignment with the Cowra Council project management system as follows:

Project Initiation correlates with both Community Strategic Plan and Delivery Program activities

Project Planning and Executing (**Implementation**) correlate with Operational Plan activities

Project Closing includes handover to ongoing Operations (repairs and maintenance) personnel

Monitoring and Control correlates with perpetual (cyclical) monitoring and review activities that are enabled best by utilising the milestone management technique. Figure 7 indicates the placement of the milestones within a whole of life cycle context and how Cowra Council's three infrastructure planning, delivery and operations stages align with the requirements of

the Act. Senior Corporate management are to control forward planning (pre-project) functions particularly the Community Strategic Plan and Delivery Program. Infrastructure personnel are to manage and control the Operational Plan which includes capital works delivery and Operations personnel are to manage and control Standard Operating Procedures, repairs, maintenance and asset management functions.

The colour codes used to define the four Project Management System stages as depicted in Figures 2 and 4 are intended to match the colours for these same stages when depicted in Figure 7.

The 2013/14 "Cowra Council Plan" includes- "Adequate <u>planning</u> to ensure resource allocation is optimised remains the key to a sustainable future for Council.....". This is achieved through centralised (top down) programming and project planning by senior corporate management to Operational Plan stage. Portfolio and program management are the PMBOK and PRINCE2 labels for this centralized (top down) planning by management of the methods and processes used to analyse, review and collectively manage proposed projects from "Idea or Wish list" through Delivery Program to Operational Plan stage. This planning covers both the pre-project activity of determining the optimal resource mix in accordance with the organisation's goals and strategic plan and the project direction role of scheduling activities to best achieve operational, resource and financial goals.

4.3 WHS Compliance Control and Verification Reporting

There is another new factor (Smith, D. 2013) included in the Cowra Council system covering the now mandated i.e. legal requirement for upwards reporting of **verification** that workplace safety systems are being implemented in accordance with the *NSW Workplace, Health and Safety (WHS) Act 2011* and Council policy.

This is *in the middle* of the overall project Management System - to cover both Safety in Design and Construction Stages, including an Officer's Duty of Care defined in *Section 27 Clause 5 Sub-clause (f)* to *"verify both workplace compliance and safety response processes are resourced and timely"* as part of a continuing application by the organisation of safety procedures. The verification process is discussed in 4.4 below.

The *WHS Act* at *Sections 20 to 26* imposes seven "further duties" on the organisation and Figures 8 and 9 are an attempt to correlate roles deriving from standard project management practice with these further duties as very specifically defined in the *Act.*

A perplexing aspect of the wording in the Act defining these further duties is that four have been specifically labelled viz **Designers** (Section 22), **Manufacturers** (Section 23), **Importers** (Section 24) and **Suppliers** (Section 25). These four have all been assigned a "Task delivery role" in Figures 8 and 9 at Level 4b – the lowest level of responsibility.

The other three **"further duties"** roles defined, but not specifically labelled in the *WHS Act* have been classified in Figures 8 and 9 higher up the reporting and controlling chain. It is suggested that they generally refer to the middle management and supervisory roles that are the focus of this paper as follows -

• **Project Manager** (Integrator) role – see *WHS Act Section 20: Persons with management or control of a workplace*

- **Line Manager** (Operational) role - see *WHS Act Section 21: Persons with management or control of fixtures, fittings or plant*

- **Principal Contractor, Engineer, Architect** (Activity coordinator) role - see *WHS Act* Section 26*: Persons that install, construct or commission plant or structures.*

Anyone who considers there is a possibility that they qualify for one of these roles should read, and re-read, the *WHS Act* as, if they are implicated, they will have many other aspects to consider under the Act. This paper does not purport to address a full response to the *WHS Act.*

4.4 Controlling and Reporting Levels

The levels in the project management model as depicted simplistically in Figures 8 and 9 serve to clarify the mandated due diligence task and then highlight the last and probably most difficult task to achieve - "***verification***" as defined in *Section 27 Clause (5) Sub-clause (f).* These levels represent the top-down control hierarchy from Officer (Director - at Level 2) to Manager (Management - at Level 3) and then to Principal Contractor/Engineer/Architect (Delivery - at Level 4) and they also represent the bottom-up reporting layers that will deliver the "verification" required up to Board (Council) level. This upwards reporting is the paperwork considered necessary by any project manager within his/her modern day corporate responsibilities - especially if the sponsoring organisation does not currently have an established procedure for this new legal requirement.

The NSW WorkCover Authority web-page states "An officer must verify the PCBU has implemented the work health and safety system and is legally compliant. This includes ensuring board reports include relevant WHS information; ensuring adequate resources and safety processes are in place and being used; actively verifying and auditing safety arrangements; and ensuring the PCBU has identified gaps and provided detailed reports to the board on actions taken to address safety issues." Has your organisation reported to the Board (Council) in compliance with this requirement?

The *WHS Act* makes it mandatory for someone in every organisation to be preparing reports to their Board as verification of full implementation of a work health and safety system - anything less than this will leave the organisation prone to being found liable if there is an incident. There is no out-clause since *Clause 14* states "*A duty cannot be transferred to another person", Clause 15* states "*A person can have more than one duty by virtue of being in more than one class of duty holder"* and *Clause 46* includes "*there is a duty for all workers to consult, cooperate and coordinate activities with other duty holders".*

This may require a paradigm shift within the management practices of some organisations. Perhaps it will bring about a change from only judging and then announcing a project to have been successful if it is delivered "on time and within budget" to including in Board, Council and media releases such key words as "safely" and perhaps "incident free".

Conclusion

Managing projects using the milestone reporting technique (a version of stage/phase-gate review) now being introduced by Cowra Council is a unique and Australian invention. From its origins in the iconic national Snowy Mountains Scheme project, it was perfected by the National Capital Development Commission in the building of Canberra and continues to this day as the key technique across the ~$700 million per annum ACT Government capital works delivery program.

The technique ensures executive (program manager) support of the project manager on a regular basis enabling project progress and issues to be discussed, reviewed and revised in the context of the overall organisation program management criteria. It is just as effective for small projects in a small organisation as it is for large projects in a large organisation.

It is recommended for adoption by all infrastructure capital works program delivery agencies and especially NSW local government councils where it is mandatory for Councils to comply with both NSW *Local Government Act 1993* Integrated Planning and Reporting requirements and NSW (harmonised) *WHS Act 2011* duties and obligations of an Officer to exercise due diligence.

FIGURE 1: Sample Page from recent Monthly Progress Report to Council

PROJECT: Cowra Sewage Treatment Plant	Progress Report # 21 Date: 28 March 2011

1. CURRENT ACTIONS & ISSUES

1. Contract A – Sludge Lagoons (~$3m)
Contractor has completed pouring 6 of the 26 concrete wall panels that will line lagoon No.1

2. Contract B – Treatment Process Plant (~$9m) - see Photos
Contract is under budget and over time. The contract is now at Week 68 of 62 - 6 weeks beyond the approved extended Completion Date of 15 February 2011. Liquidated Damages are being withheld from Progress Payments to cover Council's ongoing project management and contract administration costs. With installation of the Ultra Violet disinfection unit and testing of the computer control system completed on 25 March, the 14 day operational Demonstration of the whole plant using "clean" water from the existing oxidation ponds has commenced.

