Automotive Industry Skills Plan 2007 - 2010

QUEENSLAND
AUTOMOTIVE SKILLS ALLIANCE
'FOCUSED ON THE FUTURE'

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EXECUTIVE SUMMARY

This **"Industry Skills Plan 2007-2010"** for the Automotive Industry provides information, sectoral analysis of labour and skill requirements, and strategies by which to minimise the impact of current and forecast skill shortage within the majority of the industries diverse sectors. It also aims to influence the allocation of publicly funded training and future infrastructure development to ensure that training delivery and assessment services are provided in a method best suited to meet the industries demand.

The exponential growth of the automotive industry in Queensland is unprecedented, in terms of sales and registrations. In addition, increased population growth in Queensland, significant infrastructure development, and the resource sector boom all add up to an urgent need for an increase in the skilled labour force required to service and repair these vehicles and equipment.

The other factor which is also contributing to a demand for skills development for existing workers is the advancement in the technology utilised in most modern vehicles and equipment. The innovation intensity of product development has resulted in the need for ongoing skills development of qualified tradespersons and the continuous review of apprentice training programs. This is to ensure the provision of information to increase knowledge and to aid in the development of necessary skills in areas such as engine management systems; emissions filters and systems; Canbus control technology; and alternate fuels.

The Queensland Skills Plan outlines a policy framework that will better match the supply of skilled labour to industry's needs and the economy's demands. The range of actions the Queensland Government will take to implement these policies is a framework with the following four key elements:

- A training system that works for Queensland
- Training that works for industry and employers
- Training that works for the trades
- Training that works for individuals

This significant commitment to policy development also supported by substantial investment in developing training infrastructure by the Queensland Government has been both needed and welcomed by the automotive industry. However, there is an underlying recognition that the journey has just begun and that industry together with Government must like never before forge dynamic partnerships to overcome what is a skills crisis for many of the automotive trades. In particular, the trades of vehicle smash repairs, spray painting, heavy commercial vehicles and light vehicle motor mechanic.

The Queensland Automotive Skills Alliance has identified a number of strategic actions contained in the Plan that will contribute to the minimisation of the current and future skills shortages. The Alliance is committed to maintaining a consistent and open dialogue with the industry, and it aims to report strategic information and advice to the Department of Education, Training and the Arts on training and skills issues from an industries perspective accurately and promptly.

INTRODUCTION

PURPOSE

The **"Automotive Industry Skills Plan 2007-2010"** (ISP) is the product of consultations between industry, the Queensland Government, and a diverse group of stakeholders who support the automotive industry across Queensland.

The Automotive Industry Skills Plan aims to identify and confirm the impact that the drivers of skills needs are having on the automotive industry. Further, it seeks to identify implications for future skills demand and training delivery.

This Plan suggests a range of recommendations, high-level strategies and initiatives to meet current and emerging industry skills needs. Feedback from industry consultations undertaken by the Queensland Automotive Skills Alliance (QASA) and an extensive survey of employers has informed and validated these recommendations and strategies.

This ISP focuses on the Retail, Repair and Service segments of the automotive industry in the following sectors:

1. Sales & Administration
2. Bicycles
3. Motorcycles
4. Electrical Technology
5. Marine
6. Mechanical Technology (light vehicle, heavy vehicle and specialist)
7. Motorsport
8. Outdoor Power Equipment
9. Vehicle Body

It is specifically designed to provide information to assist:

- Workplace and Human Resource planning by industry and enterprises
- Development and maintenance of the Automotive Training Package by Automotive Training Australia
- Tailoring of service delivery by training providers to meet current and future industry needs
- Policy development and priority setting by the Queensland Department of Education, Training and the Arts; and other government departments and agencies involved in vocational education and training (VET)
- Policy development and priority setting by all government departments and agencies involved in industry development

Information in this ISP has been formulated by reviewing and analysing diverse sources of industry information through a combination of:

- Research of relevant literature
- The collection and analysis of a range of statistical data on labour market, economic, industry and VET trends
- Survey results collated from automotive industry employers throughout Queensland
- Strategic input from industry associations within Queensland and interstate
- Consultations with the QASA Board and associated Advisory Committees

INDUSTRY ORGANISATIONS

The **Queensland Automotive Skills Alliance** (QASA) Pty Ltd was established as a result of a successful tender arrangement with the Queensland Government through the Department of Education, Training and the Arts. Skills Alliances are one of the newly devised Queensland Government industry engagement models outlined in the Queensland Skills Plan. The QASA consists of four peak industry associations together with the support of the relevant trade union body. The consortium partners include the:

a. **Motor Trades Association of Queensland** (MTAQ),
b. **Commercial Vehicle Industry Association of Queensland** (CVIAQ),
c. **Institute of Automotive Mechanical Engineers** (IAME),
d. **Construction & Mining Equipment Industry Group** (CMEIG) and
e. **Australian Manufacturing Workers' Union** (AMWU).

The QASA will collectively represent over 10,000 members from the Retail, Services and Repair (RS&R) sectors of the automotive industry.

Other industry organisations consulted included the **Civil Contractors Federation** (CCF), **Motor Trades Association of Australia** (MTAA), **Automotive Training Australia** (ATA), **Federal Chamber of Automotive Industries** (FCAI), **Commerce Queensland** and the **Australian Industry Group** (AiG).

AGEING WORKFORCE AND GENERATIONAL TRANSITION

One of the most significant factors that the automotive industry faces over the medium and long-term, like all other spheres of the workforce, and society in general is our Nations ageing population. The Howard Government's framework to address the challenges this creates for us as a nation over the next forty years is encapsulated in the Australian Government's Charter of Budget Honesty. One of the key requirements contained within this Charter is the presentation of an Intergenerational Report (IGR) every five years. It is to report honestly and openly on the effect this generation will have for the one that follows. The IGR has widespread and bipartisan acclaim and has been enormously influential in setting government policy.

Although the number of people living in Australia will rise, the proportion of working age will decrease. The proportion of people of traditional working age, 15-64 years, is projected to be below 60 percent in 2047. That's 8 percentage points lower than 2007. Growing even faster than the proportion of people aged 65-84, is the

proportion aged 85 and over. In real terms that means fewer people of working age in proportion to those of retirement age.
This is the result of lower birth rates in previous years and increasing life expectancies. This also means that real Gross Domestic Product (GDP) per person is projected to increase by 1.6 per cent per year on average over the next 40 years, compared with 2.1 per cent over the past 40 years. Australia is basically at its best point now in terms of the demographic transition. After 2010, the dependency ratio, the ratio of children and older people to people of working age is expected to increase more rapidly as baby boomers reach Age Pension eligibility.

As the population ages, the smaller proportion of people of working age is clearly a potential brake on future economic growth. The three factors impacting on population are fertility, mortality and migration. Over the past five years our national fertility rate which has been declining for over forty years reached its lowest point and has now marginally turned up. However, it is still below replacement rate. The net migration intake has increased and has averaged around 110,000 people over the last ten years, with a shift in favour of skilled migration. This has had a positive effect on the number of people of traditional working age. While increasing our fertility and migration rates to assist in meeting the number of workers needed in the future, we also must ensure that people are able to work to their full potential.

