WATER TRAINING PACKAGE (NWP07)

CAPACITY, CAPABILITIES & CHALLENGES

Government Skills
AUSTRALIA

EXECUTIVE SUMMARY

Government Skills Australia (GSA) is the national Industry Skills Council (ISC) for the government and community safety sectors, namely correctional services, local government, public safety, public sector and water. GSA is responsible for the continuous improvement of nationally-endorsed Vocational Education and Training (VET) training packages and the delivery of workforce development services to organisations across these sectors.

GSA initiated a research project to investigate the current uptake of the Water Training Package (NWP07) and identify the key issues associated with the training package and its delivery within the water industry. The following report outlines the findings of this research project that involved data collection from Registered Training Organisations, Industry Advisory Committee members and water organisations across Australia.

This report is intended to provide a starting point for further research. Participation in the project was voluntary and, as such, the data is based on a subset of the Australian industry.

Feedback indicated that many considered the Water Training Package to be effectively meeting industry needs. It was acknowledged, however, that a review of the training package was needed and that there were a number of current issues.

Current issues

> Water organisations reported a lack of training delivery in regional and remote areas

> They also indicated that there was a shortage of suitably qualified trainers with industry knowledge, and that poor quality training material was being provided by some RTOs

> RTOs acknowledged the lack of quality trainers and identified that funding issues were impacting on their capacity to develop resources

> IAC members and other key stakeholders identified the need for formalised skill sets and a competency framework that is aligned to industry occupations

> A review of a range of units was recommended, in addition to the consideration of new units to be included in the training package

This report has identified the need for a number of improvements to be made to the Water Training Package. In 2013, GSA, in collaboration with industry, will embark on the development of a competency framework that is aligned to water industry occupations. The recommendations for a review of existing units and the introduction of new units will also be addressed.

The report also indicated that the quality of training delivery must continue to improve. Initiatives such as training and assessment networks could be developed to address this issue, while greater communication between RTOs and organisations should be encouraged in order to clearly outline training needs and expectations. Consideration of ways to improve access to training for regional and rural organisations should also be a priority.

INTRODUCTION

The water industry in Australia provides a range of critical services including the provision of drinking water, irrigation water and wastewater management. The size of the water industry is difficult to determine, largely because the extent of the water industry is not well defined. In 2012, the Australian Bureau of Statistics (ABS) reported that there were 40,985 persons employed in the area of 'Water Supply, Sewerage and Drainage Services' [1]. Recently, however, the Water Industry Skills Taskforce (WIST) reported anecdotally that there may be as many as 80,000-120,000 employees across the sector in its entirety [2].

The water industry is currently undergoing a period of extensive change. The next few years will see the retirement of a large portion of the workforce, which will lead to a significant loss of experience and technical knowledge. There is now also a greater focus on the water industry as a result of recent extreme weather events. Extended periods of drought have increased the focus on water resource management, desalination, and water reuse and recycling; whilst recent floods have also prompted a focus on effective water management practices. The water industry is becoming more professionalised and skilled in order to handle increasing community expectations. An example of this is the recent move for the introduction of certification requirements for drinking water operators.

In order to effectively respond to the above-mentioned changes, significant workforce planning and skills training will be required. In response to this, the Water Training Package (NWP07) will need to adapt and continue to improve in order to remain effective. In recognition of this need, GSA has undertaken a review of the capacity, capabilities and challenges within the water industry in relation to NWP07, with the view to direct future continuous improvement activity. In addition to focussing on NWP07 content, this report will also examine the capacity for Registered Training Organisations (RTOs) to deliver high quality training for the water industry.

During the production of this report, GSA surveyed water organisations, RTOs that have NWP07 on scope, and key water industry stakeholders, including Industry Advisory Committee (IAC) members. Statistical data was also obtained from national databases. This report examines the findings of this data collection to provide an overview of NWP07 usage, the quality of its delivery by RTOs, and any issues associated with NWP07. Subsequently, this report provides an overview of how the Water Training Package will adapt to meet these needs and outlines a series of recommendations for the future of water-related training.

METHODOLOGY

During the preparation of this report, GSA collected data from a variety of sources including:

> National Centre for Vocational Education Research (NCVER)

> www.training.gov.au (TGA)

> Australian Water Association (AWA)

> Water Industry Skills Taskforce (WIST)

> NSW Public Sector Industry Training Advisory Body (ITAB).

GSA also conducted a series of surveys aimed at different levels of the water industry in order to gain a comprehensive overview of the sector. These surveys were designed to identify any issues associated with the utilisation of NWP07, any required improvements, and the difficulties that were being encountered with regards to training delivery. The majority of this research was conducted simultaneously with GSA data collection across all government and community safety sectors for the *2013 Environmental Scan*; however, additional survey questions were posed to the water sector in order to inform this report.

Three targeted surveys were conducted between August and November 2012. The surveys were aimed at the following groups:

Industry Advisory Committee members and key industry stakeholders

This survey focussed on high level issues within the water sector, their opinion on how well NWP07 was meeting industry needs, and what changes they felt were necessary.

Registered Training Organisations with NWP07 on scope

This survey was used to collect information from RTOs regarding the NWP07 qualifications, units of competency and specialisation streams that were being offered and delivered, the uptake of the National Water Learning Resources, and barriers to training delivery that RTOs were currently facing.

Organisations within the water industry

This survey was used to collect workforce data, identify factors that were affecting training activity and needs, and highlight the current barriers to training. Information was also sought regarding the utilisation of NWP07, how training was accessed, and any issues associated with NWP07 usage from an employer's perspective.

GSA received 58 responses across these three surveys. Further anecdotal feedback regarding NWP07 was received via the Training Package Feedback Register on the GSA website.

SECTION 1: STATISTICAL DATA

RTOs with NWP07 on scope

As of February 2013, there were 44 RTOs with NWP07 on scope. The most common NWP07 qualifications amongst RTOs were:

> Certificate III in Water Operations (30 RTOs)

> Certificate II in Water Operations (25 RTOs)

> Certificate IV in Water Operations (19 RTOs)

The NWP07 qualifications that were offered by the fewest RTOs were:

> Advanced Diploma of Water Engineering Design (0 RTOs)

> Certificate I in Water Sustainability (2 RTOs)

> Graduate Certificate in Water Industry Leadership (4 RTOs)

> Diploma of Water Operations (7 RTOs)

Table 1. RTOs with NWP07 qualifications on scope as of February 2013

Qualification code	Name of qualification	Number of RTOs with qualification on scope
NWP10110	Certificate I in Water Sustainability	2
NWP20107	Certificate II in Water Operations	25
NWP30107	Certificate III in Water Operations	30
NWP40107	Certificate IV in Water Operations	19
NWP50107	Diploma of Water Operations	7
NWP60112	Advanced Diploma of Water Engineering Design	0
NWP70107	Graduate Certificate in Water Industry Leadership	4

Source: www.training.gov.au

Thirty-six RTOs had full qualifications on scope, while 8 RTOs only offered units of competency (Table 2). NSW and Qld had the highest number of RTOs (29) that were delivering training in their area (Figure 1). This was followed by Vic (25), SA (21) and WA (21).

Table 2. Number of RTOs with NWP07 qualifications and units of competency on scope as of February 2013

Number of RTOs with NWP07 on scope	
Qualifications	36
Units of competency only	8
Total	44

Source: www.training.gov.au

Figure 1. Number of RTOs with NWP07 qualifications or units of competency on scope to deliver into each state/territory as of February 2013

Source: www.training.gov.au

GSA data collection regarding funding applied for via the Enterprise Based Productivity Places Program (EBPPP) and the National Workforce Development Fund (NWDF) over the last three years indicated that Certificate III and Certificate IV were the most in demand NWP07 qualifications. Other qualifications attracting EBPPP or NWDF funding within the sector included Certificate IV in Frontline Management and the Diploma of Management (Table 3).