3. Package C – Chemical Storage Facility.(~$300k)
Contractor has commenced fit-out and the pumps are being tested. Council has still to complete arrangements for transfer and transport of caustic soda from the Water Treatment Plant.

4. Package D – Demolish Existing STP + Miscellaneous.(~$335k)
- **Testing:** Council has arranged a short term consultancy to advise on specialist mechanical/ electrical/ chemical issues prior to Contract B Completion (and Handover). A budget of $20,000 has been established with unspent funds set aside from Contract B for associated Council and Consultant costs.
- **Commissioning:** Council has called select quotes for specialist technical assistance during Cut-in and Commissioning of the Treatment Process by Council staff. A budget of $60,000 has been established with unspent funds set aside from Contract B.

5. Package E – Amenities Building (~$250k)
No action since previous report but quotes are soon to be obtained for further shelving in the store and laboratory.

6. Package L – Landscaping (~$210k)
Quotes have been received and orders placed for the perimeter fence and security gate. Plans are in hand to commence work as soon as the site sheds are removed.

7. Explanation of Financial and Cash flow Report Changes
- NSW Government Sewage Treatment Plant subsidy was received on 2/3/11 in the amount of $1,855,335.
- $80,000 deducted from Contract B budget & transferred to Package D for Testing ($20,000) & Commissioning ($60,000).
- Liquidated damages are being applied for Contract B commencing 15/2/11 and now total $33,600 up to 29/3/11 being 42 days at $800 per day (for a 7 day week as per the contract).

*Key: ** denotes activity is overdue*
* denotes an amended date (since previous report)

2. PROGRAMME MILESTONES
Key programme milestones are summarised in the table below.

Milestone	Completion Date	
	Target	Actual
Contract A: Sludge Lagoon construction		
- Commence Clearing Site	2/08	18/2/08
- Site Cleared	4/08	30/9/09
- Lagoon Bulk Earthworks	9/09	21/12/09
- Foundation Earthworks	5/10	21/5/10
- Lagoon Under Drainage Layer	6/10	1/11
- Lagoon Pipes and Pits	6/10	12/10
- Effluent Overflow Pipe	8/10	11/10
- Lagoon Concrete Lining	4/11*	
- Lagoon Drying Bed Sand	5/11*	
- Lagoon Inlet Pipes	6/11*	
- Road works	2/11*	
Contract B: Treatment Plant construction		
Contract Award	11/12/09	8/12/09
Possession of Site	2/10	15/2/10
Testing + Plant Demonstration	1/11**	
Training	1/11**	
Handover (due Week 62)	2/11**	
Cut in & Commission	7/11*	
Treatment Process Stabilisation	10/11*	
Package C: Chemical Storage facility		
Access Road ($100k)		2009
Chemical Storage Bunds ($150k)	6/10	30/6/10
Caustic Store Roof ($20k)	6/11	
Pipework at WTP ($30k)	12/10**	
Package D: Miscellaneous works		
Import fill ($45k)	8/10	8/10
Wireless Communications ($25k)	10/10	10/10
Waste Water Re-Use Study ($55k)	12/11	
Demolish/Restore Existing STP site ($130k)	1/12	
Test Treatment Plant ($20k Consultant)	4/11*	
Commissioning ($60k Consultant)	7/11*	
Package E: Amenities Bldg construction		
Handover	5/10	30/6/10
Equip laboratory and scale model ($30k)	4/11*	
Package L: Landscaping		
Landscaping ($150k)	2011	
Security Fence ($60k)	2/11	

Project Director: Carl Berry	Project Manager: David Smith		Contact Officer: Matt Parmeter

FIGURE 2: Project Monitoring and Control Levels

FIGURE 3: Managing a stage boundary

FIGURE 4: Milestones for Cowra Council Project Management System

Cowra Council Project Management System – Project Delivery Stages

FIGURE 5: Local Government Asset Management Cycle
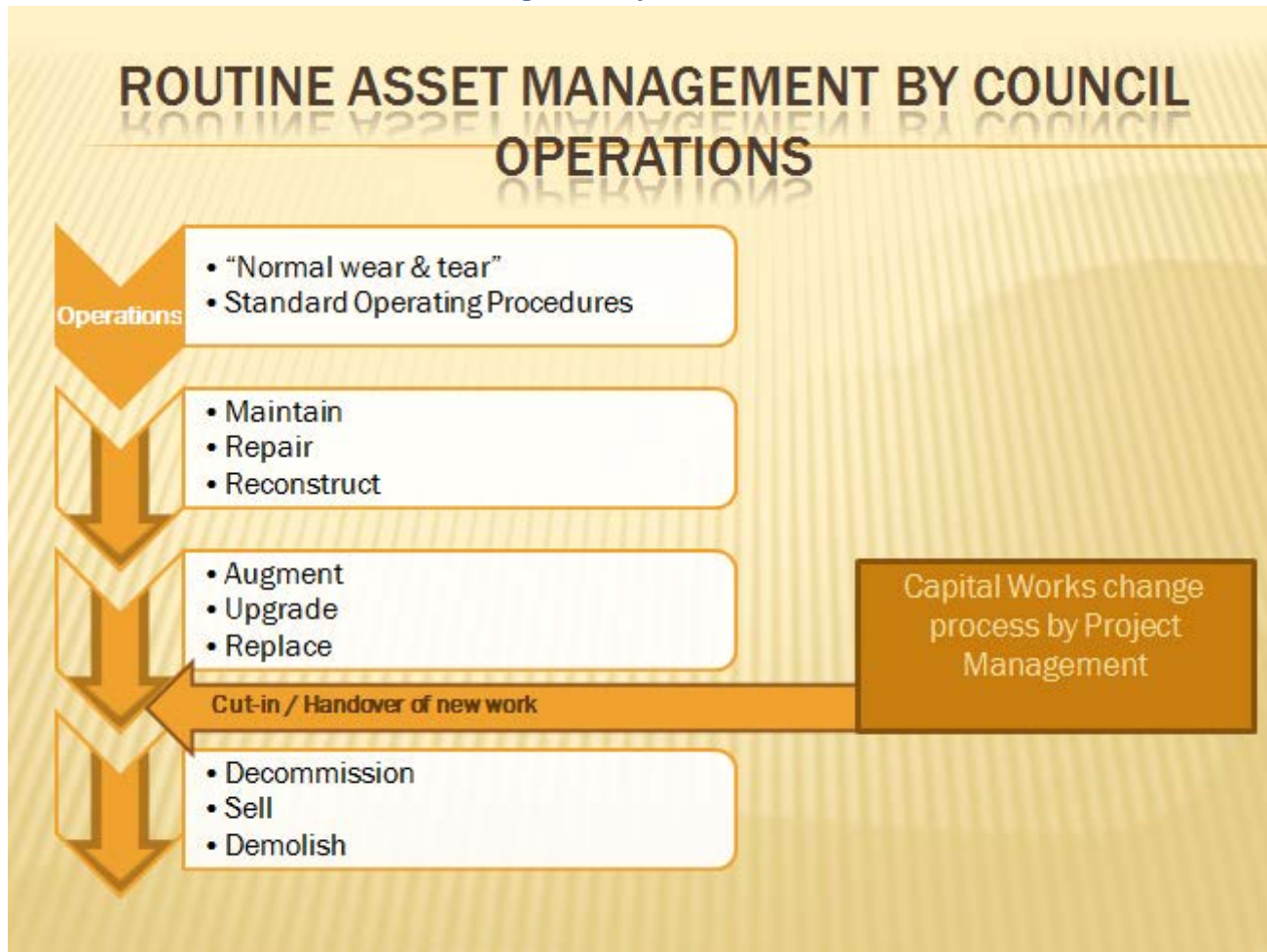
FIGURE 6: Integrated Planning and Reporting Framework