This can be done through improvements to participation and productivity. Participation is the average number of hours worked in the labour force by each working age person. Productivity refers to average output produced per hour of work. With record low unemployment rates, the challenge is to reduce barriers to participation and help people rejoin the workforce where possible. In participation terms Australia's labour force rates are increasing with the trend towards increasing participation for women and older workers continuing.

In an economy that is close to full employment, productivity is a clear target for policy action. The area cited by the outgoing Governor of the Reserve Bank Ian Macfarlane as the area with the greatest scope of productivity is industrial relations reform. The Federal Government introduced WorkChoices to assist in boosting productivity through creating a more flexible labour market. This must also be complemented with the right mix of skill development opportunities and incentives for both the employer and employee.

As a result of this impending reality of an ageing workforce and generational transition, government must adopt these three measures to prioritise its policies i.e. does the policy impact on population, productivity or participation? If a policy or allocation of certain funding to support programs do not impact on these parameters it is not significant in the current or future economic context of our industry, State or Nation.

In a time where unemployment rates are at historically low levels, industry sectors are being forced to compete with one another for a portion of the labour pool. To this end the population parameter is not of great significance but is relevant through the augmenting of the skills pool by the migration of suitably qualified people.

Productivity however is a key determinant. Productivity can be achieved through a number of avenues, including the introduction of more efficient work processes and support systems, advanced technological equipment and robotics.
However, one of the most significant and tangible impacts on productivity is that of skilling the current and future workforce. In addition participation is also of extreme relevance and extends to include the issues of retention for those entering the industry and the continued active employment of people in the industry post the traditional retirement age. One of the other areas most significant for the automotive industry which must be addressed more than ever before is its ability to attract women, people with a disability, indigenous and older workers to the industry. This issue is amplified in the labour market statistics and subsequent analysis reflected in this Plan.

Comparative Australian Bureau of Statistics Labour Force Survey for the 2007 February Quarter reports that there are 41,400 male employees and 12,700 female employees. The proportion of females employed in the industry is a direct reflection of the limited number of opportunities for females and/or the lack of appeal a career in the automotive industry portrays. The majority of the mechanical trades are categorised as non-traditional for women, however with the continued advancements in vehicle technology, and with this an increased demand for diagnostic and computer skills the trades may become more attractive to some women.

INDUSTRY SIZE AND WORKFORCE

INDUSTRY OVERVIEW

The automotive manufacturers and importers within Australia sell their products through predominantly independent franchised dealer networks.

These dealers are significant employers in their own right, who require a range of employees with diverse skill sets. There are clearly established technical career paths which include various levels of supervisory and a variety of management positions. Automotive industry dealers traditionally carry out six primary activities:

- New vehicle / equipment sales
- Used vehicle / equipment sales
- Repair and servicing of their products (in some instances this includes smash repairs)
- Sale of spare parts and accessories
- Financing and insurance of their product sales
- General management and administration

Although the vast majority of dealers are essentially independent businesses, they have very close linkages with the manufacturers and importers through their franchise arrangements.

Heavy commercial vehicles, heavy equipment, motor vehicles, motorcycles and bicycles all require regular preventative maintenance and on occasion repair. Service and repair requirements are often delivered through the service sections of the retail dealer networks, and the independent aftermarket service providers. These include local workshops, some service stations, specialised outlets such as Ultratune and mobile organisations like LubeMobile.

The increasing segmentation in the industry has provided for the development of a number of specialist enterprises. Examples include Midas (exhaust systems), Fluidrive (automatic transmission repairs), Bob Jane T Marts (tyres) and member companies of the Vehicle Air Conditioning Association.

The second major segment of the automotive industry sector is the body repair industry, essentially aimed at accident repairs. The three major functions they undertake include panel and mechanical repairs and spray painting. These service and repair segments are geographically dispersed, and of which the majority are small businesses.

The automotive aftermarket industry is an important component of the overall automotive industry. In Queensland, this sector's turnover equates to over $1.5 billion per annum and employs over 5,500 people. The aftermarket sector includes:

- Manufacturers engaged in the manufacture or re-manufacture of automotive parts, accessories, tools and equipment for local and/or export markets
- Distributors, including companies engaged in wholesaling, importing warehousing or acting as manufacturers' agents
- Retailers, including independent or group stores engaged in the retailing of parts, accessories, tools and equipment

Component and vehicle recycling and disposal is an industry activity that is likely to achieve increasing importance as greater emphasis is placed by the Government and industry on the need for effective recycling or disposal of the industry's products at the end of their lifecycle. More than 300 automotive parts recyclers operate around Australia in a geographically dispersed manner.

The smaller related sectors of the automotive industry include:

- Outdoor power equipment
- Marine
- Bicycles

These sectors represent a microcosm of the larger industry elements, and they face many of the same issues. This being a sever skills shortage, continued advancements in technology, and the competitiveness of a global market.

The automotive industry is one of the world's biggest industries. This encompasses a huge investment in plant and equipment, large workforces, large and complex supply chains and a heavy involvement in world trade and investment. Perhaps less well recognized, but no less significant, the automotive industry is an important platform for the application and development of many new products, processes and organisational technologies and methodologies. The global automotive industry is one of the largest performers of research and development and a major source of innovation.

Some of the recent and future influences that global innovation will have on new product technologies for the international automotive industry are extensive. A key development, for example, is the likely significant change in automotive power train technologies. Hybrid powered vehicles (light and rigid trucks) are already on our roads and within the next ten to fifteen years this ongoing investment in research and development in fuel cell technology will have paid off, and it is generally believed we will have moved to widespread application, almost completely replacing petrol driven engines.

This all translates into significant challenges for the industry especially as it relates to the much needed recruitment and retention of skilled labour. The traditional apprenticeship pathway utilised to meet industries skills needs is stretched to breaking point through the lack of quality applicants, limited training infrastructure and inflexibility by RTO's to deliver training and assessment services as and when industry requires it.

TABLE 1: OVERVIEW OF THE RETAIL MOTOR TRADES (BUSINESSES)