Table 3. Enterprise Based Productivity Places Program (EBPPP) and National Workforce Development Fund (NWDF) participant places and qualification level 2010-2012

Qualification level	Participant places
NWP07 qualifications	
Certificate III in Water Operations	379
Certificate IV in Water Operations	241
Diploma of Water Operations	204
Non-NWP07 qualifications	
Certificate IV in Frontline Management	259
Diploma of Management	160
Certificate IV in Project Management	109
Diploma of Project Management	107
Certificate III in Customer Contact	77
Certificate IV in Training and Assessment	73
Certificate IV in Customer Contact	59
Total	**1668**

Source: GSA data collection

NCVER data

It should be noted that the NCVER data presented in the tables below represents publicly funded NWP07 training and is therefore not a complete representation of NWP07 uptake. Feedback from the water industry indicates that a high proportion of training is provided by private RTOs and, as such, would not be captured by NCVER data.

NCVER data on the use of NWP07

The most recent data available from NCVER with regard to NWP07 completions is from 2006-2010 (Table 4). This data relates to publicly funded training only and indicates that Certificate II and Certificate III were the most utilised qualification levels within NWP07. Completions in Certificate I, II, III and IV qualifications increased in 2010 compared to 2009, with notable increases in Certificate III and Certificate IV completions in particular.

Table 4. Student completions by Australian Qualifications Framework level between 2006-2010

AQF level	2006	2007	2008	2009	2010
Graduate Certificate	N/A	0	0	0	0
Advanced Diploma	N/A	N/A	N/A	N/A	N/A
Diploma	1	1	0	2	0
Certificate IV	9	8	8	3	40
Certificate III	242	141	196	266	436
Certificate II	135	196	248	170	175
Certificate I	0	0	0	9	15
Total	387	346	452	450	666

Source: NCVER National VET Provider Collection, 2006-2011

Note: the Advanced Diploma of Water Engineering Design was introduced in 2012 and the Graduate Certificate in Water Industry Leadership was introduced in 2007

NCVER data on apprentices and trainees

NCVER data based on publicly funded apprentices and trainees is presented in Table 5 and Table 6. Apprentice and trainee data indicated that:

> NSW had the highest number of apprentices and trainees currently in training, followed by SA and Qld

> Qld had the highest number of completions in 2012, followed by NSW

> SA completion numbers decreased noticeably in 2012 compared to 2011, while numbers in Vic also decreased

> Certificate III qualifications had the highest uptake and number of completions

> The majority of apprentices and trainees were aged between 25 and 44 years, with those aged above 45 years the second most frequent

> More than 97% of apprentices and trainees were male

> Approximately 3.5% of apprentices and trainees in training are Indigenous, with Indigenous students accounting for approximately 3% of 2012 completions

> Less than 2% of apprentices and trainees have a disability, with less than 1% of 2012 completions being by a student with a disability

> Almost all publicly funded apprentices and trainees were studying full-time.

Table 5. Apprentices and trainees in NWP07 training as of 30 June 2012

	2008	2009	2010	2011	2012
State/territory					
New South Wales	257	314	354	352	477
Victoria	172	219	157	122	149
Queensland	138	148	212	276	267
South Australia	34	43	242	153	276
Western Australia	70	41	71	68	78
Tasmania	34	28	18	26	54
Northern Territory	0	0	0	0	12
Australian Capital Territory	0	0	0	1	1
Age					
19 years and under	39	53	55	47	57
20-24	77	92	112	103	112
25-44	377	407	525	468	599
45 years and over	212	241	362	380	546
Sex					
Male	690	766	1025	974	1281
Female	15	27	29	25	33
Indigenous status					
Indigenous	25	28	29	28	47
Not Indigenous	667	753	1006	954	1243
Not known	13	12	19	17	24
Disability status					
With a disability	7	8	7	14	24
Without a disability	691	779	1044	979	1283
Not known	7	6	3	6	7
English (main language)					
English	693	772	1033	979	1281
Non-English	6	15	14	16	23
Not known	6	6	7	4	10
Study mode					
Full-time	697	787	1051	992	1298
Part-time	8	6	3	7	16
School-based status					
School-based	2	0	1	2	4
Not school-based	703	793	1053	996	1310
AQF qualification level					
Diploma/Advanced Diploma	0	0	0	1	19
Certificate IV	8	29	69	77	122
Certificate III	598	661	888	795	1055
Certificate I or II	99	103	97	125	118
Total	**705**	**793**	**1054**	**998**	**1314**

Source: NCVER National Apprentice and Trainee Collection, September 2012

Table 6. Apprentice and trainee completions for NWP07 training as of 30 June 2012

	2008	2009	2010	2011	2012
State/territory					
New South Wales	114	106	139	149	136
Victoria	93	67	141	82	35
Queensland	44	54	56	110	201
South Australia	6	16	14	158	14
Western Australia	29	43	39	65	56
Tasmania	28	20	11	4	24
Northern Territory	0	0	0	0	0
Australian Capital Territory	0	0	0	0	0
Age					
19 years and under	15	20	19	22	20
20-24	46	37	52	61	46
25-44	166	156	189	286	234
45 years and over	87	93	140	199	166
Sex					
Male	306	297	390	550	455
Female	8	9	10	18	10
Indigenous status					
Indigenous	14	12	15	19	14
Not Indigenous	295	286	376	542	443
Not known	5	8	9	7	8
Disability status					
With a disability	3	3	5	4	4
Without a disability	303	301	391	562	459
Not known	8	2	4	2	2
English (main language)					
English	306	301	390	557	453
Non-English	3	3	7	9	8
Not known	5	2	3	2	4
Study mode					
Full-time	313	304	399	568	463
Part-time	1	1	1	0	2
Not known	0	1	0	0	0
School-based status					
School-based	0	1	0	0	1
Not school-based	314	305	400	568	464
AQF qualification level					
Diploma/Advanced Diploma	0	0	0	0	0
Certificate IV	0	0	5	14	41
Certificate III	219	218	322	471	315
Certificate I or II	95	88	73	83	110
Total	**314**	**306**	**400**	**568**	**466**

Source: NCVER National Apprentice and Trainee Collection, September 2012

SECTION 2: SURVEY OF WATER ORGANISATIONS

A survey was designed to identify the uptake and effectiveness of NWP07 amongst water organisations. The survey was sent to a variety of water organisations which included state, regional and metropolitan utilities as well as councils and private service providers. Thirty-four full or partial responses were received.

Respondents spanned all states and territories, except for the ACT (Table 7). The majority (56%) of respondents indicated that their organisation was based in a regional centre, with approximately one-quarter of respondents indicating that they were either metropolitan or rural/remote. Responding organisations varied in size, ranging from 1-20 staff (3% of respondents), to over 500 staff (17%; Figure 2). In excess of 12,000 staff were employed across the responding organisations. GSA attempted to identify the number of staff by occupation across these organisations; however, data collection was largely unsuccessful. The variation in occupation titles across organisations may have contributed to the difficulties associated with data collection. GSA will commence a major project in 2013 to collect accurate information regarding the number of people working in the water sector by occupation to address this shortfall. This project will also support future activities within the water sector such as the development of a competency framework and future reviews of the Australian and New Zealand Standard Classification of Occupations (ANZSCO) codes.