FIGURE 7: INTEGRATED PLANNING AND REPORTING CYCLE DETAILS

Integrated Planning and Reporting (IP&R)

Cowra Council Project Management and Operations Cycle to meet NSW Local Government Integrated Planning and Reporting Requirements
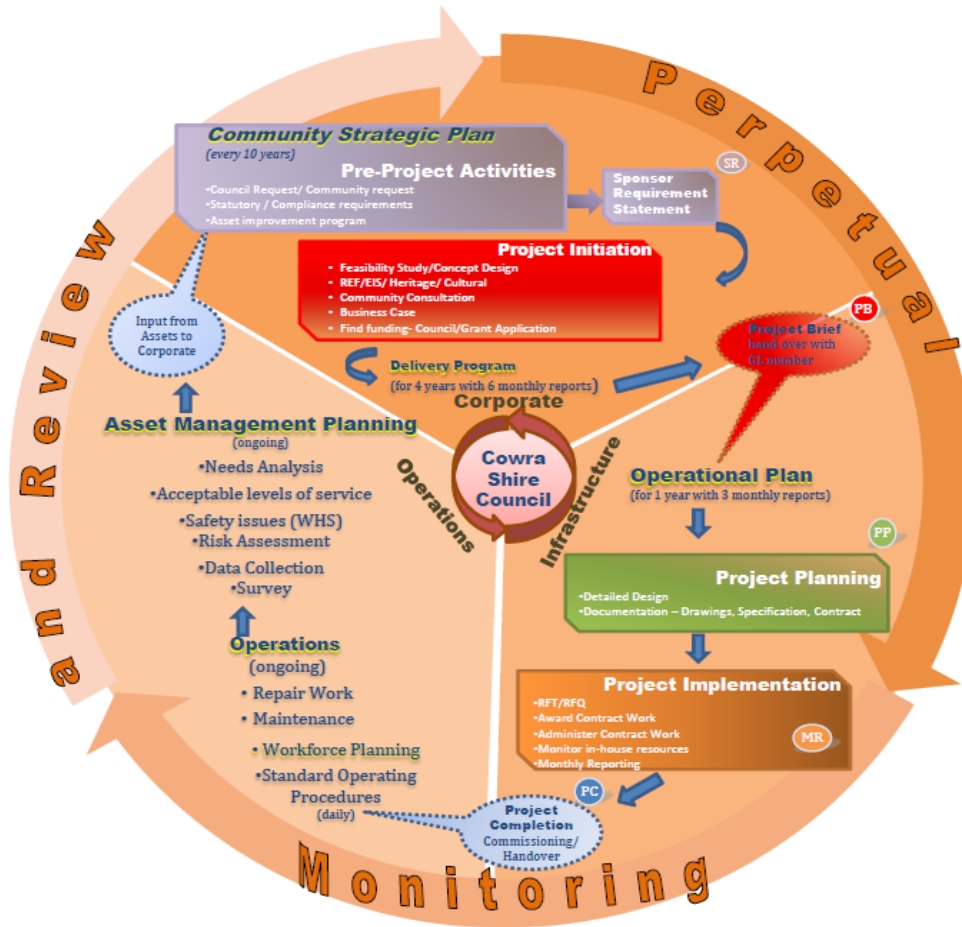
FIGURE 8: Correlation of WHS Act terms with project management levels for controlling and reporting
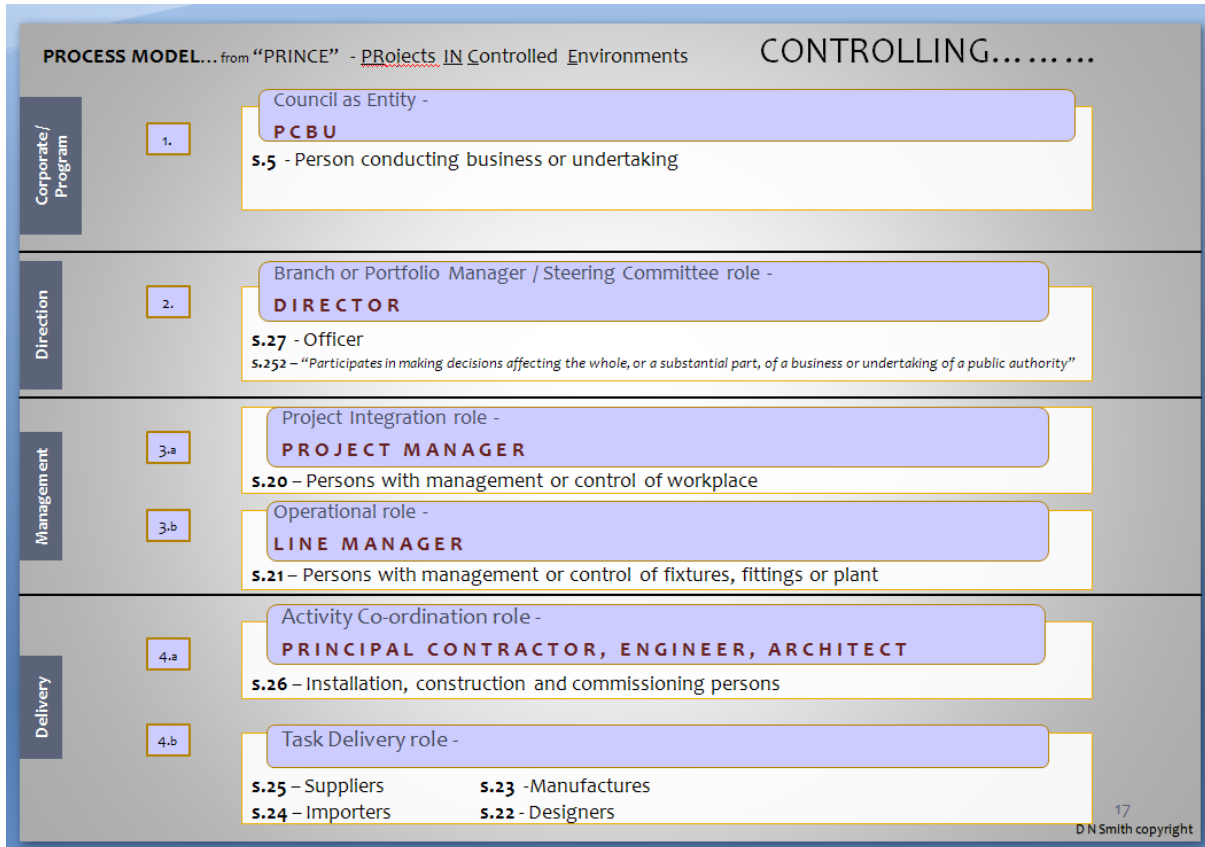
Key: **S.5** refers to *WHS Act Section 5 Person Conducting Business or Undertaking*