RETAIL MOTOR TRADES	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Total
Air Conditioning Technicians	687	438	553	215	189	31	28	43	2,184
Auto Electricians	983	769	677	207	336	68	32	69	3,141
Automotive Accessory Retailers	1,021	677	688	260	365	73	33	81	3,198
Automotive Dismantlers	884	1,338	685	397	274	77	27	49	3,731
Automotive Radios & Stereo Specialists	283	243	187	82	81	21	16	19	932
Automotive Trimmers	345	297	262	94	122	26	17	15	1,178
Battery Retailers And Reconditioners	765	546	544	213	211	49	23	44	2,395
Brake &/or Clutch Specialists	964	820	796	224	249	81	38	71	3,243
Car Alarm Fitters	273	257	167	84	108	22	8	21	940
Car Dealers – New	1,617	1,205	1,366	363	413	107	61	92	5,224
Car Dealers – Used	1,379	1,091	944	367	333	106	54	76	4,350
Car &/or Minibus Rental	997	656	789	144	374	100	75	32	3,167
Car Hire–Chauffeur Driven	590	649	352	179	300	38	26	33	2,167
Caravans&/or Equipment Retailers	322	318	367	131	125	36	11	9	1,319
Diesel Engineers	130	66	172	44	50	7	12	7	488
Engine Reconditioners	368	388	321	140	145	31	20	23	1,436
Exhaust System Specialists	622	411	377	161	180	41	14	37	1,843
Farm Machinery Dealers	451	455	368	252	213	51	20	10	1,820
Fuel Injection Specialists	375	225	265	59	96	42	12	36	1,110
LP Gas Conversions Specialists	174	237	121	101	68	10	3	15	729
Marine Engineers	110	28	152	20	66	22	12	0	410
Motor Boat & Marine Dealers	480	214	402	99	141	65	19	13	1,433
Motor Body Builders	215	141	142	59	64	58	4	3	686
Motor Car & Truck Cleaning Services	683	637	564	241	267	41	16	48	2,497
Motor Cycle Dealers	656	538	519	176	215	80	22	41	2,247
Motor Engineers & Repairers	5,776	4,924	3,659	1,308	1,658	322	150	305	18,102
Motor Fuel Outlets	2,693	1,523	1,664	639	1,128	309	99	98	8,153
Panel Beaters & Painters	2,146	1,774	1,144	518	507	129	43	93	6,354
Radiator Repairers	325	275	256	123	98	31	11	17	1,136
Tow Truck Operators	1,137	771	585	204	279	77	29	70	3,152
Towing Equipment	179	171	138	32	58	16	8	8	610
Trailers &/or Equipment	327	292	374	96	114	20	24	11	1,258
Transmission Specialists–Cars	434	369	302	101	116	19	10	20	1,371
Transmission Specialists – Trucks	33	29	39	7	21	1	2	1	133
Truck& Bus Repairers	408	344	314	98	116	25	15	16	1,336
Tyre Retailers &Retreaders	1,591	1,150	1,086	354	526	101	38	78	4,924
Wheel Alignment & Balancing Specialists	442	275	311	108	108	15	14	35	1,308
Windscreen Repair Specialists	462	340	361	125	121	24	16	24	1,473
Total	31,372	24,881	22,013	8,025	9,835	2,372	1,062	1,663	101,178

Source: MTAA – Motor Facts 2006

New product engineering technologies

Vehicles, and their constituent components, are incorporating higher levels of technology than ever before. Cars, trucks, buses, and heavy earthmoving equipment are becoming extremely information technology (IT) intensive, with the value of electronics and semiconductor content as a percentage of production costs for an average vehicle increasing dramatically over the past 15 years.

The continual upgrading of the technology embedded in vehicles is being driven by the needs of the vehicle manufacturers to:

- Increase the attractiveness and efficiency of vehicles to customers
- Meet higher environmental standards, and
- Meet higher safety and anti-theft standards

These imperatives are leading to greater use of electronics and wireless IT systems which allow the vehicle manufacturers to offer:

- Interactive services such as navigation systems and fault diagnostics
- More fuel efficient and environmentally friendly engine systems
- Weight reductions through mechatronic systems – the combination of mechanical and electronic functions in one product – such as drive and brake by wire, and
- Greater safety through using embedded sensors to improve airbag, braking and steering performance

The higher levels of technology now involved in vehicles, and the expectation that this trend will continue, is forcing a significant upgrading in the skills and innovation capabilities of the automotive industry. With the emergence of technologies such as mechatronics and increased reliance on computer-based diagnostic equipment, employee skills have needed to broaden and deepen. In response, the industry has placed increasing focus on training at all levels of its workforce, to raise the skills profile of the industry. In order to meet challenging environmental and safety standards, the industry has also been making major efforts in research and development and design using advanced simulation visualisation technology (ASVT) as it seeks to optimise drive-train performance, to reduce vehicle weight and improve safety features.

The growing significance of technology to the automotive industry is highlighted as follows and illustrates some of the current technology hot-spots involved in modern vehicles. The innovation intensity of the industry is reflected not only by its increasingly high technology products but also in its efforts to improve design and production processes. The automotive industry globally has led the way for other manufacturing sectors in the adoption of just-in-time inventory management, lean production methodologies, and use of robotics and now in relation to total productive management. The highly competitive nature of the industry is continuing to spur such leadership in design and production process innovation. All of this effort translates into the necessity for skills acquisition and development for all trades involved in the retail, repair and service sectors of the automotive industry in Queensland.

Technology Hot-Spots

Features:
Interactive Entertainment
GPS
Vehicle Security Systems
Fault Diagnostics (Canbus Technology)

Performance:
Engine Technology
Anti-Lock Braking Systems (ABS)
Vehicle Stability Control systems
Aerodynamics

Environmental impacts:
Engine Systems (hybrids, fuel cells)
Weight Reduction (light steels, aluminium, magnesium, plastics)
Emissions Systems (H/V) Filters (PMV & H/V)
Alternate Fuels (LPG & NPG)

Safety:
Airbags (sensors)
Body Design Characteristics
Anti-Lock Braking Systems (ABS)

Enabling technologies

Power technology, materials technology, nanotechnology, mechatronics, semiconductors, software, wireless technology, and computer technology.
(Source: Allen Consulting Group synthesis of material in Strategy Analytics report, Car of 2010)

Vehicle Sales May 2007

New Vehicle Sales

	Month		YTD		Variance +/- Vol. & %			
Total Market	**2007**	**2006**	**2007**	**2006**	**MTH**	**YTD**	**MTH**	**YTD**
AUSTRALIAN CAPITAL TERRITORY	1,400	1,225	6,720	5,824	175	896	14.3%	15.4%
NEW SOUTH WALES	26,649	25,108	129,063	119,934	1,541	9,129	6.1%	7.6%
NORTHERN TERRITORY	973	863	4,256	3,887	110	369	12.7%	9.5%
QUEENSLAND	20,428	18,781	94,105	84,993	1,647	9,112	8.8%	10.7%
SOUTH AUSTRALIA	5,237	5,602	25,200	24,881	-365	319	-6.5%	1.3%
TASMANIA	1,587	1,624	7,082	6,961	-37	121	-2.3%	1.7%
VICTORIA	22,151	20,782	104,896	97,734	1,369	7,162	6.6%	7.3%
WESTERN AUSTRALIA	10,172	9,472	47,957	42,498	700	5,459	7.4%	12.8%
Total	**88,597**	**83,457**	**419,279**	**386,712**	**5,140**	**32,567**	**6.2%**	**8.4%**

Source: www.autoindustries.com.au

New Motor Vehicle Sales by Vehicle Type 2000-2005

Vehicle Type	2000	2001	2002	2003	2004	2005
Passenger	553,673	529,452	540,240	588,511	589,985	608,804
Sports Utility			138,064	150,578	173,087	180,292
Light Trucks	231,842	224,270	124,873	146,589	163,676	167,878
Heavy Trucks	19,585	18,959	21,132	24,133	28,481	31,295
Total	**805,100**	**772,681**	**824,309**	**909,811**	**955,229**	**988,269**

Total Number of Vehicles on Register

From a culmination of statistics from all Motor Registry Offices around the country, which were registered at 31 March 2006, there were 14.4 million motor vehicles, including motorcycles, registered in Australia at 31 March 2006. This represents an increase of 12.0% since the 2002 Motor Vehicle Census (MVC), when there were 12.8 million vehicles registered in Australia. The average annual growth over this time was 2.9%.

