

# Skills Shortage in NSW

Committee on Economic Development Inquiry  
9 October 2013

New South Wales



**IPWEA**

INSTITUTE OF PUBLIC WORKS  
ENGINEERING AUSTRALASIA

# The Problem

MONDAY, OCTOBER 18, 2010

The Sydney Morning Herald

BusinessDay 5

## WORKFORCE

# Skills shortage looms in civil construction

Ben Butler

THE booming mining industry is luring skilled workers away from building infrastructure, threatening a shortfall of "many thousand" by 2012, the Civil Contractors Federation says.

Skills in the sector, which employs far more than previously thought, are poorly understood by government, the report says. It also finds older workers are quitting the industry in droves, and calls for an inquiry into why skilled civil contractors leave the industry by about 45.

"As the economy recovers, led by industries such as mining and continuing strong infrastructure spending, these recruitment difficulties can be expected to become more widespread and inhibit economic and job growth," the federation said.

The Civil Construction Occupation Review Report, which surveys 71 companies, found the industry employs more than 350,000 people.

this suggests that civil construction makes up 30 per cent to 40 per cent or more of the building and construction workforce," the federation said.

The 350,000 figure contrasts with the federation's traditional estimate that its 2000 members employ about 40,000 workers.

"At the time of the survey at the end of 2009 there were an estimated 276 vacancies reported by employers in the survey," the federation said.

Extrapolating to the whole industry indicated there were thousands of vacancies, it said.

The federation expect the skills gap to widen as the commodity boom employs more workers, saying that even if employers find new ways to retrain skilled workers "it is clear that the unfilled vacancies stand by 2012".

"Skill shortages are evident for many areas of activity across the industry, including plant operations, bridge construction, road



Where are all the workers? ... many leave the industry at a relatively young age. Photo: Nic Walker

"A number of occupations which are critical to the industry such as bridge constructor, road constructor and pipe layer either have no ANZSCO title or the ANZSCO title only reflects a part of what a particular occupation does."

The federation said training places needed to be increased and there should be an inquiry into the "quite alarming" number of skilled civil contractors who quit the industry by 45. Those workers might be poached by the "very well-paid resources sector" or they might be leaving because of the physical demands of the job, it said.

pipe laying and leadership and supervisory roles."

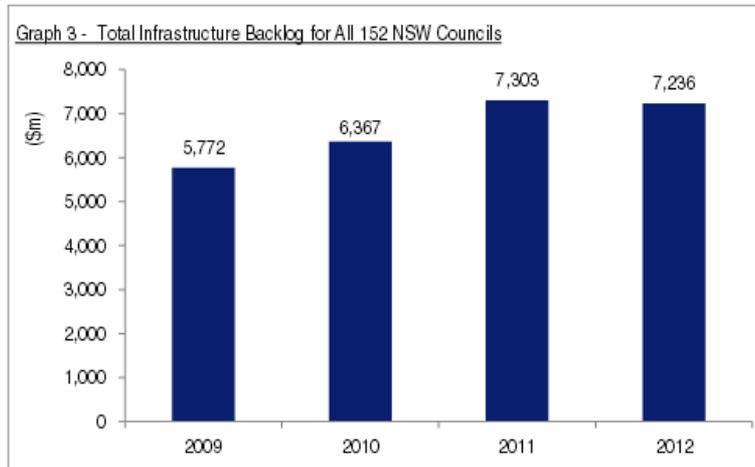
But the tools used to measure the skills gap were inadequate because the categories of workers used when compiling statistics did not distin-

guish between different jobs in civil construction, the federation said.

The Australian and New Zealand Standard Classification of Occupations system should be overhauled, it said.

# TCorp Report into Financial Sustainability of Local Government

## 1.6 Infrastructure Backlog



One of the major drivers of the Infrastructure Backlog is the under spending on the maintenance of assets.

# It affects Local Communities and Public Infrastructure

- Managing rising community expectations
  - Maintaining existing service commitments
  - Constraints of rate income
  - Overcoming skills shortage
- 
- Professional Engineers
  - Tradespeople
  - Works Officers
  - Even Librarians & Planners

# Priority Occupations

Priority Occupation	Total new and Additional Workers required to 2012
Leaders & Supervisors	8,478
Bridge Constructors	1,413
Pipe Layers	2,862
Plant Operator	8,080
Road Constructor	7,572