FIGURE 9: Management levels for reporting WHS "due diligence" compliance
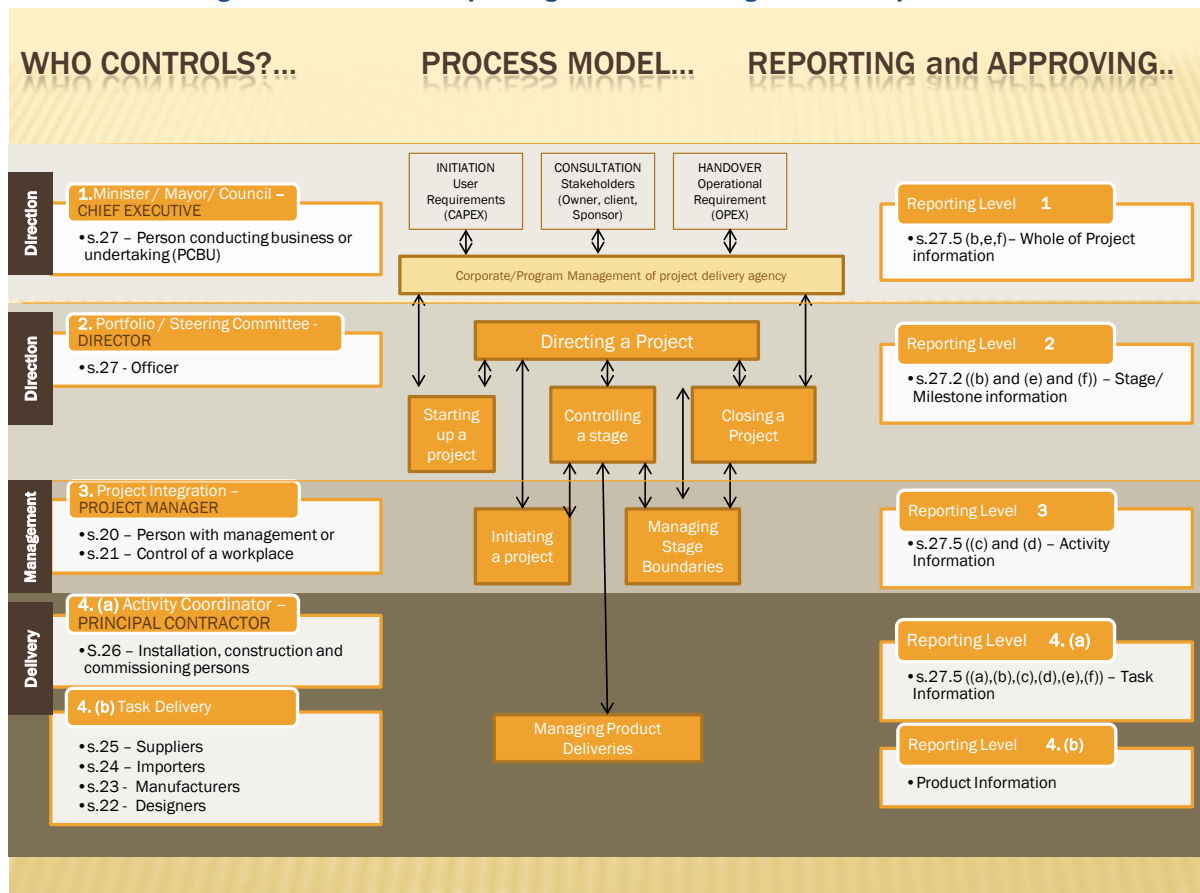
Key: **S. 27.5 (d, e, f) Whole of Project information** refers to *WHS Act Section 27 Clause 5 Sub-clauses d, e and f requiring an Officer, under due diligence, to "verify both workplace compliance and safety response processes are resourced and timely" at "whole of project" level*

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Australia's own unique and successful program and project management technique

David Smith   Cowra Council, NSW

Who am I?

- 1967 – 73   Traffic Engineer / Transport Planner
  - Christchurch City Council and Papua New Guinea Government
- 1974 – 88   Project Manager, NCDC, Canberra
  - Coordinated all City Centre development (Govt and Private)
- 1991 – 2000   Performance Audit Manager, ANAO
  - Federal portfolios of Transport, Communications & Arts
- 2007 – now   Project Manager, Cowra Council, NSW
  - Delivered 3 major capital works infrastructure projects

Why this paper ?

- NCDC staff wrote a book in 2013 – "reminiscences"
  - identified NCDC invented MILESTONES - ~ 50 years ago
  - hence "unique"
  - recalled that NCDC always spent its budget every year
  - hence "successful"

  yet

  - PM consultants claim <u>60% projects fail</u> (IT projects?)
  - This claim has to be refuted for infrastructure work

This presentation covers

- A little bit of history
- Role of Milestones
  - in a Project Management System
- How Project Management principles
  - inform compliance with current legislation
  - make them a "must have" not a "should have"

from iconic Snowy   Scheme - 1949

to Canberra A.C.T.

via "projectised" NCDC   1958 - 1988

1988 Parliament House Construction Authority

A.C.T. Government — 1989 to now

– Chief Minister's Treasury Directorate is still delivering capital works projects totalling $700m per annum

and — 2007 to now

Cowra Council and two NSW Acts

Cowra Council Project Management System

- ensures compliance with *NSW Local Government Act*
  - *Integrated Planning and Reporting requirements*

New South Wales

Local Government Act 1993 No 30

Chapter 13 How are councils made accountable for their actions?

