

SENATE INQUIRY INTO THE SHORTAGE OF ENGINEERING AND RELATED EMPLOYMENT SKILLS

Submission by the Western Australian Division of The Institute of Public Works Engineering Australia – IPWEA-WA.

1.0: The Institute and its Purposes

The WA Division of The Institute of Public Works Engineering Australia (IPWEA-WA) is the peak Western Australian association representing professionals involved in and delivering public works and services.

We are a not-for-profit professional association and, over the years, IPWEA-WA has been widely acclaimed by the Western Australian State Government and the industry-sector as the leading source of technical excellence, professional standards and innovative solutions.

IPWEA in Western Australia is part of IPWEA-National, and one of six State Divisions that make up the national federation.

The principal purpose of the WA Division of the Institute is to provide member services and advocacy that advance the professional interests and technical standards of people and organisations involved in and delivering public works and services.

While being an independent professional body, IPWEA is recognised as a Technical Society of Engineers Australia.

2.0: Public Works Engineering – The Scope of the Work involved, and the People doing the Work

Public Works Engineering (PWE) defines the particular area of Civil Engineering that focuses on the design and delivery of engineering and infrastructure works and services that principally impact upon people and the quality of life they enjoy as communities.

This would cover the broad areas of design and construction works carried out by Local Government authorities as well as private sector builders and contractors involved in community-focused projects. The scope of responsibility would range from oversight to the full gamut of planning, designing, construction, upkeep and maintenance of roads and rail projects, libraries, community centres, parks and recreation areas, state housing and commercial properties. In terms of infrastructure works, it would include bridges, tunnels, pathways, access lanes, libraries, sport facilities, swimming pools, parks and recreation areas.

The sustainable management of the assets under their charge would form a significant proportion of the work and responsibilities that public works engineering professionals would be responsible for.

In the context of the WA Division's operations, it would entail both large and small-scale projects not only the Metropolitan areas of Perth but also regional cities, country towns, and remote communities all across Western Australia.

With large-scale mining operations being carried out in the north of the State, there would be significant projects that public works engineers would either be undertaking or have oversight responsibilities for.

The skills shortages that are occurring in these locations – with experienced public works engineers being enticed to join resources-based companies – can only be overcome with training courses such as The Diploma in Public Works Engineering being offered on site.

This would be the one of the basic premises of our funding request.

3.0: IPWEA-WA's Funding Request

This submission for funding by The Western Australian Division of The IPWEA is *separate* and *different* – in form and in purpose – from the two other submissions made by IPWEA-National and IPWEA-NSW Division.

4.0: IPWEA-WA's Funding Proposal

Our request for funding is purely for the purposes of further developing our nationally-accredited **Diploma in Public Works Engineering** – the only programme of its kind in the Commonwealth.

There is a two-stage process in the growth and development of the Diploma.

- **The first stage** is the over-arching, outcomes-based programme development work that focuses on :
 - > creating frameworks and module definitions
 - > developing module descriptors
 - > clarifying course parameters and learning boundaries
 - > developing module descriptors, and

- > meeting the academic and technical outcomes-based requirements that are necessary for obtaining accreditation.

This being the fundamental requirement for accreditation, we have completed this of our own accord, with financial assistance from the Public Works Engineering Foundation.

The Diploma in Public Works Engineering is now a nationally accredited course.

The total invested in this programme to date – by both the Institute and the Foundation – has been in the region of \$200,000.

- **The second stage** of The Diploma's development deals with the "fleshing-out" process. This involves preparing detailed course outlines, defining absolute parameters for module frameworks, establishing processes for programme delivery and content, developing course materials and audiovisuals, and cultivating trainers, facilitators and examiners.

Since quality, content management and programme evaluation would be the critical areas for assessment, there will be stringent controls developed and set in place to ensure that standards remain consistent throughout the programme – and, particularly, if it is delivered inter-State.

This training and assessment of facilitators is, often, a significant hurdle because while engineers often have a thorough understanding of their subject and can speak in-depth on the content of the subject, they do not necessarily know how to *teach* the subject.

This is when their training then becomes our responsibility – as is the monitoring of achievement levels among students, and their ability to conduct programme evaluations.

It is for this second part of the Diploma's development that we need funding – and our request is based on how the Institute can meet those financial obligations.

5.0: Validating the Programme

As a technical training programme, developed mainly for creating more Local Government engineers, it has served the needs of technical staff in that sector for several years.