Source Skills DMC and CCF Occupation Review Report 2010

# What does this mean to NSW Local Government

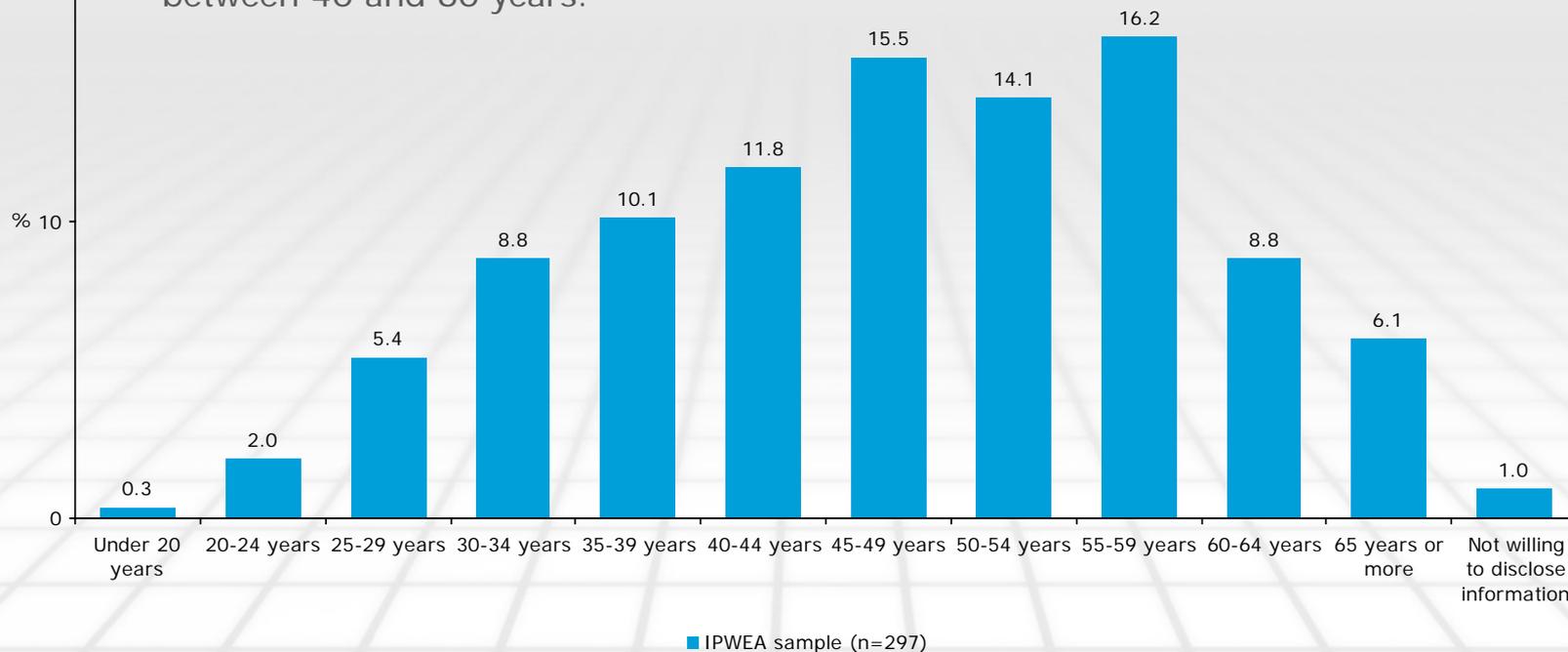
Timber Bridges in NSW	
Total Bridges	2150
Poor Condition	645
Fair condition	1065

Regional and Local Roads in NSW		Replacement Value at 30 June 2012
Sealed roads	80,629 km	
Unsealed Roads	79,789 km	
Total	160,417 km	\$61.8 Billion