Part 2   Strategic Planning

404   Delivery Program
405   Operational Plan
406   Integrated planning and reporting system

Cowra Council Project Management System

- ensures compliance with "harmonised" *WHS Act*

- *"Duty of Care"* obligations apply to *Officers and Workers*

New South Wales

Work Health and Safety Act 2011 No 10
Construction Work
Code of Practice
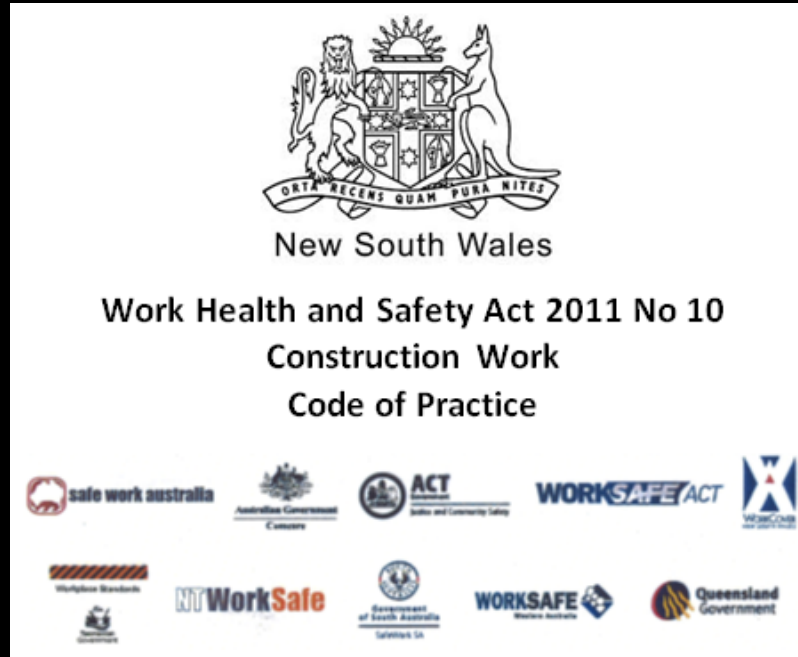
Introduced milestone reporting for new $15m STP

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- Lagoon Concrete Lining	4/11*	
- Lagoon Drying Bed Sand	5/11*	
- Lagoon Inlet Pipes	6/11*	
- Road works	2/11*	
Contract B: Treatment Plant construction		
- Contract Award	11/12/09	8/12/09
- Possession of Site	2/10	15/2/10
- Testing + Plant Demonstration	1/11**	
- Training	1/11**	
- Handover (due Week 62)	2/11**	
- Cut In & Commission	7/11*	
- Treatment Process Stabilisation	10/11*	
Package C: Chemical Storage facility		
- Access Road ($100k)		2009
- Chemical Storage Bunds ($150k)	6/10	30/6/10
- Caustic Store Roof ($20k)	6/11	
- Pipework at WTP ($30k)	12/10**	
Package D: Miscellaneous works		
- Import fill ($45k)	8/10	8/10
- Wireless Communications ($25k)	10/10	10/10
- Waste Water Re-Use Study ($55k)	12/11	
- Demolish/Restore Existing STP site ($130k)	1/12	
- Test Treatment Plant ($20k Consultant)	4/11*	
- Commissioning ($60k Consultant)	7/11*	
Package E: Amenities Bldg construction		
- Handover	5/10	30/6/10
- Equip laboratory and scale model ($30k)	4/11*	
Package L: Landscaping		
- Landscaping ($150k)	2011	
- Security Fence ($60k)	2/11	

Cowra	Project Director: Carl Berry	Project Manager: David Smith	NSW Office of Water	Contact Officer: Matt Parmeter

Councillor   feedback

- Mayor Bill West said   –

  "these were clearly the best project reports Council had ever received – gave Councillors confidence that Council's interest was first and foremost   – with all criteria being quickly assessed and monitored in an easy transparent manner"

- "end of stage milestone reports are the appropriate interface between overview information for management/Council and detailed project manager level information."

Managing milestones technique

- Chief Executive
  - Manages program

- Program Manager
  - Manages milestones

- Project Manager
  - Manages project activities and tasks

Figure 2

Figure 4

Cowra Council Project Management System – Project Delivery Stages

Planning and Reporting Framework
- Reporting
- Communicating
- Documenting
- Reviewing
- Safety

Stage One — INITIATION
- Sponsor Requirement (SR)
  - Title
  - Location
  - Description
  - Reason
  - Program
  - Cost
- Project Brief (PB)
- Stage Two

Stage Two — PLANNING
- Review Environmental Factors? (REF)
- Feasibility Study? (FS)
- Business Case? (BC)
- Work Breakdown Structure (WB)
- Project Plan (PP)
- Stage Three

Stage Three — IMPLEMENTATION
- Concept Design (CD)
- Detailed Design (DD)
- Procurement
  - Request For Quotes (RFQ)
  - Close Tenders (CT)
  - Council Approval (CA)
  - Letter of Award (LA)
- Construction
  - Monthly Reports (MR)
- Stage Four