Table 7. Location of responding organisations

State/territory	Number of respondents	Nature of respondents
NSW	15*	Private providers, councils, state and regional utilities
Vic	13*	Private providers, regional utilities and the industry training advisory body
Qld	6*	Private providers and regional utilities
SA	3*	State utility and private providers
WA	2*	State utility and private provider
Tas	2	Regional utilities
NT	1	State utility
ACT	0	N/A

Note: some organisations indicated coverage across multiple states/territories

Figure 2. Size of the workforce within organisations that participated in the GSA survey

Legend:
- 1-20
- 21-50
- 51-200
- 201-500
- 500+
- N/A

Values shown: 3.5%, 3.5%, 10.5%, 17%, 38%, 27.5%
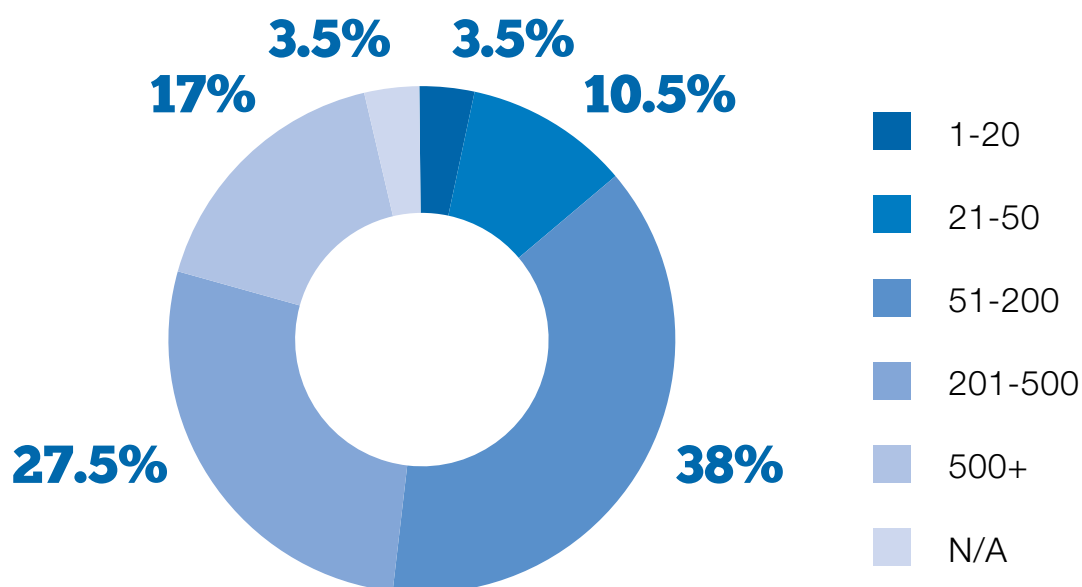
Utilisation of NWP07

Ninety-two per cent of responding water organisations indicated that they utilise NWP07. A number of other training packages were also being used within the water industry, including:

> Electrotechnology

> Electricity Supply Industry

> Laboratory Operations

> Local Government

> Public Sector

> Resources and Infrastructure Industry

> Training and Education.

The majority (88%) of respondents indicated that NWP07 was used for up-skilling staff; however, it was clear that NWP07 is being used for a wide range of purposes within the water sector, including to provide training program content (58%), for staff retention (54%), to comply with licencing requirements (50%) and to facilitate recognition of prior learning (46%; Figure 3). Respondents indicated that NWP07 was chosen because of its relevance to the workplace (100% of respondents) and the provision of water-specific content (86%). A further 64% of respondents cited the advantage of having a nationally-recognised qualification as a key reason why NWP07 was used for training (Figure 4).

The most common qualifications being used by respondents were:

> Certificate III in Water Operations (95%)

> Certificate IV in Water Operations (77%)

> Certificate II in Water Operations (59%)

> Diploma of Water Operations (36%; Figure 5).

Less than 5% of responding water organisations indicated that they currently utilise the Certificate I in Water Sustainability, Advanced Diploma of Water Engineering Design, and the Graduate Certificate in Water Industry Leadership.

Twenty-one of the responding organisations provided information regarding the number of staff within their organisation that had accessed NWP07 training. This data indicated that training activity within these organisations was noticeably higher in 2011 compared to 2010.

Figure 3. The main uses for NWP07 among responding organisations

Use	Percentage
Up-skilling staff	88%
Training program content	58%
Staff retention	54%
Comply with licensing requirements	50%
Facilitate recognition of prior learning	46%
Identify training needs/skills gaps	42%
Succession planning framework	33%
Performance management	17%
Access financial incentives	17%
Assist in recruitment	13%
Develop job descriptions	13%
Professional membership eligibility	8%
Determine award structures	8%

Percentage of respondents

Figure 4. The reasons why responding organisations are using NWP07

Reason	Percentage
Relevance to the workplace	100%
Water-specific content	86%
Nationally-recognised qualification	64%
Ability to contextualise to the workplace	59%
Portability of skills and knowledge	45%
Formal recognition of prior learning	45%
Flexibility in choice of electives	45%
Structured career paths through learning	27%
Choice of qualifications	23%

Percentage of respondents

Figure 5. The most common qualifications being used by responding water organisations

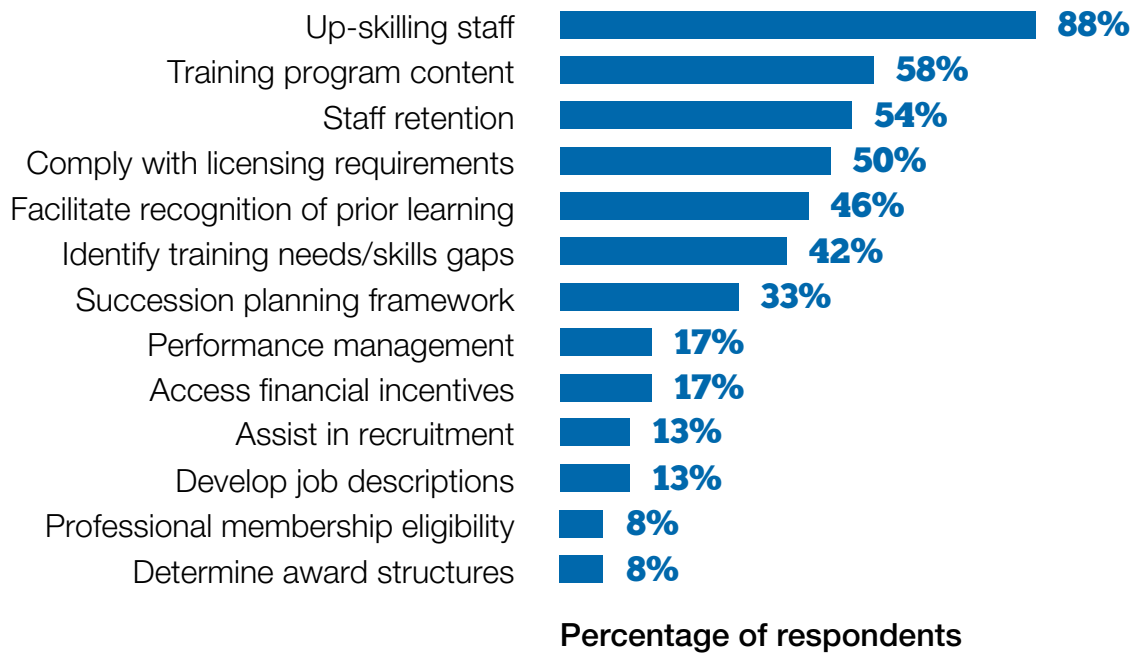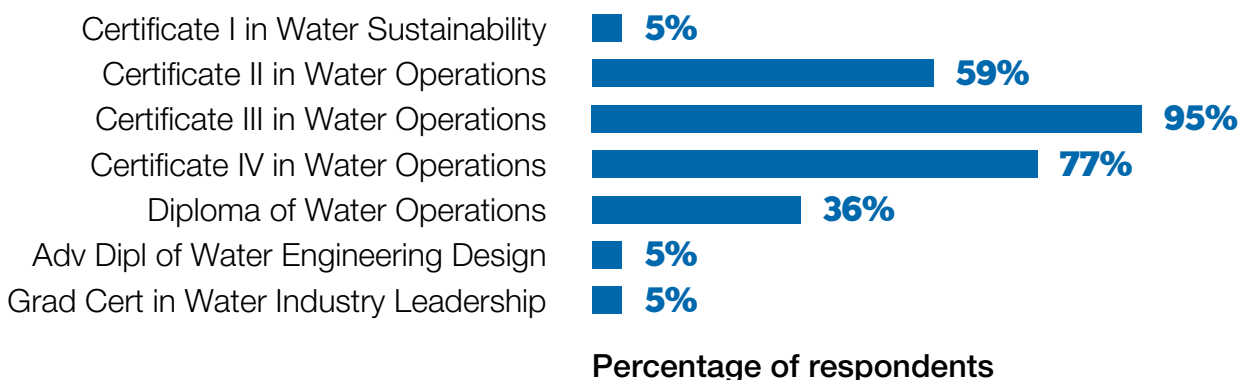| Qualification	Percentage
Certificate I in Water Sustainability	5%
Certificate II in Water Operations	59%
Certificate III in Water Operations	95%
Certificate IV in Water Operations	77%
Diploma of Water Operations	36%
Adv Dipl of Water Engineering Design	5%
Grad Cert in Water Industry Leadership	5%