Source IPWEA RTD Benchmarking Project 2012

# Age

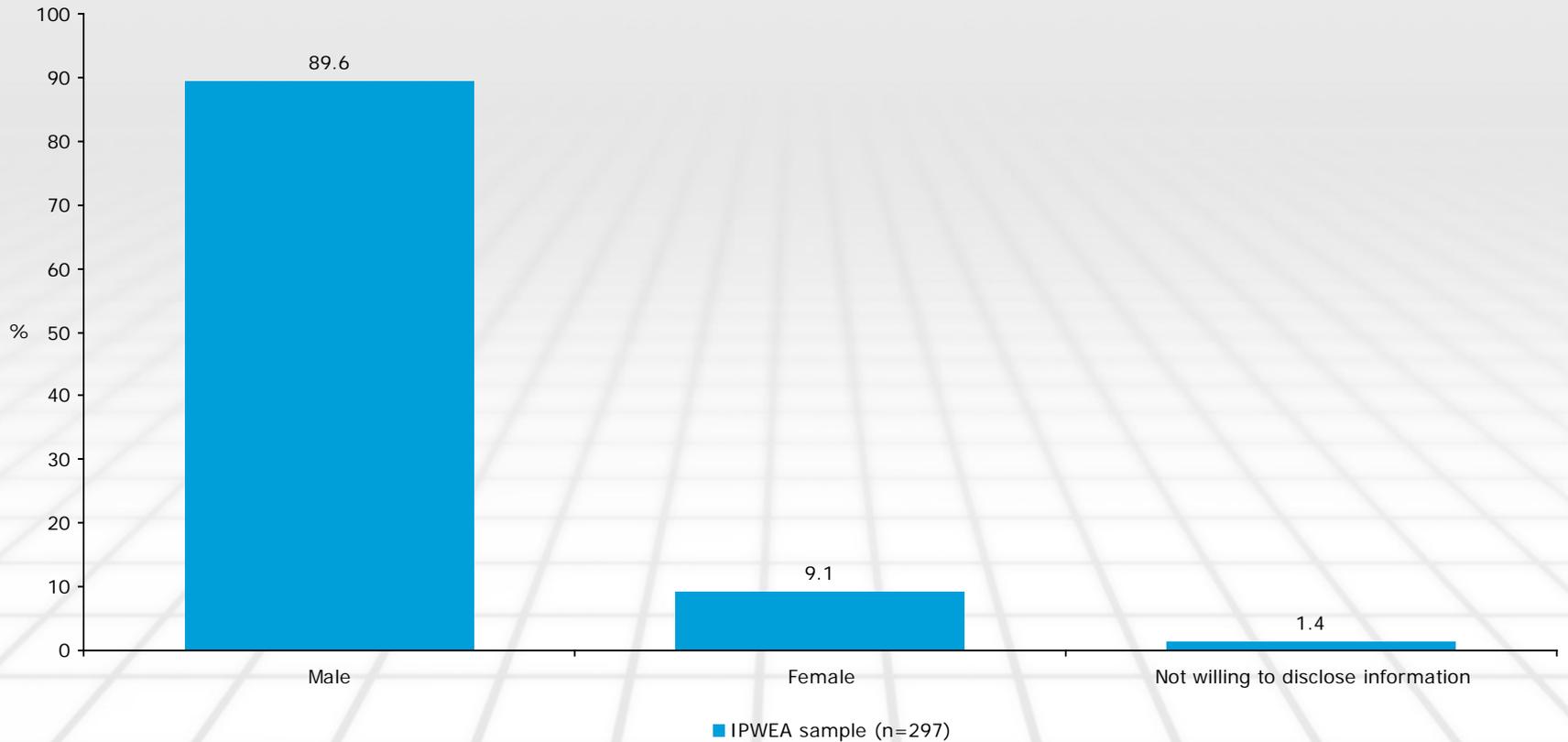
Over half (57.6%) of respondents aged between 40 and 60 years.



Question: Which of the following age groups do you belong to?

Base: Current members of IPWEA

# Gender



Question: Are you... ?

Base: Current members of IPWEA



build a bridge  
... & get over it!

REROC

RIVERINA EASTERN REGIONAL  
ORGANISATION OF COUNCILS



New South Wales



IPWEA

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# What is Build A Bridge?

- A 3 day Camp run by (REROC) in partnership in with Wagga Wagga Compact's Career Development Unit.
- The Camp aims to encourage students in years 10 to 12 to consider a career in civil engineering.
- Students participate in practical, hands-on activities over 3 days that allow them to experience the world of civil engineering.
- On the final day of the program, students build a full-size bridge that they must walk over to 'graduate'.

# Five Steps



- Research and select the structure design and commence planning
- Construct a small-scale model in the chosen materials(they also have to submit a materials inventory and a budget)
- Produce a project plan setting out the construction requirements to convert the model to a full-scale structure
- 'Award' the winning tender for the full-scale construction
- Construct and test the full-scale structure.