Type of Vehicle – Census years 2002 and 2006				
Vehicle Type	**2002 – Number Registered**	**2006 – Number Registered**	**Percentage Change**	**Average Annual Growth**
Passenger vehicles	10,101,441	11,188,880	10.8	2.6
Campervans	35,164	41,520	18.1	4.2
Light commercial vehicles	1,819,993	2,114,333	16.2	3.8
Rigid trucks	341,483	383,546	12.3	2.9
Articulated trucks	63,905	71,680	12.2	2.9
Non-freight carrying trucks	18,797	20,293	8.0	1.9
Buses	70,196	75,375	7.4	1.8
Motor cycles	370,982	463,057	24.8	5.7
Total Motor Vehicles	**12,821,961**	**14,358,684**	**12.0**	**2.9**

Source: www.abs.gov.au

The passenger vehicle fleet has grown from 10.1 million in 2002 to 11.2 million in 2006, an increase of 10.8%. Motorcycles (24.8%) and campervans (18.1%) were the vehicle types showing the largest growth over this time.

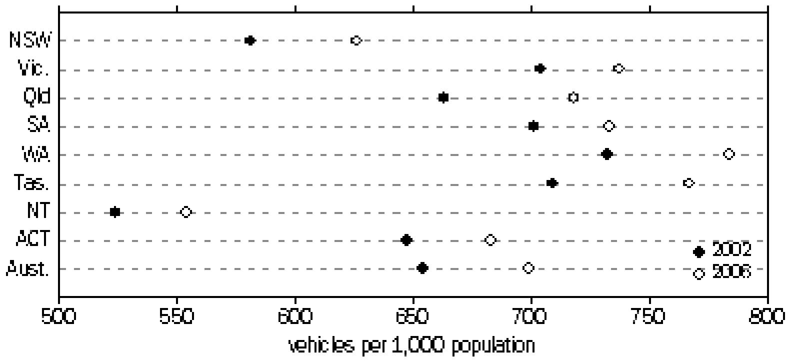
Light commercial vehicles rose by 16.2%, while rigid trucks rose by 12.3% and articulated trucks rose by 12.2%. Buses had the smallest growth over the same period increasing by 7.4%.

Registration of Vehicles in all States and Territories

New South Wales had the largest share of the Australian fleet with 4.3 million (29.7% of the total) registered vehicles, followed by Victoria with 3.7 million (26.1%) and Queensland with 2.9 million (20.2%). The Northern Territory had the smallest share with 0.1 million (0.8%) registered vehicles. These shares are comparable with the distribution of the population across states and territories.

Vehicles and Resident Population

From 2002 to 2006, two states experienced growth above the national average of 12.0%. The motor vehicle fleet in Queensland showed the largest growth with an 18.5% increase since 2002, an average annual growth of 4.3%. Western Australia was the other state experiencing growth above the national average, increasing 13.9% since 2002. South Australia showed the smallest growth in fleet size since 2002 (7.0%), an average annual growth of 1.7%.



(a) Both Estimated Resident Population data and Motor Vehicle Census data are at 31 March.
Source: ABS Australian Demographic Statistics (cat. no. 3101.0)

There were 699 motor vehicles per 1,000 of the resident population in Australia in 2006. This compares to 654 vehicles per 1,000 residents in 2002, representing an increase of 45 vehicles per 1,000 residents over this time.

Western Australia had the highest rate of all states and territories with 784 vehicles per 1,000 residents in 2006, while the Northern Territory had the lowest rate with 554 vehicles per 1,000 residents.

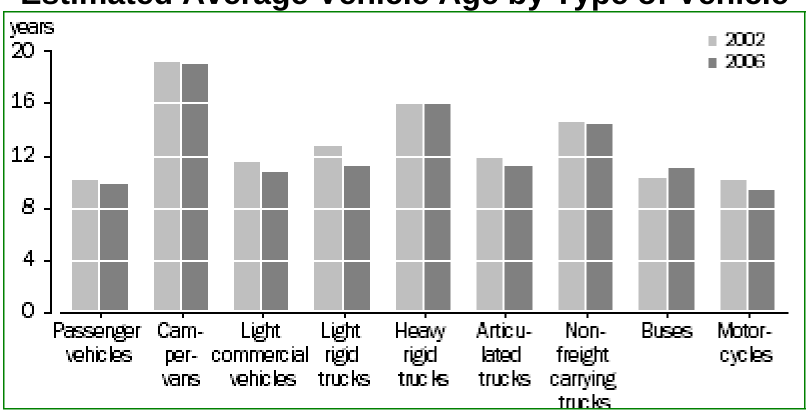
Average Age of the Fleet

The average age of all vehicles registered in Australia at 31 March 2006 was 10.1 years. This is slightly younger than the 10.5 years recorded in the 2002 MVC. Vehicles manufactured before 1991 (more than 16 years old) comprised 22.9% of the total Australian fleet.

Campervans were the oldest vehicles registered with an average age of 18.9 years, while motorcycles were the youngest vehicle type with an average age of 9.4 years.

The average age of passenger vehicles dropped slightly from 10.1 years in 2002 to 9.8 years in 2006, with 21.0% of passenger vehicles manufactured before 1991.

Estimated Average Vehicle Age by Type of Vehicle



Characteristics of the Fleet

Passenger vehicles

Passenger vehicles accounted for 77.9% of all vehicles registered in Australia to 2006. The state/territory with the largest proportion of passenger vehicles was the Australian Capital Territory with 85.6%, while the Northern Territory had the smallest share with 64.3%.

All states and territories showed increases since 2002, with passenger vehicles registered in Queensland showing the largest increase (16.4%) and those registered in South Australia showing the smallest (6.1%). These growth figures in Queensland are reflective of the interstate migration primarily from the Southern States.

Of the total 6.0 million passenger vehicles owned in Australia, the major makes were Toyota, Holden or Ford. Respectively, these three makes accounted for 18.8%, 18.5% and 16.8% of the total passenger vehicle fleet registered as at 31 March 2006.

Trucks

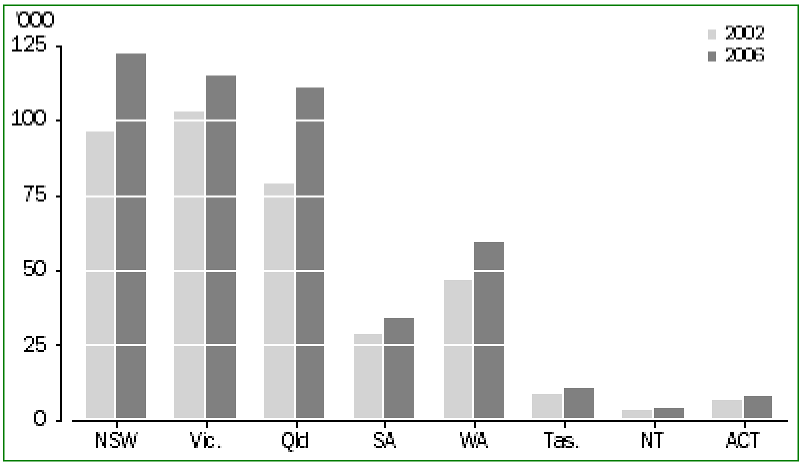
Rigid trucks accounted for 2.7% of all vehicles registered in Australia in 2006. The number of registrations for the heaviest rigid trucks (those with a gross vehicle mass (GVM) (greater than 20 tonnes) has increased by 27.8% since 2002, while registrations for rigid trucks with a GVM of less than 20 tonnes increased only 9.4% over the same period.