These professionals, in turn, have designed and managed significant numbers of capital development projects and programmes all over Western Australia. Theirs is not so much specialised work, as it is multi-disciplinary and over-arching in nature.

Public Works engineers, over the years, have been required to do lots more than just pure and basic engineering:

- Asset Management is one area;
- Stormwater Drainage, Collection, Storage and Recycling is another;
- Energy-saving is a third; and,
- Sustainable Waste Management is another area gaining more and more interest and investment.

These responsibilities all well and truly above and beyond what an engineer would be required to do if he or she was employed in any sector other than public works engineering.

The needs have become so varied and specialised that there is now a shortage of skills in the public works arena. And with the more experienced public works engineers moving to the private – mainly resources – sector, the numbers needed to replace them are becoming more strained and more acute each day.

What's happened with this skilled migration – into what's commonly-referred to as the 'dark side' – is the massive and debilitating loss of technical knowledge, experience and expertise gained by these people while working for local government and the public works engineering sector that's gone over to the 'dark side' with them.

And, unless one desperately wants to return to working in Local Government, the loss of intellectual equity becomes irreplaceable.

The 'first' Diploma in PWE received national accreditation in 2009 with a requirement to review and revamp it in 2012.

In the past, income from the Diploma has minimal – since most of the registration fees went to one of the TAFE Colleges which was contracted to “maintain” the programme. During the past year, the Institute ran seven modules of the Diploma through this TAFE College and, despite the course being fully-subscribed, the net income to the Institute was about \$1800.

A very meagre return, you would agree, and this is even reflected in our Annual Report due to be released in the next few days.

We have since re-designed the Diploma, and it has received national accreditation, valid until February 28, 2015.

7.0: The Funding Request

The funding request from the Commonwealth Government is a **once-off grant of \$280,000** which will go into:

- re-defining the programme;
- researching and developing course materials for students;
- developing audio-visual teaching materials for trainers ; and,
- paying for ongoing expenses relating to trainer-development;
- developing a Students’ Handbook’; and,
- expenses relating to the establishment of an RTO which will manage not only our Diploma programme but also training courses offered by the AITPM and AAPA with whom the Institute of Public Works Engineering in Western Australia has close and enduring professional partnerships.

The AITPM’s Diploma in Transport Management is an off-shoot of our Diploma – with the six core modules of the Public Works Engineering Diploma, which have been accredited nationally, being used by AITPM for their own Diploma.

So, by helping us with this funding request, the Commonwealth Government will not only be helping IPWEA run the Public Works Diploma to train public works professionals all over the Commonwealth but also helping other professional organisations like AITPM and AAPA benefit from our work and commitment to train skilled workers in various other disciplines for the benefit of the Australian economy.



Training Accreditation Council
WESTERN AUSTRALIA

Her Excellency Cressida Desha

Diploma of Public Works
for
**Institute of Public Works Engineering Australia
(WA)**

has been accredited by the Training Accreditation Council
under the Vocational Education and Training Act 1996.

Chairperson
Training Accreditation Council



National Code –

Date of Expiry –

28/02/2015

Our ref:

Mr John Ambrose
Institute of Public Works Engineering Australia (WA)

Dear Mr Ambrose

The Training Accreditation Council (TAC), would like to advise you that your application for reaccreditation of the following course(s) has been approved:

- **52476WA Diploma of Public Works (accredited until 28 February 2015)**

Attached is your accredited course certificate.

Please be aware that the above is regarded as a new course and has been allocated a new national code. The above course is not automatically added to the delivery profile of your organisation. Should you wish to deliver the new course as a Registered Training Organisation you are required to make application to TAC. Detail on the process is available on the TAC website at www.tac.wa.gov.au

TAC would like to remind you that proponents of accredited courses are required to:

- Comply with national and state recognition policies, including the Australian Quality Training Framework;
- Participate in monitoring of the quality of delivery in the vocational education and training system;
- Review each course when Training Packages, or competency standards become endorsed or are reviewed during the period of accreditation;
- Monitor all courses to ensure on-going compliance with the National Training Framework policy; and
- Advise TAC of any changes to the course during the accreditation period and forward amended course documentation to TAC for approval.

Yours sincerely

Ian C Hill
CHAIRMAN
TRAINING ACCREDITATION COUNCIL

13 February 2012