Percentage of respondents

Access to NWP07 training

Seventy-five per cent of responding organisations indicated that they accessed NWP07 training via private RTOs (Table 8). A further 62.5% indicated that public RTOs were used for training, while 8% indicated that they were an enterprise-based RTO. Where external RTOs were being used, the main factors influencing selection were accessibility (69%), method of delivery (69%), previous experience (62%), reputation (38%) and cost (38%; Figure 6). Fifty-four per cent of respondents felt that the process of finding a suitable RTO was difficult (Figure 7). A further 23% reported 'minor difficulty' in finding a suitable RTO, while the remaining 23% indicated that the process was straightforward.

Fifty-four per cent of respondents felt that they had an average experience in regards to training delivery by the RTO, 38% reported a 'positive' experience and 8% indicated that they had a 'very positive' experience (Figure 8). Some of the respondents that cited an average experience felt that the quality of the course delivery and the trainers were major factors. Interestingly, one respondent who reported that they had a positive experience with their current RTO indicated that they worked with the RTO to improve the delivery of the training to the point where it met their requirements. This may highlight the need for more communication between the organisation and the training provider in order to ensure that training needs are met.

Table 8. Training providers used by responding water organisations

Training provider type	Percentage of respondents that use this provider type
Private RTO	75%
Public RTO (TAFE)	62.5%
Enterprise RTO	8%

Source: GSA data collection

Figure 6. Reasons for selecting external RTOs among water organisations that responded to the GSA survey

Method of delivery	69%
Accessibility	69%
Past experience	62%
Reputation	38%
Cost	38%

Percentage of respondents
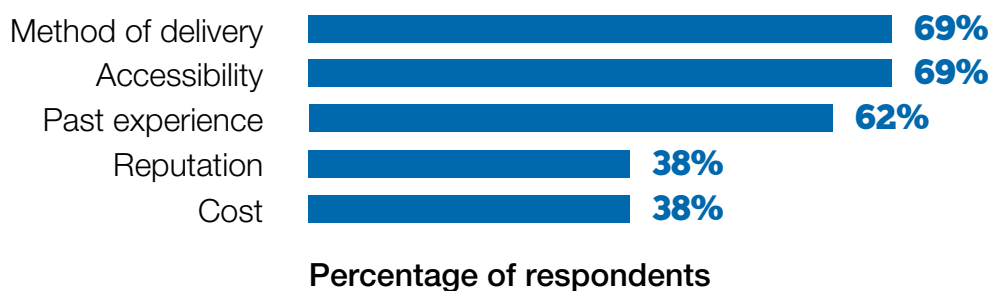
Figure 7. The experience of survey respondents in finding an appropriate external RTO to deliver NWP07 training

0%
23%
23%
54%

- Difficult
- Minor difficulty
- Straightforward
- Could not find an RTO
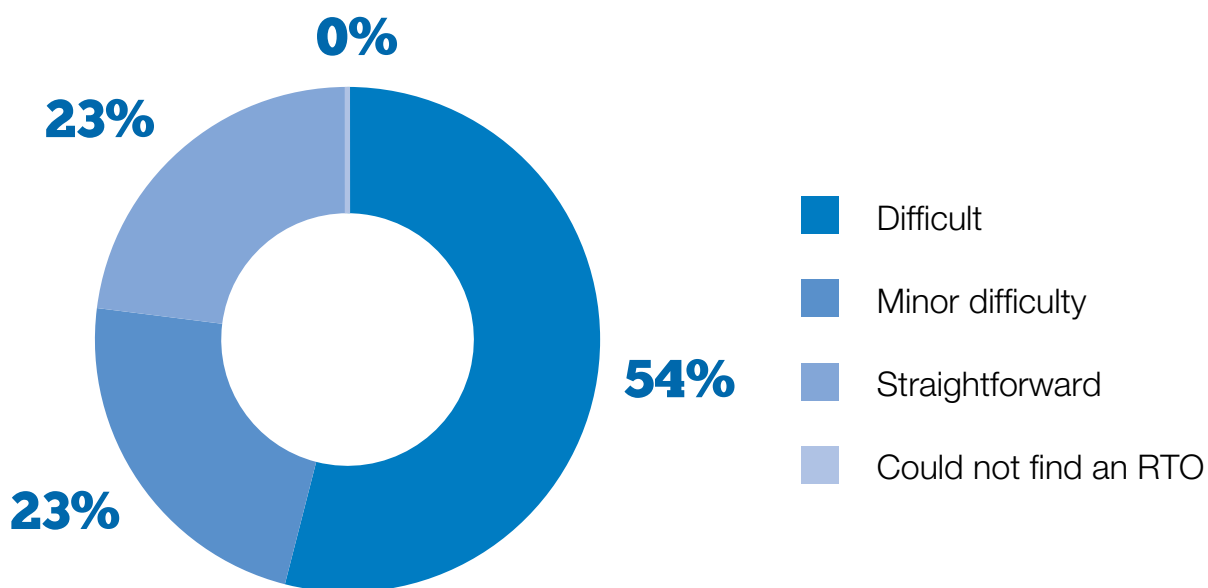
Figure 8. The experience of survey respondents with external RTOs delivering NWP07 training

0% 8%
38%
54%

- Very positive
- Positive
- Average
- Negative
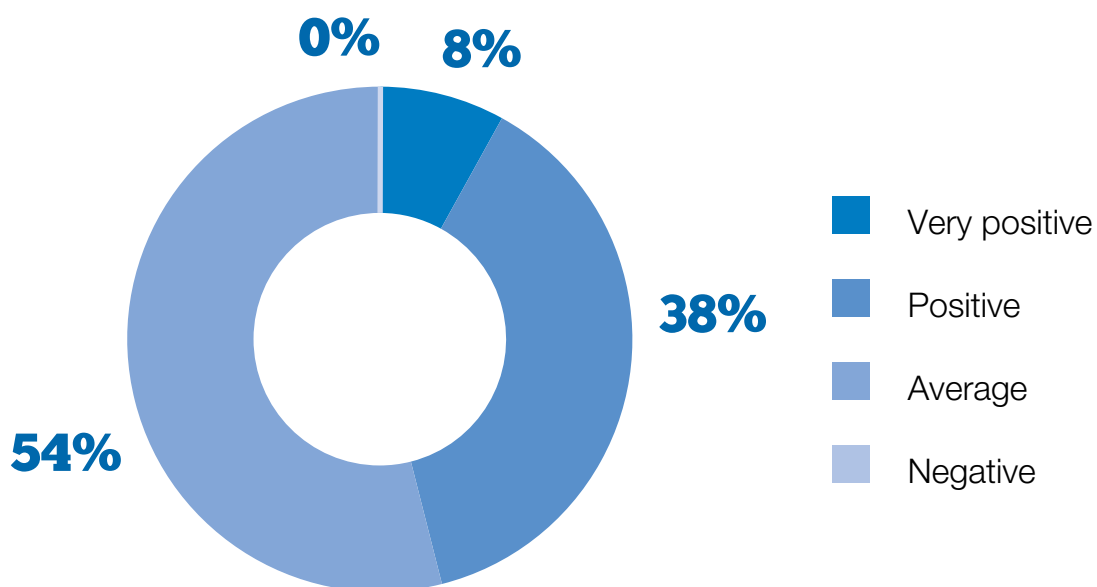
Issues with NWP07 training