Stage Four — COMPLETION
- Physical Completion (PC)
- Financial Completion (FC)
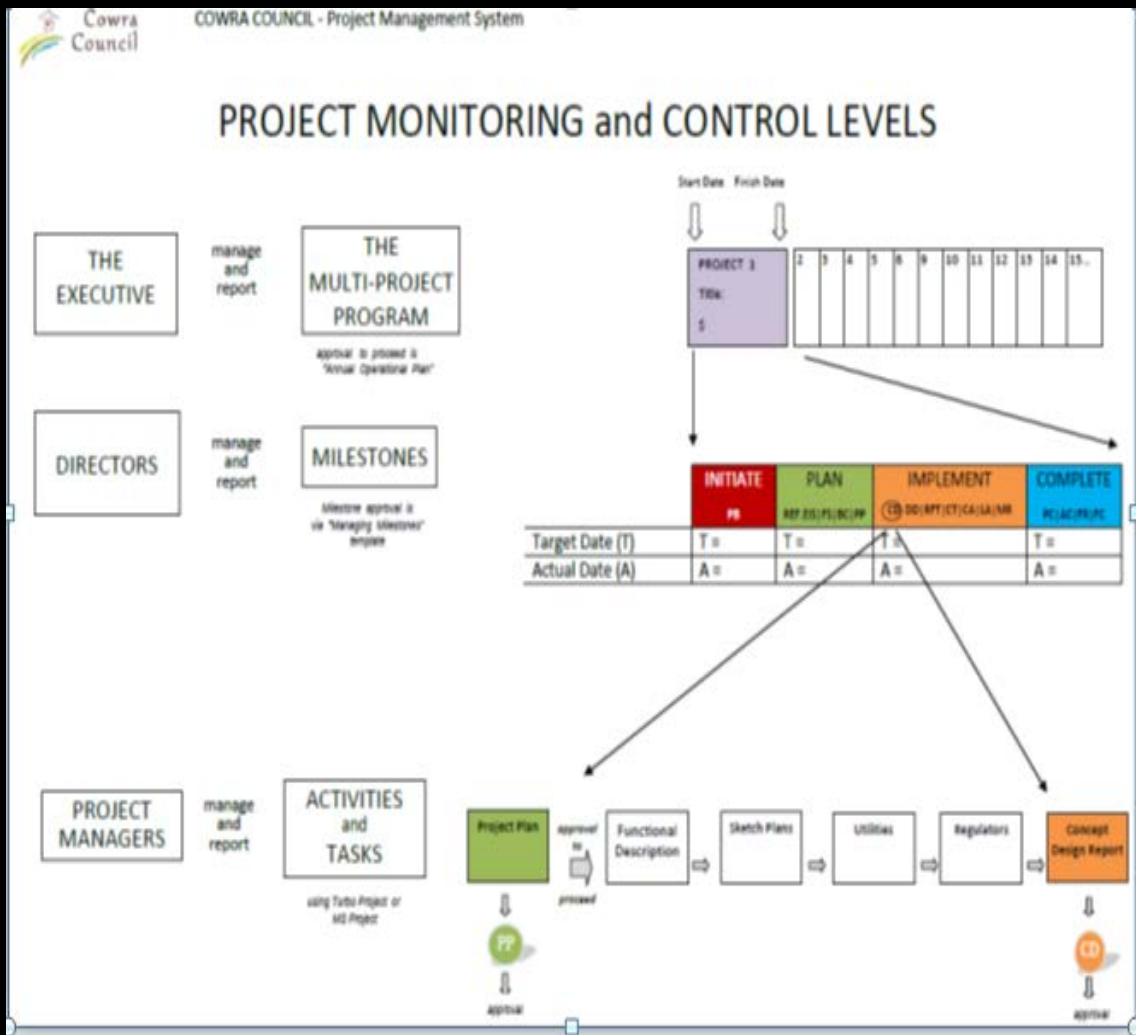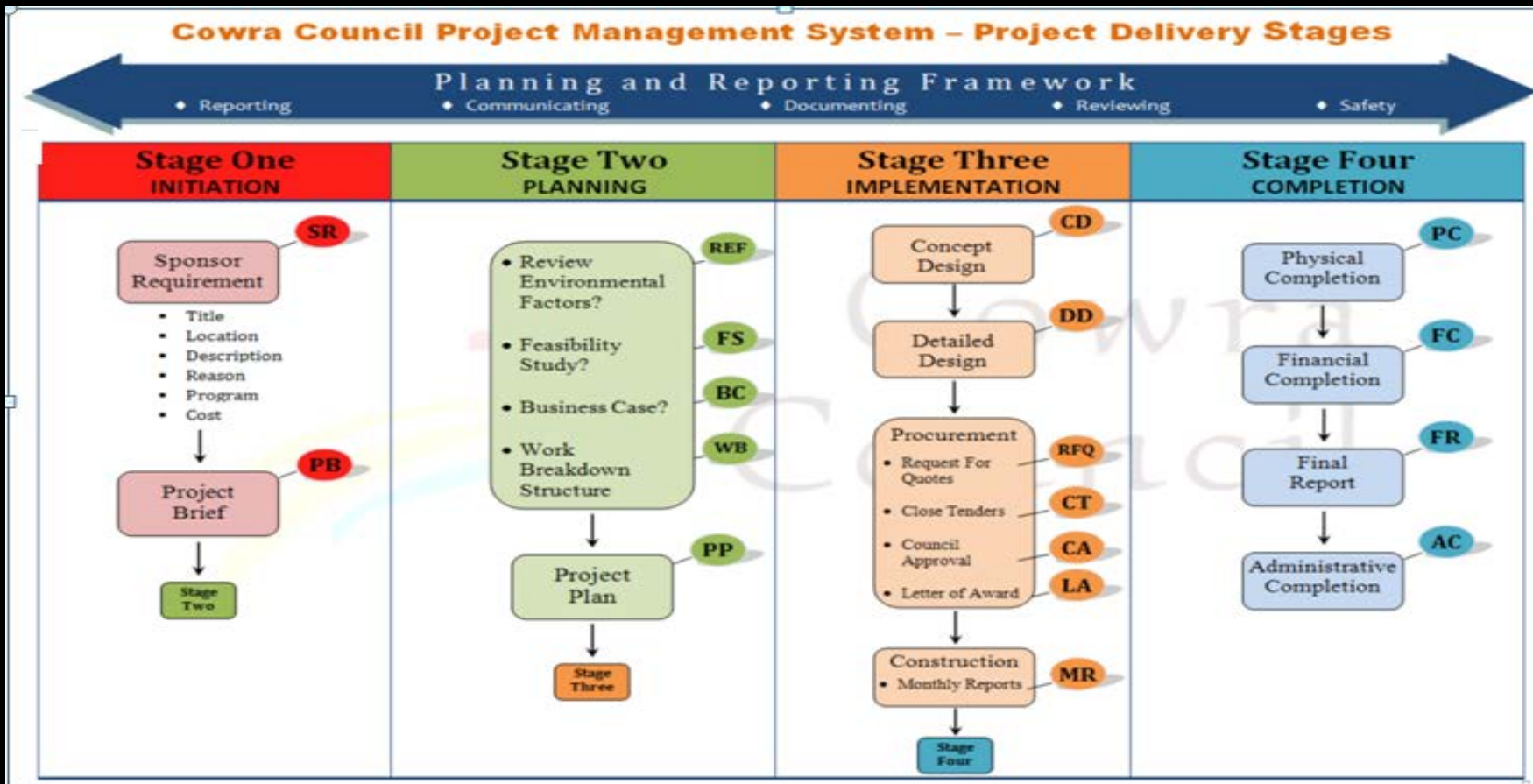- Final Report (FR)
- Administrative Completion (AC)

Project Delivery Pipeline Milestones

- SR - Sponsor Requirement
- PB — Project Brief
- PP — Project Plan
- DD — Detailed Design
- RFT — Request for Tenders
- LA — Letter of Award
- PC — Physical Completion
- FC — Financial Completion

Modern equivalents - since 1980's

- Consistent with PRINCE2
  - *Managing stage boundaries* internally
  - *Gate reviews* tend to be external
- Consistent with PMBOK
  - *Initiation Phase* has milestones SR and PB
  - *Planning Phase* has milestone PP
  - *Implementation Phase* has milestones CD, DD and MR
  - *Completion Phase* has milestones PC plus AC and FC

Key to successful program delivery

- Schedule all milestones in every project plan
- Discuss and approve all milestones
- Celebrate regularly during (not after) - or
- Implement timely corrective action
- Applies to small, large, simple or complex projects

Key to successful project delivery

- Plan forwards to deliver within budget
  - assumes time and risks adequately covered
- Plan backwards to deliver on time
  - may require increased cost and risk
- Monitor progress towards milestones with regular conversations