Articulated trucks accounted for 0.5% of all vehicles on register in 2006. Articulated trucks with a gross combination mass (GCM) (greater than 60 tonnes) increased by 60.1% since 2002, while those with a GCM of up to 60 tonnes decreased in number (8.1%).

Victoria had the largest share of articulated trucks (9,257) with a GCM greater than 60 tonnes followed by Queensland with 8,775 trucks. Northern Territory had the highest percentage (78.1%) of articulated trucks with a GCM greater than 60 tonnes, compared to all articulated trucks for that state, followed by Queensland (55.5%). Queensland accounted for 59.6% of Australia's articulated truck fleet with a GCM of greater than 100 tonnes, with New South Wales the second highest at 15.1%.

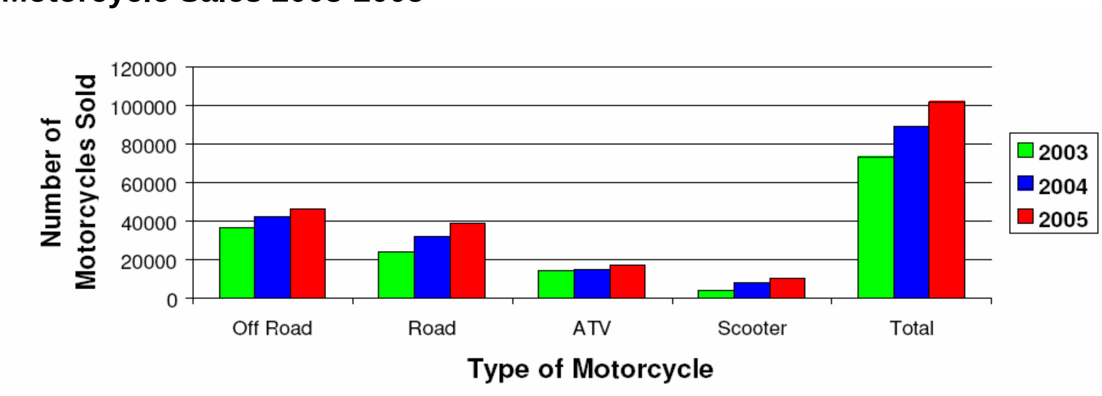
Motorcycles
Motorcycles accounted for 3.2% of all vehicles registered in Australia in 2006, up slightly from 2.9% in 2002.

Australian motorcycle registrations increased 24.8% in 2006 compared with 2002. All states and territories recorded increases in registrations. Queensland recorded the largest increase of 40.5% followed by Western Australia with 28.2%. The smallest increase was recorded in Victoria (11.4%) over this time.



Motor Cycle Fleet - State and Territory Registration
Source www.abs.gov.au

Motorcycle Sales 2003-2005



Motorcycle sales have been increasing steadily over the past 5 years.

- Sales for 2004 showed solid growth of 20% over 2003
- Total sales for 2004 were 89,000 units, the highest sales in 25 years
- The most popular selling models in 2003 & 2004 have been off-road motorcycles
- In addition to private sales there are significant sales to Government sectors such as; Australia Post, Police Forces, Department of Defence, Australian Antarctic Base, Surf Patrols and Rescue Services

Motorcycle Park & Licensed Riders
- Total motorcycles on register in Australia - 400,000 (ABS March 2004)
- In line with the popularity of off-road sales the industry estimates the existence of an additional 350,000 non-registered motorcycles. This suggests a national motorcycle park of about 750,000 motorcycles
- In comparison there are approximately 1.3m licensed riders

Franchised Dealers

- Retail motorcycle sales are handled by a national network of franchised dealers
- Many dealers are multi-franchised selling more than one brand of motorcycle.
- There are about 750 franchised dealers in the national dealer network

Financial Contribution to National Economy

- Based on current sales data the motorcycle industry contributes approximately $4.7billion per annum to the national economy

Motorcycle Styles, Categories and Models

- Road Bikes and Off-Road Bikes form the two major styles of motorcycles with many variations of engine capacity and model categories

Road Bikes	Off-Road Bikes
Scooter	Mini Bike
Super Sport	Enduro
Touring	Trail
Adventure Touring	Moto Cross
Cruiser	Farm
Naked	4 Wheelers (ATVs)

Scooters 10% Total Market

- In the 1980's and early 1990's very few scooters were sold in Australia
- Since 2000, scooter sales have boomed
- Current sales are experiencing a 80% growth
- There are now 18 brands of scooters imported into Australia
- Engine capacity ranges from 50cc to 250cc; some scooters are 500cc & 650cc

Road Bikes 24% Total Market

- Through the 1970's and 1980's motorcycling in Australia focused on commuting and road bike touring.
- In recent years the commuting market declined.
- The touring market increased and remains strong with great rides throughout Australia that encourage long distance touring and sports touring.
- In the 1990's sports bikes became the strongest selling category of road bikes; this trend continues today.
- Cruisers have developed a large niche market currently outselling large capacity touring motorcycles.

Off-Road Bikes 36% Total Market

- Off-road bikes are typically used for recreation riding in forests and parks
- Considerable rider activity is through organized ride days, trail tours e.g. Trail and Enduro bikes can be registered for riding on the road.
- During the past decade, off-road recreation riding has emerged as the major focus of motorcycle sales in Australia.
- Off-road bikes currently account for 36% of all motorcycle sales.
- Enduro is the highest selling off-road category.
- Of the Top 10 sales, two thirds are Off-road bikes and one third Road bikes.
- There is a huge following of dirt bike competition nationally (MotoX & SuperX)
- Engine capacities of Off-road bikes range from 125cc to 650cc.

Mini Bikes 14% Total Market

- Mini bikes are designed for young riders of 5 to 12 years.
- Engine capacities range from 50cc to 125cc and are mostly automatic.
- Mini bikes are usually ridden in supervised club activities at designated tracks.
- A percentage of mini bike use is on private property.
- A growing market since the late 1990's with current annual sales of about 12,000.

Agricultural Bikes (2 & 4 Wheel Agricultural Bikes) 16% Total Market

2 wheel agricultural bikes 125cc to 250cc:

- Current sales of 2,000 per annum.
- Are commonplace on most Australian farms.
- Have replaced the horse and other transport options for many farming operations.

4 wheel agricultural bikes - 250cc to 650cc:

- Current sales of 14,000 per annum.
- Have become the primary mobility and utility vehicles on Australian farms.
- Are an alternative to tractors for many "smaller/lightweight" farming operations.
- Are used extensively in all types of agriculture, horticulture, viticulture, dairy farming, sheep and cattle droving etc.

SECTOR PROFILES

1. Sales & Administration

The automotive industry has a large administration sector with occupations ranging from those in car dealerships, small repair and servicing businesses, and vehicle and component manufacturing enterprises.

Occupations in dealerships and automotive small businesses will range from reception to clerical to handling vehicle finance and insurance activities and the administration of vehicle stock movements.

With the continued growth in car manufacturing and sales, employment opportunities will continue to be available in this sector.

2. Bicycles

With an increasing emphasis on recreational exercise coupled with clean air environmental issues, the bicycle sector is currently undergoing significant growth supported by all levels of government.

The bicycle sector is comprised predominantly of retail bike shops carrying out sales of bikes and accessories, bicycle assembly and undertaking of mechanical repairs and servicing. There is significant marketing and promotion carried out by local shops in attracting business.