Forty-two per cent of respondents indicated that they faced issues in accessing NWP07 training. These issues included:

> a lack of RTOs, particularly in regional and rural areas, leading to high travel costs

> a lack of suitable trainers

> poor quality training and assessment material

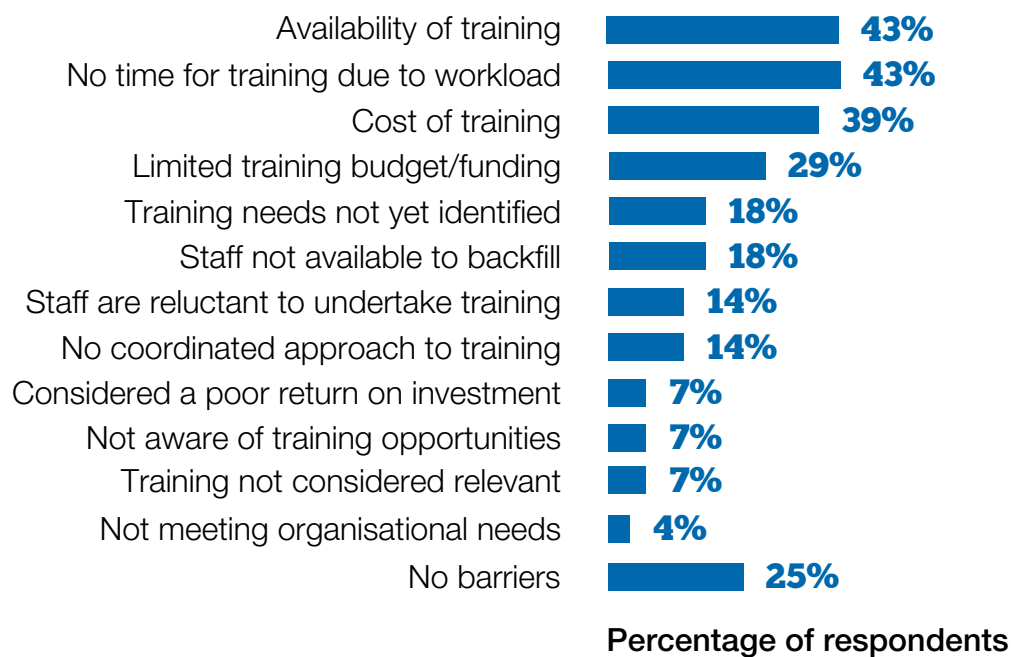> waiting lists in some regions.

These issues align closely with those reported by the NSW ITAB which also identified issues associated with a lack of communication from RTOs [3] [4]. It was also mentioned that there was a perception of limited teaching and skills development in the current training and too great of a focus on recognition and assessment of competency [4]. Greater flexibility around the choice of electives was also mentioned as a current issue [4].

Approximately one-quarter of respondents indicated that they felt a need for the revision of NWP07 content. One respondent indicated that recent NWP07 reviews have been piecemeal and that an over-arching review was necessary; while others identified particular areas for review, including catchment, flood operations and asset management. Comments were also received suggesting that the addition of units relating to new technologies should be considered and that there is a need for additional flexibility within the training package.

Barriers to training: an organisational perspective

A range of barriers to training were identified by responding organisations. The most common barriers were a lack of time to undertake training due to current workloads (43%), and the availability of training (43%; Figure 9). Interestingly, 25% of respondents did not feel that there were any barriers to undertaking training.

Figure 9. Barriers to training within water organisations

Barrier	Percentage
Availability of training	43%
No time for training due to workload	43%
Cost of training	39%
Limited training budget/funding	29%
Training needs not yet identified	18%
Staff not available to backfill	18%
Staff are reluctant to undertake training	14%
No coordinated approach to training	14%
Considered a poor return on investment	7%
Not aware of training opportunities	7%
Training not considered relevant	7%
Not meeting organisational needs	4%
No barriers	25%

Percentage of respondents

The issue of training availability was greater for non-metropolitan organisations, particularly rural and remote organisations, with 33% of metropolitan organisations citing availability of training as a barrier compared to 39% of regional and 63% of rural/remote organisations. This again highlights the need for improved training

delivery in regional and rural locations and potentially identifies a need for alternative delivery options, including e-learning.

Thirty-nine per cent of respondents indicated that the cost of training was a major barrier. Interestingly, when asked about their training budgets for 2011-12, 14% of respondents indicated that their training budget had decreased compared to 2010-11, with a further 48% indicating that their budget had remained the same. Data reported by the AWA indicated that the training budgets of water organisations were often up to 5% of total operating turnover, with some organisations allocating between 9-11% [5].

Whilst many organisations listed the cost of training as a barrier, interestingly 79% indicated that their training budget was sufficient to meet their training needs. One approach to offset the cost of training is to access government funding programs for VET training. Sixty-three per cent of responding organisations indicated that they have accessed Australian Government funding for training, with a further 50% indicating that they have accessed state/territory government funding. Almost 13% of organisations indicated that they have not accessed funding for training. Those that did not access government funding cited a lack of awareness, ineligibility and the difficulty of the application process as the key reasons. The recent introduction of the Australian Government Skills Connect website may assist in simplifying the funding application process by providing a gateway to Australian Government funding programs including the NWDF, Workplace English Language and Literacy (WELL), Investing in Experience and Australian Apprenticeships programs. In addition, GSA will continue to assist organisations with their preparations for funding applications via our workforce development audit service.

One-third of respondents indicated that language, literacy and numeracy (LLN) was an issue within their workforce. It was identified that many workers struggled with basic paperwork while others had low levels of computer literacy and needed training in the use of new technologies. It was mentioned by a small number of respondents that low levels of LLN were proving to be a barrier to further training and development for some staff.

Importantly, it was clear from survey respondents that NWP07 training was having a positive impact on workforce skills and productivity (Figure 10). When asked to rate the extent to which skills and productivity had increased as a result of NWP07 training, 54% indicated a 'notable increase' and 19% reported a 'small increase'. A further 4% cited a 'dramatic increase' within their organisation. Only 8% of respondents felt that NWP07 training had not had an impact on skills and productivity, while 12% felt that it was too early to tell.

Figure 10. The impact of NWP07 training on workforce skills and productivity amongst responding organisations
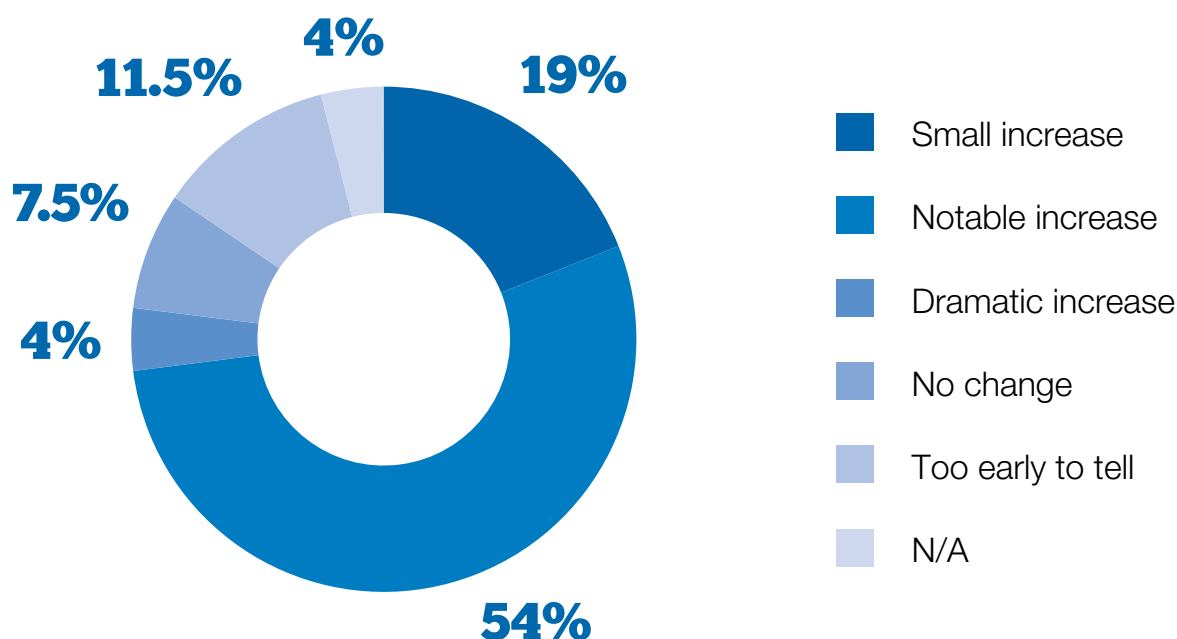
Emerging training needs

The 2011 AWA *National Water Skills Audit* identified a range of training priorities among water organisations. These included:

> leadership

> Certificate III level training

> Work Health and Safety (WHS) training

> training related to new equipment or processes

> Certificate IV level training [5].

