

# **SUBMISSION TO THE SENATE INQUIRY INTO THE SHORTAGE OF ENGINEERING AND RELATED EMPLOYMENT SKILLS**

## **Background**

The author has worked in Commonwealth Government, ACT Government, local government and NSW State Government for over 43 years and has been involved for over 20 years in the issues of de-engineering of the public sector and ageing workforce. The author is a member of the Association of Professional Engineers, Scientists and Managers, Australia (APESMA) and the Institute of Public Works Engineers, Australia (IPWEA).

## **Context**

Current organisational structures in the public sector trend towards generic positions, which may be occupied by engineering professionals, technologists and non-technical officers. Engineers and technologists in such generic positions provide value-added benefit to policy and projects in the public sector, but they are invisible in an organisational context, due to the vagaries of position descriptions. With an ageing workforce, the loss of these latent skills will go un-noticed as these officers retire, until the public sector becomes incompetent to deliver technically complex policy and to oversee complex engineering infrastructure projects.

## **Submission**

The submission focuses on the need to maintain engineering competencies in the public sector, addressing the relevant terms of reference and proposing strategies as sought by the Senate Committee.

***(a) the implications of the shortage for infrastructure delivery in terms of economic development, cost, efficiency, safety and disputation;***

Infrastructure delivery requires a balance of public and private sector engagement. The public sector needs to be equipped with the requisite engineering skills to scope the technical requirements of complex engineering infrastructure projects, in order to draft design instructions for the private sector to tender proposals for design and construction.

Without the requisite skills, the alternative is to have an inefficient and costly array of consultants developing project scope, design brief, design evaluation and project supervision, with increased potential for safety omissions and disputation.

***(b) the impact of the long-term outsourcing of engineering activities by government on skills development and retention in both the private and public sectors;***

The long-term impact of de-engineering of the public sector is that the few experienced engineers left are in senior positions, with no succession plan for replacement with like skills and very limited prospect of recruitment of equivalent skills from the private sector. The remaining experienced engineers are also nearing retirement and while succession planning is bandied about in human resource parlance, no one appears to have any idea how to undertake succession planning.

***(c) options to address the skill shortage for engineers and related trades, and the effectiveness and efficiency of relevant policies, both past and present;***

In the public sector, there is a need to canvass the skills sets of professional and technically qualified staff in both professional, technical and generic administrative positions, in order to determine what skills sets will be lost with a retiring and ageing workforce and what core skills need to be retained and how skill improvement can be achieved on the job.

The author proposes an integrated career skills inventory and succession planning survey for the public sector, which is attached to this submission. In many cases, members of the ageing workforce have lifetime-acquired occupational and personal skills that are under-utilised and under-valued by organisations.

***(d) options for infrastructure delivery using alternative procurement models which aim to foster collaboration and achieve effective community outcomes, including skills development and retention;***

This is a matter that would be better addressed by private sector specialists.

***(e) effective strategies to develop and retain engineering talent in the private and public sectors through industry training and development, at enterprise, project and whole-of sector levels;***

The proposed succession planning survey mentioned in (c) above enable existing senior engineers and technologists to address strategies for organisational identification of their skill and transition to retirement intentions, so that talents are retained and better utilised by public sector organisations.

***(f) opportunities to provide incentives to the private sector through the procurement process to undertake skills development;***

This is a matter that would be better addressed by private sector specialists.

***(g) consequences of skills shortage in the construction sector to the public sector's capacity to effectively procure and manage infrastructure projects;***

This is a matter that would be better addressed by construction sector specialists, noting the comment above under Context, that the skills shortage equally affects the public sector's competence to effectively procure and manage infrastructure projects.

***(h) the impact of delayed and stalled infrastructure projects on economic development, workplace productivity and employment; and***

The impact of delayed or stalled infrastructure projects is self evident. Delays are not always due to a shortage of engineering and technical skills, but are often due to externalities and a lack of lateral thinking skills and experience to resolve impediments to complex projects.

***(i) other related matters.***

Demographer Bernard Salt asserts that "Baby Boomers" will have to work beyond retirement age and will become a generation of unpaid volunteers in a "Golden Age of Volunteering". Bernard's views are not a solution to skills retention in the public sector.

Engineers and technologists with accumulated superannuation are able to take advantage of the Transition to Retirement Income Scheme (TRIS). The TRIS provides an opportunity for negotiated transitional employment strategies, as an option for utilising and managing skills and skill replacement.

## **Conclusions**

The need for urgent action on planning the transition to retirement of senior officers, concurrently with the replacement of essential skills is clearly evident.

The integrated Career Skills Inventory and Succession Planning Survey is proposed as an opportunity to compile an inventory of staff skills, identify required skills, manage the succession planning of retiring professionals and technologists and build the optimum skilled workforce to meet public sector infrastructure delivery objectives.

Russell Wade

## **Attachments:**

1. Career skills inventory and succession planning survey
2. Picklist of typical accumulated lifetime occupational skills
3. Picklist of typical lifetime personal skills and attributes