Occupations/qualifications in the sector are in the sales and mechanical areas. Advancements in technology in the manufacture of bicycles have necessitated a higher degree of expertise in their repair and servicing. There will continue to be demand for employees in this sector with specialist knowledge and skills and for those undertaking an Apprenticeship training pathway.

3. Motorcycles

The motorcycle industry is progressing forwards technologically at a very rapid rate. Motorcycles are able to achieve speeds significantly higher than ever before, are much lighter in weight, have increased horsepower and all at a lower purchase price each year. The technology delivered to the consumer on an “over the counter” motorcycle is astonishing. Suburb steering, brakes and performance are only just the start of what is now commonplace for most motorcycles. The on-board computerised management systems are extensive and demand that technicians continually upgrade their skills and knowledge to enable appropriate repairs and servicing.

Computers are now used on a daily basis for almost all diagnostic and maintenance procedures on all modern motorcycles. The majority of motorcycle manufacturers operate their engines and vehicle management through on-board computer based technology. As a result repair and service centres are required to have state of the art computer equipment to link with this technology. On-board ignition and fuel injection systems have meant significant advances in the range of diagnostic equipment required in a basic workshop.

4. Electrical Technology

The increasing advancements in technology in the development of the modern vehicle have had a significant effect on this sector of the industry. The sector is located mainly in dedicated automotive electrical or repair and servicing workshops, or in vehicle dealerships.

Occupations in this sector involve work on cars, trucks, caravans, trailers, earthmoving and agricultural equipment and boats. Duties include diagnosis, testing, repairing, servicing, installing and replacing components on a variety of vehicles and equipment. This includes working on a range of electrical wiring, lighting, electronically controlled vehicle systems, batteries, generators, alternators and starter motors. It is expected that there will continue to be a demand for skilled employees in this sector with on-going technical advancements in the automotive industry.

5. Marine

With more emphasis on leisure time, recreational boating has grown in popularity. Outside of the manufacturing environment, the sector is predominantly comprised of marine dealerships or combined dealership sales/workshop outlets. Occupations and qualifications in this sector are mainly in the sales and mechanical areas.

A marine mechanic services and repairs inboard and outboard boat engines and other related equipment. Other duties expected of persons employed in this sector will include repair and servicing of inboard and outboard marine transmissions, propeller drive and jet drive propulsion systems, boat trailers, installation and repair of marine electrical, electronic and ignition systems and inboard marine hull equipment and instruments.

The recent increase in sales encompasses the growing range of various boats, trailers, equipment and accessories available to the consumer. Whilst employment levels are not high in this sector, demand exists for employees with existing specialist knowledge and skills and for those undertaking formal Apprenticeship training.

6. Mechanical Technology (Light Vehicle, Heavy Vehicle and Specialist)

This sector represents a large portion of the automotive workforce across a significant number of occupations. Continuing advancements in technology have generated a greater degree of specialisation in mechanical occupations. Occupations are predominantly in repair and servicing activities conducted by specialist and general small businesses including franchise operations, in car, truck and farm machinery dealerships and in service stations.

The mechanical sector of the industry covers areas such as light and heavy vehicle, mobile plant, diesel, motor cycle, driveline/transmission, steering & suspension, fork-lift, engine reconditioning, gas vehicle, underbody, brakes, exhaust, tyres and air conditioning.

Mechanical occupations/qualifications can provide a pathway to more highly paid supervisory, management, design and engineering positions in the industry as well as an entry into Motorsport.

7. Motorsport

The Motorsport sector ranges from go-kart racing to high performance cars to Formula 1. Whilst some of the mechanical qualifications have relevance to this sector, specific qualifications were developed to suit occupations relevant to Motorsport and performance enhancement, particularly in relation to technical aspects.

Whilst the sector comprises significant numbers of non-paid people who volunteer their time and expertise, there are highly paid positions attached to the competitive professional racing teams. A pathway to higher level qualifications also exists in this sector to cater for the increased technical expertise required at this level.

The opportunities for entry into this sector are limited but are enhanced by attainment of at least Certificate III level qualifications and experience obtained at a lower level of competition.

8. Outdoor Power Equipment

Outdoor power equipment comprises lawn mowers, chain saws, brush cutters, generators, post hole diggers, pumps and other similar engines/motors. The product market extends across domestic, farm and construction activities.

The sector is comprised mainly of dedicated workshops or combined workshop/retail sales locations. With on-going advancements in technology, there has been a significant increase in the range of automated products in particular, now available in the marketplace.

Occupations/qualifications in the sector are predominantly in the mechanical and sales areas requiring specialist knowledge of products and their application. There will be additional opportunities for employment in the sector with the increasing number of sales outlets.

9. Vehicle Body

With on-going advancements in vehicle body development, this sector is continuing to undergo significant changes to the repair process. The sophisticated nature, particularly of new car bodies in the higher price brackets, has necessitated a greater level of expertise in carrying out repairs.

Occupations in this sector cover areas including paint and panel preparation, panel beating/body repairing, spray painting/vehicle painting, vehicle trimming, presentation and glazing.

There is significant demand for both entry-level and skilled workers in this sector. Pay level for qualified workers is high and opportunities for advancement are plentiful.

Automotive Industry Employment Status by Average Hours (Total) and Sex – February Quarter 2004
(Retail, Service and Repair)

	Employed Total ('000)			*Hours Worked (Total) ('000)*			*Average Hours (Total)*		
Status	**Males**	**Females**	**Total**	**Males**	**Females**	**Total**	**Males**	**Females**	**Total**
Employee	35.7	10.7	**46.5**	1516.1	320.2	**1836.3**	42.4	29.9	**39.5**
Employer	2.4	1.5	**3.9**	146.3	53.7	**199.9**	61	35.4	**51.1**
Own Account Worker	5.9	0.8	**6.7**	223.4	33.3	**256.7**	38	43.6	**38.6**
Total	**44**	**13**	**57**	**1885.8**	**407.2**	**2292.9**	**42.8**	**31.3**	**40.2**

Automotive Industry Employment Status by Average Hours (Total) and Sex – February Quarter 2007
(Retail, Service and Repair)

	Employed Total ('000)			*Hours Worked (Total) ('000)*			*Average Hours (Total)*		
Status	**Males**	**Females**	**Total**	**Males**	**Females**	**Total**	**Males**	**Females**	**Total**
Employee	41.4	12.7	**54.1**	1738.6	374.9	**2113.5**	42	29.6	**39.1**
Employer	1.9	0.8	**2.7**	106.7	13.2	**119.9**	56.8	16.7	**44.9**
Own Account Worker	5.1	1.1	**6.2**	201.9	19.5	**221.4**	39.6	17.9	**35.8**
Total	**48.4**	**13**	**62.9**	**2047.3**	**407.6**	**2454.8**	**42.3**	**28**	**39**

Source: Australian Bureau of Statistics, Labour Force Survey ST E06_Aug94

Note: Comparative employment totals between the years 2004-2007 shows an increase in the labour force of 7,600 employees.

ECONOMIC CONTRIBUTION

The automotive value chain makes a significant contribution to Queensland's economy. The Motor Trades Association of Queensland has estimated that the passenger motor vehicle trades alone have a combined turnover exceeding $16 billion and directly employ over 80,000 people.