Other training needs identified within the audit were:

> project management

> people management

> coaching and mentoring

> strategic skills

> succession planning

> report writing

> financial management

> conflict management [5].

Many of these training areas aligned closely with those identified by the NSW Public Sector ITAB in relation to New England and Mid and North Coast regions of NSW [3] [4]. In addition to the previously-mentioned areas, training demand was identified in the areas of:

> performance management

> asset management

> stakeholder engagement

> environmental management

> potable water quality management

> water legislation and policy

> fluoridisation

> SCADA/telemetry [3] [4].

GSA's *2013 Environmental Scan* identified that organisations within the water industry are having difficulties in attracting engineers, water treatment plant operators, water quality specialists and asset managers; while retention difficulties have also been noted for water treatment plant operators and engineers. Interestingly, a number of survey respondents indicated that a lack of clearly defined career pathways, a lack of training opportunities, and staff not feeling valued were key factors contributing to the current retention difficulties. The introduction of a competency framework that is aligned to occupations within the Water Training Package and outlines the training requirements for specific occupations may begin to address these issues by providing a clear outline of the requirements for occupations and for career progression.

Points for consideration

> The benefits of NWP07 training are clearly evident, with at least 77% of survey respondents indicating that training has increased staff skill levels and productivity

> The quality of training delivery appears to be highly variable, with organisations identifying poor quality trainers and training material

> Improvements to training delivery may require more communication between the organisation and the training provider in order to develop an effective delivery strategy that meets the expectations and needs of the organisation

> Availability of training is an issue for organisations in the water industry, particularly those in regional and rural locations. Methods for greater delivery in these areas, for instance by e-learning and mobile learning, should be investigated further

> Low levels of LLN may prevent further training for some individuals. LLN training, and training in other general areas such as leadership, report writing, the use of new technologies, and project management is needed, in addition to training in water-specific technical skills

> Based on data collection by GSA, there appears to be low utilisation of the Certificate I, Advanced Diploma and Graduate Certificate qualifications within NWP07. The upcoming development of a competency framework will provide further information regarding the relevance of these qualifications as it will align water industry occupations with necessary qualifications and skills sets.

SECTION 3: SURVEY OF REGISTERED TRAINING ORGANISATIONS

A survey was sent to 38 RTOs with NWP07 on scope in order to collect information regarding the qualifications and specialisation streams that were being delivered, and to identify any barriers to delivery. GSA received 11 responses from RTOs that deliver NWP07 training. The responding organisations delivered training across all Australian states and territories (Table 9). Thirty-six per cent of respondents were TAFEs, 27% were private RTOs, 18% were enterprise RTOs and a further 18% were adult community education providers. RTOs from metropolitan and regional areas each accounted for 45.5% of respondents. The remaining 9% of responding RTOs were from rural or remote locations.

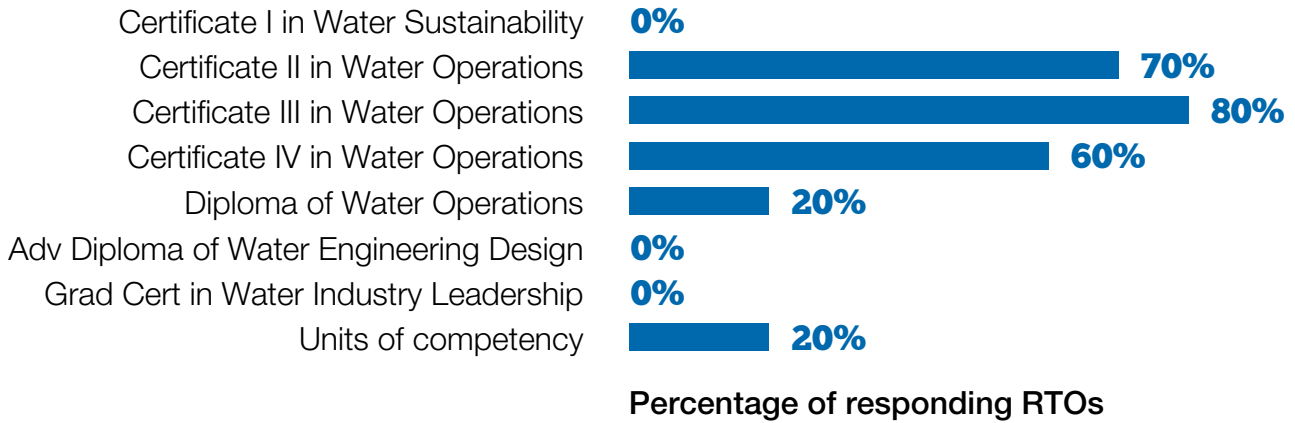**Table 9. States and territories where responding RTOs are delivering NWP07 training**

State/territory	Number of responding RTOs
NSW	7
Vic	2
SA	2
WA	1
Qld	4
Tas	2
NT	1
ACT	0
National	4

Most common qualifications

The most common NWP07 qualifications being offered by responding RTOs were the Certificate III in Water Operations (80% of respondents), followed by Certificate II (70%) and Certificate IV (60%; Figure 11).
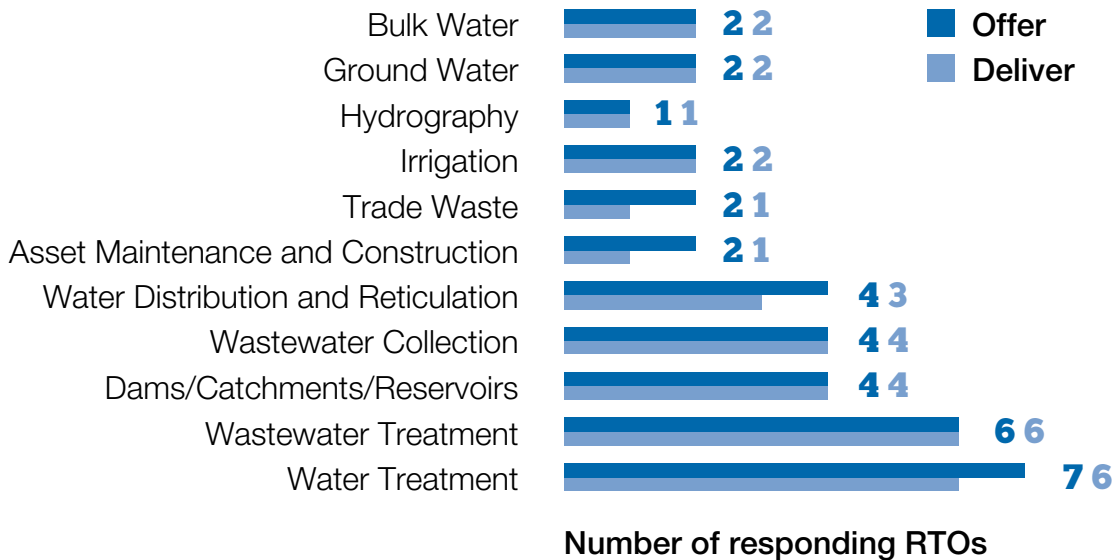
Figure 11. The most common NWP07 qualifications being offered by responding RTOs