Figure 3 based on PRINCE2 - Managing stage boundaries
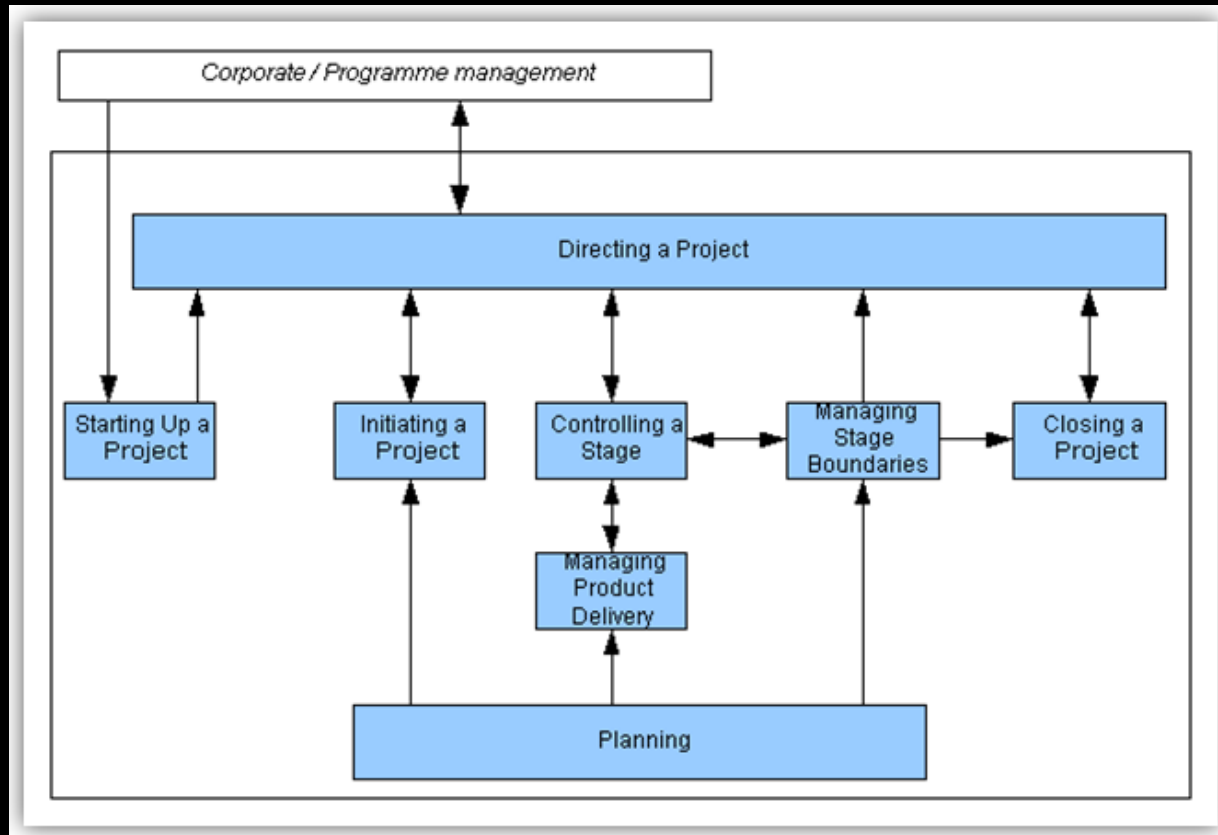
Figure 5: Council Routine versus Change
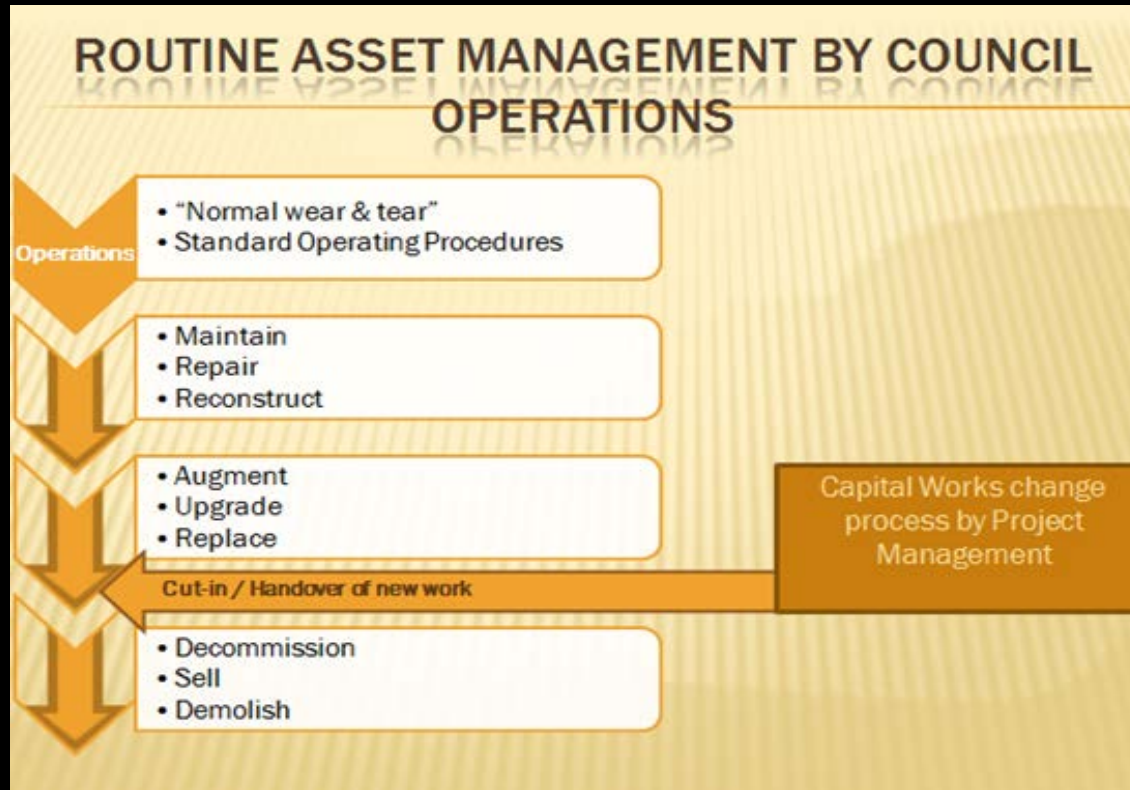
Figure 6: Integrated Planning and Reporting Framework

Figure 7   IPR within Council
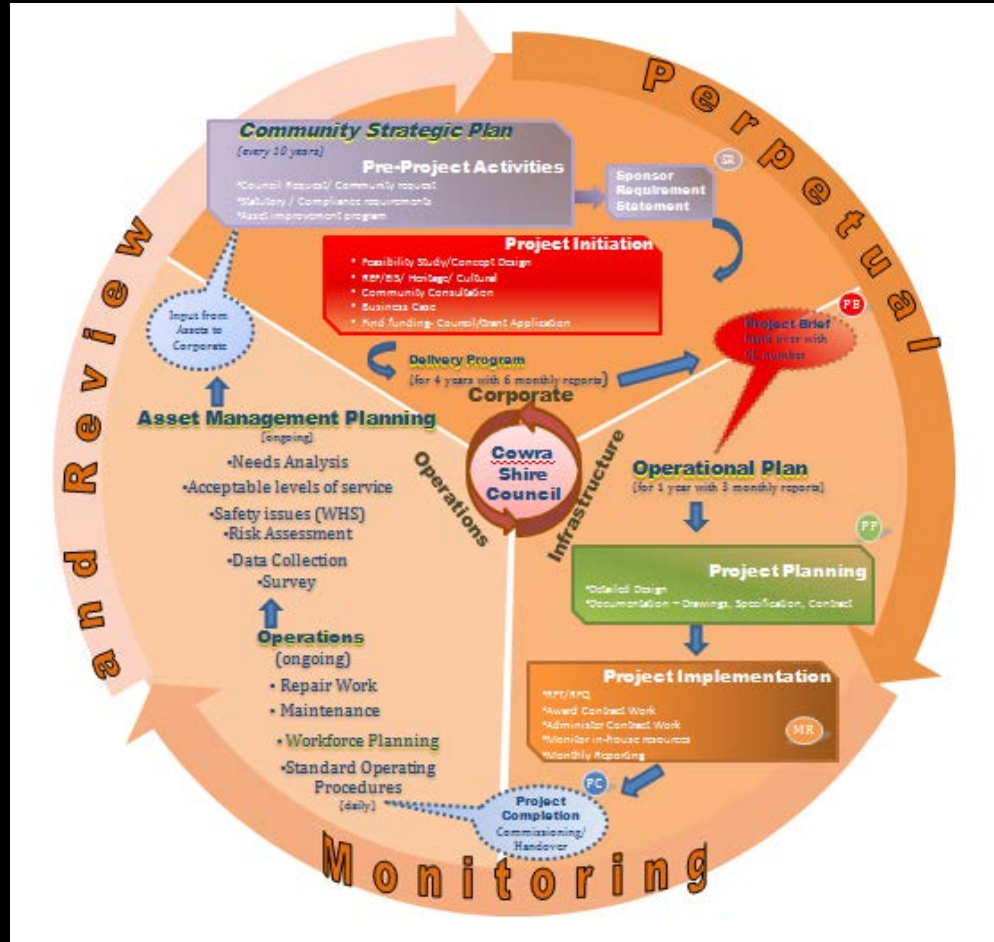
Figure 7: IPR within Council