The automotive industry sector is therefore one of the most important contributors to State Gross Product (SGP) and represents a significant proportion of the state's "stand alone" small businesses. The motor trades also comprise a substantial proportion of the Queensland skill base and productivity improvements.

Over the next decade the industry will undergo profound changes with the economy's capacity constraints imposing restructure and reform of most sectors and the predicted automotive technology revolution in response to energy and environmental dynamics requiring a recapitalisation and reorganisation of the automotive industry value chain.

TOTAL INCOME OF THE RETAIL MOTOR TRADES (Australia)

Motor Vehicle Wholesaling ($b)	Motor Vehicle Retailing ($b)	Motor Vehicle Servicing ($b)	Farm Machinery Wholesaling ($b)	Motor Vehicle Hiring ($b)	TOTAL ($b)
33,225.4	45,740.4	38,131.3	10,840.6	4,285.2	27,937.8

Source: ABS 2002-2003, Australian Industry (Experimental Estimates)

TRAINING PROFILE

2005-06 Actuals – Annual Hours Curriculum (All DET Regions x All Funding Groups)				
Industry	**State and Commonwealth Recurring (01) Funding**	**Other Commonwealth and State Funding (02) – includes Schools**	**TAFE Fee for Service (03) Funding**	**Total Reported**
Automotive	2,010,628	41,369	154,400	2,206,397
All Industry Sectors	44,403,049	22,843,968	7,358,359	74,605,376
Automotive as a % of All Industry Sectors	**4.5%**	**0.18%**	**2.09%**	**2.95%**

Source: DETA Industry Development Division - June 2007

2005-06 Actuals – Annual Hours Curriculum – Fund Source (All DET Regions x All Funding Groups)						
Industry	**Strategic Purchasing Program (SPP)**	**User Choice**	**Direct Grant (TAFE)**	**Direct Grant (Agricultural Colleges)**	**Other**	**State and Commonwealth Recurring (01) Funding**
Automotive	8,027	1,321,532	676,950	1,047	3,072	2,010,628
All Industry Sectors	2,139,613	13,411,856	27,609,799	341,388	900,393	44,403,049
Automotive as a % of All Industry Sectors	**0.37%**	**9.85%**	**2.45%**	**0.3%**	**0.34%**	**4.52%**

Source: DETA Industry Development Division – June 2007

Regional Analysis of the Labour Force vs. VET Funding Share				
Region / Statistical Division	**Employed Persons, Automotive (ABS, LFS Feb 2007)**	**Share of Automotive Employment**	**Share of Funded Automotive VET (2005-06 AHCs DETA)**	**Rationale / Conclusion**
Brisbane Statistical Region			35.1%	
South & East Moreton (i.e. Gold Coast)			7.4%	
North & W (i.e. Sunsh Ipswich W				
Wide Bay				
Darling Do South Wes				
Mackay, Fitzroy & Central West			20.4%	
Northern & North West			6.1%	
Far North			2.7%	
Total (Queensland)			**97.4%**	
Regions not stated or other States			2.6%	

Note: ***Australian Bureau of Statistics unable to provide Labour Force Survey (LFS) data for the automotive industry until November 2007 which will be based on the 2006 Census data. The only LFS data currently available is based on 2001 Census data.***

Automotive (AUR) Statistics for persons employed as an apprentice or trainee since January 2006. Data current as at 30 May 2007.
Source: DETA Industry Development Division – June 2007

Qualification	In Training	SATs	Cancelled Last 6 Months	Commencements 2006	**Completions 2006**
AUR20305 Certificate II Bicycles	7	5	0	3	0
AUR20405 Certificate II Automotive Electrical Technology	9	3	1	14	0
AUR20505 Certificate II Automotive Vehicle Servicing	57	47	10	69	6
AUR20605 Certificate II Marine	4	2	0	6	0
AUR20699 Certificate II Automotive (Electrical Accessory Fitting)	2	0	0	0	9
AUR20705 Certificate II Automotive Mechanical	103	76	24	113	26
AUR20705A Certificate II Automotive Mechanical (Air Conditioning)	9	3	2	11	0
AUR20705B Certificate II Automotive Mechanical (Cylinder Head Reconditioning)	4	2	1	8	3
AUR20705C Certificate II Automotive Mechanical (Tyre Fitting Light)	63	18	13	83	5
AUR20705D Certificate II Automotive Mechanical (Underbody)	27	8	9	35	4
AUR20799 Certificate II Automotive (Mechanical Air Conditioning)	0	0	0	0	8
AUR20899 Certificate II Automotive (Mechanical Cylinder Head Reconditioning)	0	0	0	0	1
AUR20805 Certificate II Outdoor Power Equipment	2	1	0	1	0
AUR20905 Certificate II Automotive Vehicle Body	6	1	2	9	1
AUR20905A Certificate II Automotive Vehicle Body (Paint Preparation)	25	14	6	28	4
AUR20905B Certificate II Automotive Vehicle Body (Panel Preparation)	22	12	4	30	2
AUR20905C Certificate II Automotive Vehicle Body (Vehicle Glazing)	10	6	3	14	0
AUR20905D Certificate II Automotive Vehicle Body (Vehicle Presentation)	22	9	3	18	2
AUR20905E Certificate II Automotive Vehicle Body (Window Tinting)	9	0	0	8	0
AUR20805 Certificate II Outdoor Power Equipment	0	0	0		0
AUR21099 Certificate II Automotive (Mechanical Exhaust Fitting and Repair)	0	0	0	0	6
AUR21105 Certificate II Automotive Sales	0	0	0	1	1
AUR21499 Certificate II Automotive (Mechanical Tyre Fitting and Repair Heavy)	0	0	0	1	9
AUR21599 Certificate II Automotive (Mechanical Tyre Fitting and Repair Light)	0	0	0	2	23
AUR21699 Certificate II Automotive (Mechanical Underbody)	0	0	0	0	17
AUR21799 Certificate II Automotive (Mechanical Vehicle Servicing)	6	6	3	0	70
AUR22099 Certificate II Automotive (Sales-Replacement Parts and Accessories)	0	0	0	0	1