Qualification	Percentage
Certificate I in Water Sustainability	0%
Certificate II in Water Operations	70%
Certificate III in Water Operations	80%
Certificate IV in Water Operations	60%
Diploma of Water Operations	20%
Adv Diploma of Water Engineering Design	0%
Grad Cert in Water Industry Leadership	0%
Units of competency	20%

Percentage of responding RTOs

Specialisation streams

The specialisation streams being offered and delivered by responding RTOs are outlined in Figure 12. The most common specialisation streams were water treatment and wastewater treatment.
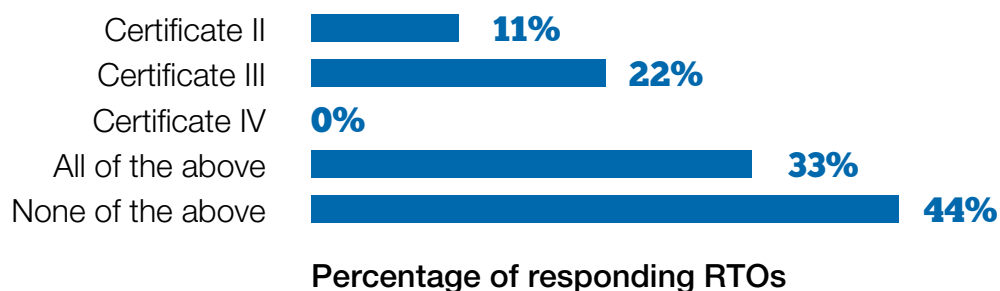
Figure 12. Specialisation streams being offered and delivered by responding RTOs

Stream	Offer	Deliver
Bulk Water	2	2
Ground Water	2	2
Hydrography	1	1
Irrigation	2	2
Trade Waste	2	1
Asset Maintenance and Construction	2	1
Water Distribution and Reticulation	4	3
Wastewater Collection	4	4
Dams/Catchments/Reservoirs	4	4
Wastewater Treatment	6	6
Water Treatment	7	6

Number of responding RTOs

National Water Learning Resources

In 2010, the National Water Commission funded the development of the National Water Learning Resources by GSA, in consultation with industry. These products provide a suite of resources aligned to qualifications from NWP07 and can be purchased by RTOs through GSA. GSA data collection from responding RTOs identified that the National Water Learning Resources were being utilised effectively within the sector. One-third of respondents indicated that they had purchased all of the resources, whilst some had purchased a subset (Figure 13). Forty-four per cent had not purchased any of the National Water Learning Resources.

Figure 13. The uptake of National Water Learning Resources amongst responding RTOs

Category	Percentage
Certificate II	11%
Certificate III	22%
Certificate IV	0%
All of the above	33%
None of the above	44%

Percentage of responding RTOs

The impact of these National Water Learning Resources was highlighted by the fact that 78% of respondents indicated that they would purchase an updated version of the resource if it was available. Twenty-two per cent indicated that they would not consider purchasing an updated version, citing that they would prefer to prepare their own learning materials.
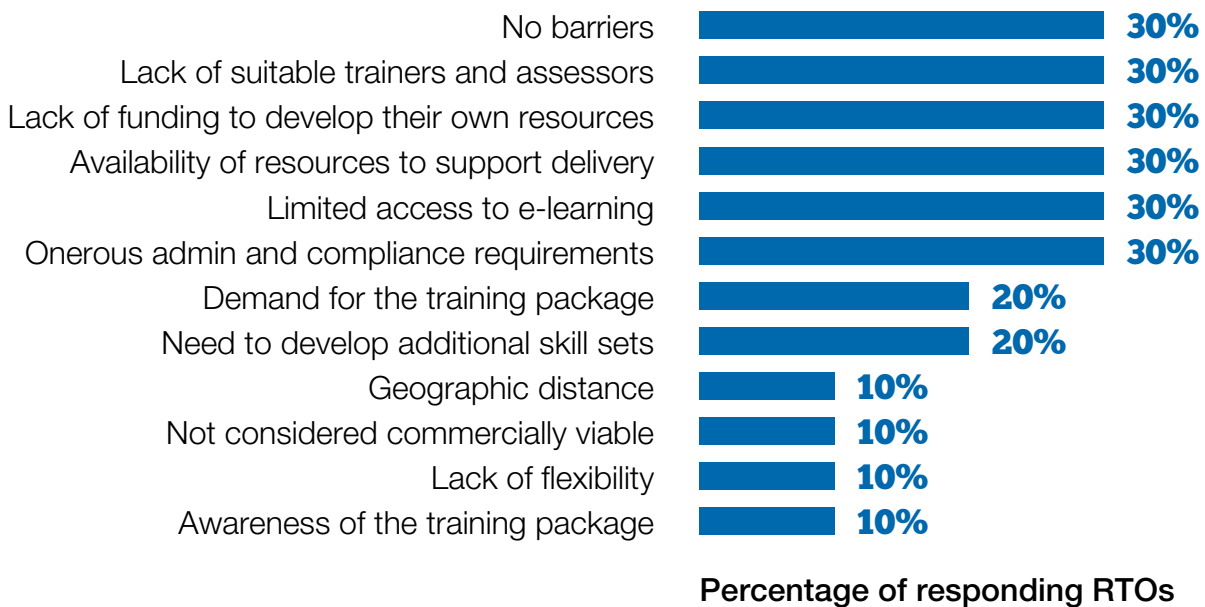
Barriers to training delivery: RTO perspective

Responding RTOs cited a number of barriers to the delivery of NWP07 training (Figure 14). The most common barriers were:

> a lack of suitable trainers and assessors (30% of respondents)

> a lack of funding to develop resources (30%)

> availability of resources (30%)

> limited access to e-learning (30%)

> onerous administration and compliance requirements (30%).

Interestingly, a further 30% of respondents felt that there were no barriers to training delivery. This number is noticeably higher than that of the other government and community safety sectors that GSA represent when they were asked the same question [6]. Further communication with these RTOs may help to identify the approaches that are being implemented within these organisations to ensure successful training delivery.

Figure 14. Barriers to the delivery of NWP07 training

Barrier	Percentage
No barriers	30%
Lack of suitable trainers and assessors	30%
Lack of funding to develop their own resources	30%
Availability of resources to support delivery	30%
Limited access to e-learning	30%
Onerous admin and compliance requirements	30%
Demand for the training package	20%
Need to develop additional skill sets	20%
Geographic distance	10%
Not considered commercially viable	10%
Lack of flexibility	10%
Awareness of the training package	10%

Percentage of responding RTOs

In regards to e-learning in particular, the costs associated with information and communication technology (ICT) infrastructure and the development of resources were cited as the main barriers. Furthermore, it was reported that a lack of understanding of how to implement e-learning was preventing RTOs from introducing e-learning for the Water Training Package. To expand on the issue of NWP07 delivery not being commercially viable, one respondent added that this is of particular note in rural areas, where training is required but the numbers are quite low.

Student commencements and completions: 2011 and 2010

Only eight of the responding RTOs provided information regarding student commencements and completions in 2011, with seven providing information for 2010. As such, this data has not been presented in this report. Within the small data set that was produced, it was apparent that commencements and completions in Certificate III and IV in 2011 were higher compared to 2010. It was also clear that there was minimal uptake of the following NWP07 qualifications: Certificate I in Water Sustainability, Diploma of Water Operations, Advanced Diploma of Water Engineering Design and Graduate Certificate in Water Industry Leadership across these responding RTOs. GSA data collection also identified a substantial amount of training activity corresponding to stand-alone units of competency.

Points for consideration

> Initiatives to improve delivery to regional and remote areas need to be developed and implemented

> RTOs felt that investment in ICT infrastructure and resource development are major barriers to the development of e-learning

> Greater communication between training providers and water organisations may assist in improving the quality of training delivery and ensuring that training needs are being met

> Further development of training and assessment networks may begin to address the shortage of suitable trainers

> The lack of funding to develop training resources is an issue. Continuous improvement and expansion of the National Water Learning Resources would potentially address this issue.