- Community Strategic Plan (10 year cycle)
  - Pre-project activities generates milestone SR
- Delivery Program (4 year cycle)
  - Initiation phase generates milestone PB
- Operational Plan (1 year cycle with $ cash)
  - Project Planning, Implementation, Completion

WHS Act   *(Workplace Health and Safety)*

- Section 19 - *"Primary duty of care"*
  - PCBU - Person Conducting a Business or Undertaking
  - Self-employed persons
- Sections 20 to 26 - *"Further duties"*
  - seven specialist positions
- Section 27 - *"Officers, Workers and Others"*

7   "Further duties" in *WHS Act* have   4 with titles :

- Section 22 – Designers
- Section 23 – Manufacturers
- Section 24 – Importers
- Section 25 – Suppliers

7 "Further duties" in *WHS Act* have 3 without titles :

- Section 20 – Project Manager ?
  - person with management and control of a workplace
- Section 21 – Line Manager ?
  - person with management or control of fixtures, fittings or plant
- Section 26 – Principal Contractor, Engineer, Architect ?
  - persons that install, construct or commission plant or structures

Figure 8: Controlling "down"

PROCESS MODEL... from "PRINCE" - PRojects IN Controlled Environments   CONTROLLING..........

Corporate / Program

1.
Council as Entity -
PCBU
s.5 - Person conducting business or undertaking

Direction

2.
Branch or Portfolio Manager / Steering Committee role -
DIRECTOR
s.27 - Officer
s.252 - "Participates in making decisions affecting the whole, or a substantial part, of a business or undertaking of a public authority"

Management

3.a
Project integration role -
PROJECT MANAGER
s.20 – Persons with management or control of workplace

3.b
Operational role -
LINE MANAGER
s.21 – Persons with management or control of fixtures, fittings or plant

Delivery

4.a
Activity Co-ordination role -
PRINCIPAL CONTRACTOR, ENGINEER, ARCHITECT
s.26 – Installation, construction and commissioning persons

4.b
Task Delivery role -
s.25 – Suppliers   s.23 - Manufactures
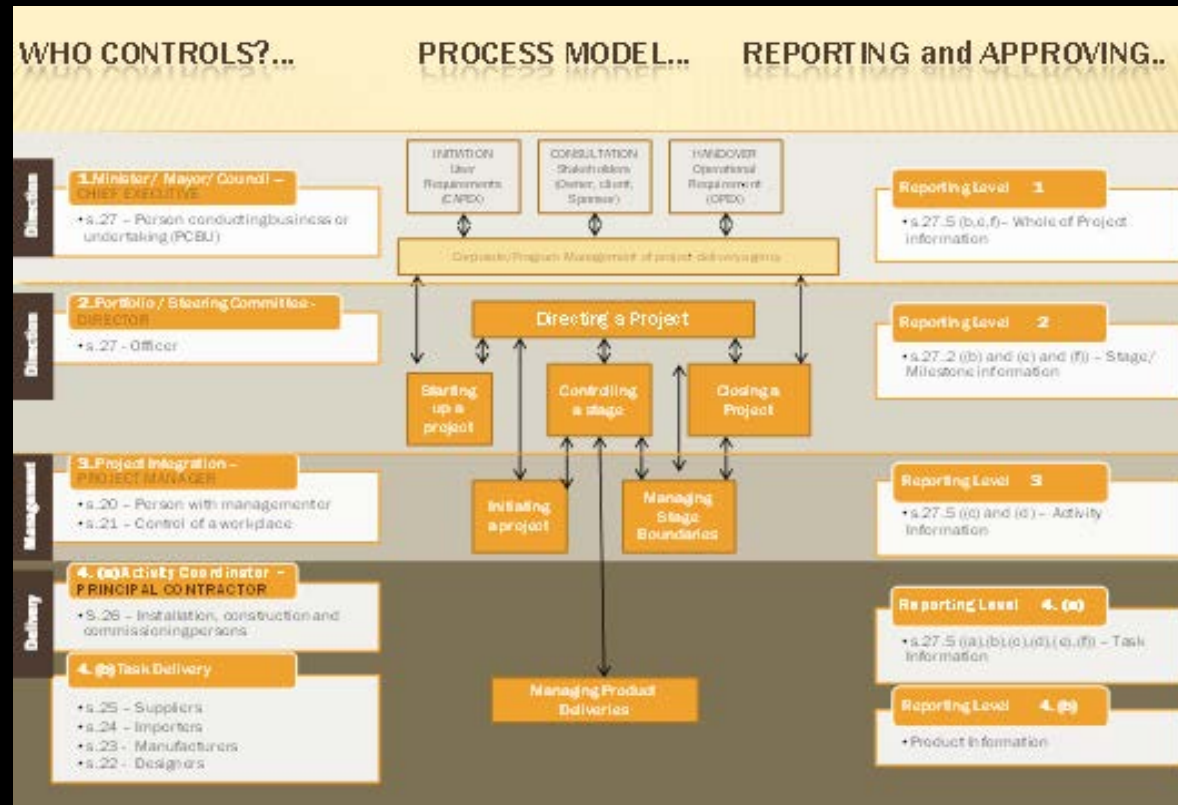s.24 – Importers   s.22 - Designers

17
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WHS "due diligence" compliance
Section 27   Clause 5 Sections (a) to (f)

- (f) requires an Officer, under due diligence, to

  "verify both workplace compliance and safety response processes are resourced and timely"

Figure 9: Reporting "up" is *verification*

Paradigm shift for safety

- Projects currently successful if delivered
  - "on time and within budget"

- If "safety" is our highest priority, then new media statements should include the terms
  - "safely and incident free"

Conclusion

- **Milestone reporting technique** is key component of

- Project Management System — complies with both
  1. *NSW Local Govt Act*
     - requirements for Integrated Planning and Reporting
  2. "harmonised" *Workplace Health and Safety Act*
     - requirements for Due Diligence and Further Duties

Conclusion

- **Milestone reporting technique** – is key to

- successful development of Canberra
  - where program and project managers talk
  - where projects do not normally fail