# Team Building



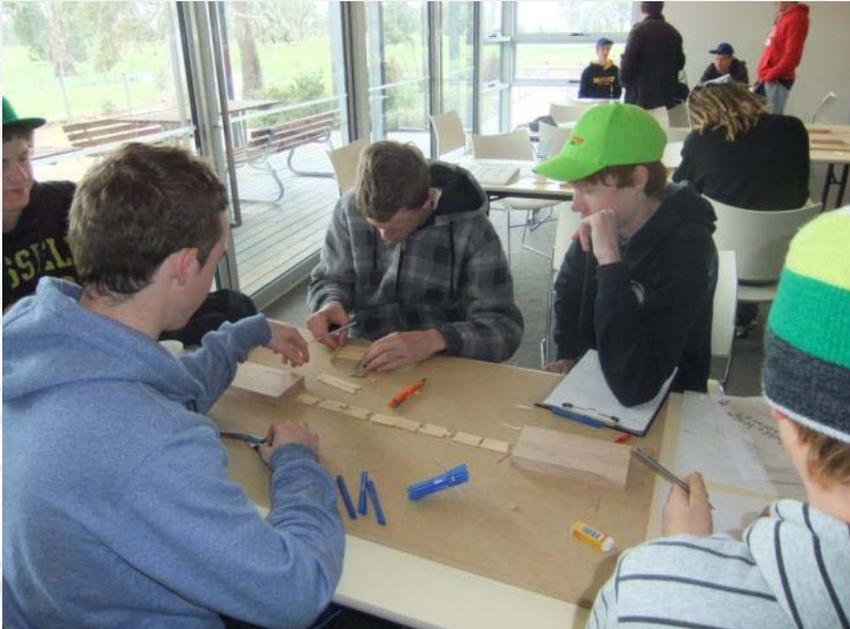
# Introduction to Engineering



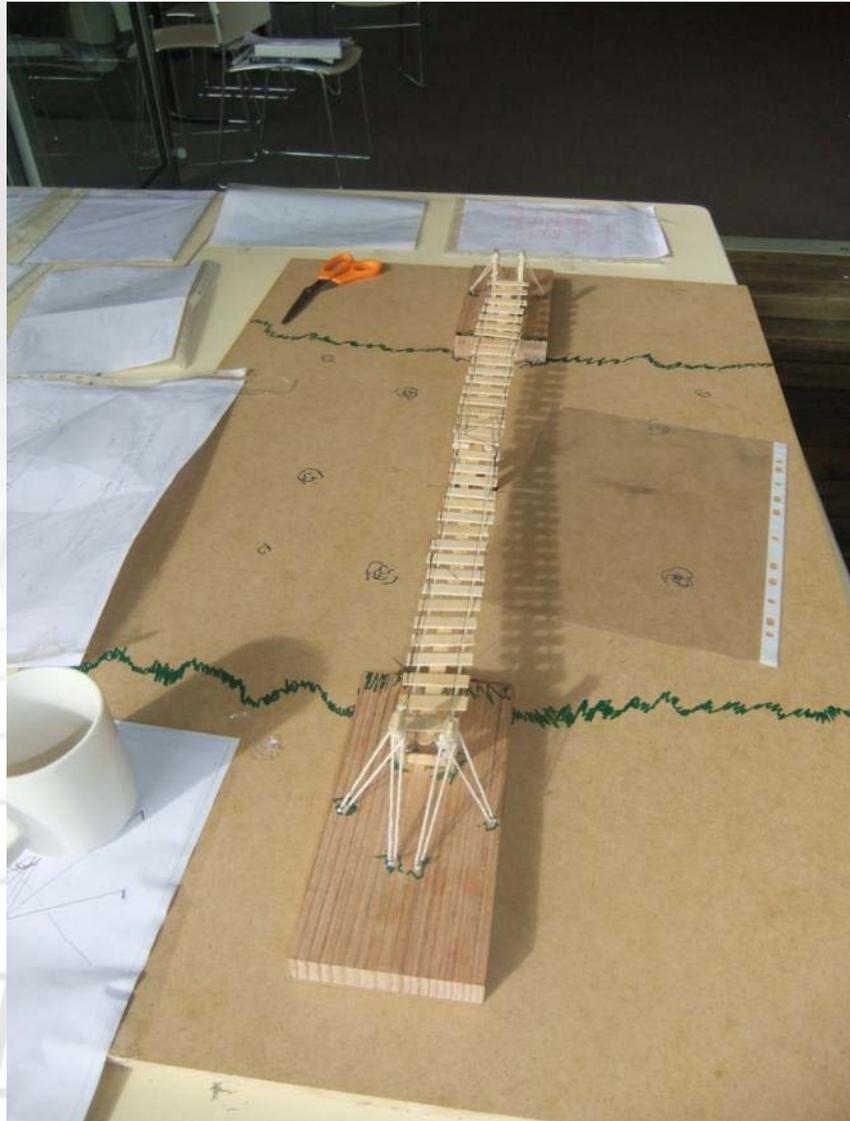
- Structures
- Foundation and compaction testing
- Surveying & levelling
- Mentored by IPWEA, REROC & RTMS engineers

# Planning

- Research and select the bridge structure, design and commence planning.
- Work out a materials inventory and a budget.
- Construct a small scale model in the chosen materials
- Produce a project plan setting out the construction requirements to convert the model to a full scale structure.



# Scale Model



# Proposal & Tendering

- Judging of Proposals
  - Peer review
  - Facilitator
  - Standard criteria
- Winning team act as Project Managers
- Other teams build the bridge

# Construction



# Testing



*The finished product!*



# “Graduation”

- Students walk across bridge
- Receive their Certificate
- Parents, teachers and friends present





Then they have to dismantle it!

# Tertiary qualifications

- Uniform pathways between TAFE and University qualifications
- Para professional to professional
- Competition between individual TAFE's
- Funding of training resources in skill shortage area
- Cadetships and flexible learning
- Industry relevant state ITAB's

# Registration of Engineers