SECTION 4: ANECDOTAL FEEDBACK FROM WATER IAC MEMBERS AND KEY STAKEHOLDERS

Opinions on the effectiveness of NWP07 in meeting industry needs

Water IAC members and key stakeholders indicated that NWP07 was generally meeting industry needs. Terms including 'very effective', 'reasonably effective', 'adequate', and 'appears to be effective' were used by respondents; however, it was indicated that further improvements were still needed.

Respondents also indicated that a number of perceived issues with the training package were primarily related to delivery rather than the package itself, a message reflected by responding water organisations.

Specific comments regarding the Water Training Package

When asked what specific changes to the Water Training Package should be considered, the following comments were received:

> regulatory intervention was needed for the certification of key occupations in the industry. It was also mentioned that the potential introduction of this requirement will have implications on training places and the need for recognition of prior learning (RPL) assessments

> tightening of the wording and requirements of units was suggested in order to make them clearer. It was mentioned by one respondent that they have resources from three different RTOs and the interpretation of the information by the RTOs was highly variable

> there is a need to improve the assessable requirements of the units in order to ensure more consistent training and assessment

> the training package should be structured with an 'industry-managed framework that will provide consistent skills development outcomes for industry'. The respondent continued by indicating that there was a lack of structured frameworks for the training package to operate within in regards to occupational requirements and core competency requirements

> consideration should be given to the introduction of skill sets that are aligned to occupations within the industry

> a review of hydro technician job roles and competencies should be performed

> the training package needed to be able to respond to industry changes more readily. It was felt that, in some instances, continuous improvement activity was not keeping pace with industry needs

> a number of units appear to be similar in content and should be reviewed

> the introduction of defined pathways from VET to university education should be considered for core water industry activity.

A review of existing units and the addition of some new units were also suggested by respondents. These areas will be addressed during the process of streamlining the Water Training Package as part of the implementation of the new *Standards for Training Packages*.

Opinions on the capacity and capability of RTOs to deliver NWP07

A number of issues were raised in regards to the capacity and capability of RTOs to deliver NWP07 training. The most common issues were:

A lack of RTOs to provide adequate delivery, particularly in regional areas

Whilst some respondents indicated that there was adequate delivery in their area, a large number of respondents suggested that there was a shortage of providers in their region. This was of particular note in regional areas. In some instances, respondents indicated that they were accessing training from interstate providers.

A lack of suitably knowledgeable and experienced trainers

One respondent indicated that the establishment of training and assessment networks in NSW had improved the capacity in this area; however, most respondents felt that there was a lack of trainers that had the industry knowledge and experience required to provide suitable training. One respondent indicated that delivery models need to be adopted that better utilise the experience of industry-based trainers and assessors.

Issues with the quality and cost of training delivery

In addition to the issues related to the quality of trainers, one respondent felt that there was too great of a focus on distance learning and RPL of skills learned on the job rather than a focus on skills development and value-added training. Others mentioned that the cost of training continues to be an issue for their organisation. Issues with the consistency of training quality across different providers were also identified.

Points for consideration

In addition to the points raised earlier in this report, IAC member and key stakeholder feedback raised the following points:

> in general, NWP07 was considered to be effectively meeting the needs of the industry

> formal skill sets should be developed, in addition to a competency framework

> a review of all units should be considered, with the addition of some new units also to be considered.

RECOMMENDATIONS AND FUTURE DIRECTIONS

Based on feedback from water organisations, RTOs and key industry stakeholders, this report has outlined a number of issues relating to the content and delivery of NWP07. In general it was indicated that the training package was effective; however, further improvements could be made in order to improve the quality of water industry training. GSA propose the following series of recommendations based on the feedback that was received from the water industry. GSA is committed to the continuous improvement of the Water Training Package and will work collaboratively with the water industry during this process.

1. In response to the need for more clearly defined career pathways aligned to training needs, GSA has commenced development of a competency framework to be embedded within the Water Training Package. This framework will define competency requirements for specific water industry roles which could then be used to validate and develop the existing qualifications and identify any gaps in units of competency and qualifications. In addition, the competency framework will facilitate the development of endorsed skill sets for the Water Training Package, which has strong support from within the water industry. In 2013, GSA will develop a draft framework in collaboration with technical experts from the water industry. This draft framework will be validated with industry in late 2013 and launched in 2014. GSA will then move its focus to promoting and supporting the adoption of the framework across the water industry.

2. It has been indicated that a review of all NWP07 units should be performed. This will occur as part of the process of implementing the new *Standards for Training Packages*, via the streamlining of current material. This work has commenced and will continue during 2013-2014.

3. Feedback from water organisations has identified specific areas where the addition of new units may be necessary. Consideration of new units will be incorporated into the gap analysis that will be performed as part of the competency framework project.

4. Greater than 50% of survey respondents from RTOs indicated that they have purchased some or all of the National Water Learning Resources, while 78% indicated that they would consider purchasing updated resources. To address the need for updated resources, a report is being prepared by GSA that will review the continuous improvement of existing resources, address any gaps, and expand the coverage of the resources. It is anticipated that the first work on this will occur in 2013-2014.

5. A common theme across the three surveys was that a lack of suitable trainers and assessors was an issue. Consideration could be given to the establishment of training and assessment networks in order to support water industry trainers to improve the quality of training. This approach has been used successfully in NSW with the development of the NSW Water Training and Assessment Network (NSW WTAN), with funding from the NSW Department of Education and Communities [7]. Progress towards a national water training and assessment network has been made through the Industry Workforce Development Strategy [8]. This project has commenced and is being managed by AWA with support from the NSW Public Sector ITAB.

6. It was highlighted by one respondent that the quality of training delivery improved noticeably when they communicated their needs to the provider. This highlighted that greater emphasis should be placed on improving communication between training providers and water organisations to ensure effective delivery that meets expectations and requirements.

7. Responding water organisations from regional and rural areas indicated that access to RTOs was a major barrier to training. This highlights that there is a need to investigate approaches to improve accessibility to training for organisations in these locations. One example is coordination among regional councils to pool resources for group training as a measure to improve training affordability.

8. A number of organisations indicated that they did not utilise government funding for training, with the difficulty of the application process cited as a reason. Whilst the introduction of the Australian Government Skills Connect website may begin to simplify the application process, these findings indicate that GSA should continue to assist organisations by providing advice and assistance with funding applications. This assistance includes our workforce development audit service. GSA has recently expanded our capacity in this area in response to industry needs.

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[5]   Australian Water Association, "AWA National Water Skills Audit Report," 2011.

[6]   Government Skills Australia, "2013 Environmental Scan," 2013.

[7]   NSW Water Training and Assessment Network, [Online]. Available: http://wtan.com.au/. [Accessed 26 February 2013].

[8]   Water Services Association of Australia, "Industry Workforce Development Strategy," [Online]. Available: https://www.wsaa.asn.au/Policy/Pages/Industry-Workforce-Development-Strategy.aspx. [Accessed 10 April 2013].

List of abbreviations

ABS	Australian Bureau of Statistics
ANZSCO	Australian and New Zealand Standard Classification of Occupations
AWA	Australian Water Association
EBPPP	Enterprise Based Productivity Places Program
GSA	Government Skills Australia
IAC	Industry Advisory Committee
ICT	Information and communication technology
ISC	Industry Skills Council
ITAB	Industry Training Advisory Body
LLN	Language, literacy and numeracy
NCVER	National Centre for Vocational Education Research
NWDF	National Workforce Development Fund
NWP07	Water Training Package
RPL	Recognition of prior learning
RTO	Registered Training Organisation
SCADA	Supervisory control and data acquisition
TAFE	Technical and Further Education
TGA	www.training.gov.au
VET	Vocational Education and Training
WELL	Workplace English Language and Literacy
WHS	Work Health and Safety
WIST	Water Industry Skills Taskforce
WTAN	Water Training and Assessment Network