Qualification	In Training	SATs	Cancelled Last 6 Months	Commencements 2006	Completions 2006
AUR22299 Certificate II Automotive (Sales-Vehicle)	0	0	0	0	1
AUR22499 Certificate II Automotive (Vehicle Body Accessory Fitting Mechanic)	1	1	0	0	5
AUR22599 Certificate II Automotive (Vehicle Body Detailing)	0	0	0	1	10
AUR22699 Certificate II Automotive (Vehicle Body Dismantling)	1	1	0	1	2
AUR22799 Certificate II Automotive (Vehicle Body Glazing)	0	0	0	1	10
AUR22899 Certificate II Automotive (Vehicle Body Paint and Panel Preparation)	1	1	1	1	26
AUR22999 Certificate II Automotive (Vehicle Body Window Tinting)	0	0	0	1	4
AUR23099 Certificate II Bicycle (Services)	2	2	1	3	1
AUR23299 Certificate II Marine (Services)	0	0	0	0	1
AUR23399 Certificate II Outdoor Power Equipment (Services)	0	0	0	1	5
AUR30199 Certificate III Automotive (Electrical)	54	0	2	0	78
AUR30299 Certificate III Automotive (Mechanical Automatic Transmission)	0	0	0		5
AUR30205 Certificate III Bicycles	18	2	1	10	0
AUR30299 Certificate III Automotive (Mechanical Automatic Transmission)	1	0	1	0	0
AUR30305 Certificate III Automotive Electrical Technology	344	19	24	150	0
AUR30399 Certificate III Automotive (Mechanical Brakes)	3	0	0	0	0
AUR30405 Certificate III Automotive Mechanical Technology	71	4	4	30	0
AUR30405B Certificate III Automotive Mechanical Technology (Heavy Vehicle Mobile Equipment)	123	16	10	85	0
AUR30405C Certificate III Automotive Mechanical Technology (Heavy Vehicle Road Transport)	435	34	39	198	2
AUR30405D Certificate III Automotive Mechanical Technology (Light Vehicle)	1,894	117	219	953	7
AUR30405E Certificate III Automotive Mechanical Technology (Motorcycle)	139	15	16	90	1
AUR30499 Certificate III Automotive (Mechanical Diesel Fitter)	19	0	1	0	13
AUR30505 Certificate III Marine	91	9	8	47	0
AUR30599 Certificate III Automotive (Mechanical Diesel Fuel Specialist)	4	0	0	0	5
AUR30605 Certificate III Automotive Specialist	30	0	3	26	0
AUR30605A Certificate III Automotive Specialist (Brakes)	3	0	0	2	0
AUR30605B Certificate III Automotive Specialist (Diesel Fitting)	66	8	3	30	0
AUR30605C Certificate III Automotive Specialist (Diesel Fuel)	25	5	3	12	0
AUR30605D Certificate III Automotive Specialist (Engine Reconditioning)	70	0	6	31	0
AUR30605E Certificate III Automotive Specialist (Forklift Mechanic)	4	0	0	3	0

Qualification	In Training	SATs	Cancelled Last 6 Months	Commencements 2006	Completions 2006
AUR30605F Certificate III Automotive Specialist (Transmission)	3	1	0	1	0
AUR30705 Certificate III Outdoor Power Equipment	78	2	6	42	0
AUR30799 Certificate III Automotive (Mechanical Engine Reconditioning)	14	0	2	0	27
AUR30805 Certificate III Automotive Vehicle Body	6	0	0	4	1
AUR30805A Certificate III Automotive Vehicle Body (Panel Beating)	274	17	40	166	2
AUR30805B Certificate III Automotive Vehicle Body (Vehicle Painting)	261	11	41	186	4
AUR30805C Certificate III Automotive Vehicle Body (Vehicle Trimming)	25	2	3	14	0
AUR30899 Certificate III Automotive (Mechanical Heavy Vehicle Road Transport)	133	3	7	2	118
AUR30999 Certificate III Automotive (Mechanical Heavy Vehicle Mobile Plant/Earth Moving Equipment)	106	3	9	1	47
AUR31005 Certificate III Automotive Sales	121	0	21	108	3
AUR31005A Certificate III Automotive Sales (Parts Interpreting)	101	2	6	73	0
AUR31099 Certificate III Automotive (Mechanical Light Vehicle)	851	3	61	37	494
AUR31199 Certificate III Automotive (Mechanical Motorcycle)	58	0	4	0	31
AUR31205 Certificate III Automotive Retail, Service and Repair	32	0	2	28	0
AUR31399 Certificate III Automotive (Sales-Parts Interpreting)	55	0	5	3	27
AUR31499 Certificate III Automotive (Sales-Vehicle)	45	0	0	19	116
AUR31599 Certificate III Automotive (Vehicle Body Building)	1	0	0	0	0
AUR31699 Certificate III Automotive (Vehicle Body Panel Beating)	149	2	15	7	47
AUR31799 Certificate III Automotive (Vehicle Body Trimming)	21	0	0	1	12
AUR31899 Certificate III Automotive (Vehicle Body Vehicle Painting)	134	2	8	6	74
AUR31999 Certificate III Bicycle (Mechanics)	3	0	2	2	1
AUR32199 Certificate III Marine (Installation)	0	0	1	0	0
AUR32299 Certificate III Marine (Mechanics)	47	0	5	6	23
AUR32399 Certificate III Marine (Sales)	0	0	3	0	0
AUR32499 Certificate III Outdoor Power Equipment (Mechanics)	17	0	0	3	13
AUR35101 Certificate III Automotive Aftermarket (Retail)	30	0	2	20	1
Total	**6,351**	**495**	**666**	**2,859**	**1,415**

TRAINING DEMAND DRIVERS & SUPPLY BARRIERS

DEMAND DRIVERS

Skills Gaps
A skills gap is a significant gap between an organization's skill needs and the current capabilities of its workforce. It is the point at which an organization can no longer grow and/or remain competitive in its industry because its employees do not have the right skills to help drive business results and support the organization's strategies and goals. The primary cause of skills gaps can be identified by three major factors:

1. Jobs are changing

Changes in the nature of business are leading to changes in the skills required of employees. Global competition, technology, and other forces place a premium on speed, innovation, and the ability to adapt rapidly to change. Even if employees are equipped for today's jobs, they need to be ready to learn, re-learn, and in some cases, unlearn to respond to workplace modifications, and other realities.

Today's employees in the automotive industry also need a higher level of technical and professional skills than their counterparts in decades past. In 1950, 80 percent of all jobs in Australia were classified as unskilled. In a complete reversal, an even greater proportion of jobs – 85 percent – are classified as "skilled" today, meaning they require some further education beyond secondary schooling. The increased demand for higher-level skills in Australia and other developed countries is related to broader shifts in the economy, including declines in low-skill manufacturing, the growth of the service sector, and the advent of new technologies.

2. Educational attainment is lagging the need for skills

At the same time that the Australia and other nations need more workers with higher-level skills, advances in education have been trailing off in recent years. While successive generations have required more schooling, educational attainment has plateaued among youth during the last several years.

3. Workforce growth is slowing

Low growth in all segments of the workforce is fast becoming a fact of life in our State and nation and other developed countries. According to the Hudson Institute, the world's "advanced regions" – including the U.S., Western Europe, and other developed nations of the Pacific Rim – will see a smaller number of new workers entering the labour force in the current decade than were added in the 1990s.

Western Europe has experienced an absolute decline in workers from 2000 which is expected to continue until 2010. In Australia, the looming retirement of the "baby boomer" generation of workers has captured attention. Many organisations feel the departure of these workers will present potential "knowledge and skill vulnerabilities."

The biggest gaps reported by the automotive industry illustrate deficiencies in both "hard" and "soft" skills among current and prospective workers. Shortages are reported in four key areas:

a. **Employability skills** – literacy, numeracy, customer service, communications and basic business acumen

b. **Technical and professional skills** – computer / technology skills, plus skills for specialized industries (e.g., automotive or construction)

c. **Management and leadership** – skills covering areas such as supervision, team-building, goal-setting, planning, motivation, decision making, and ethical judgment

d. **Emotional intelligence** – skills such as self awareness, self-discipline, persistence, and empathy

Knowledge and skills identified as necessary for their current workforce by employers who completed the “Industry Skills Survey 2007” are listed below in priority order.

- Workplace Health & Safety
- Electronically Controlled Systems
- Vehicle Safety Systems
- Engine Management Systems
- Emissions Control
- GPS Navigation Systems

Skilling Demand

The demand for skilled labour within the automotive industry is created through a number of incidences. One of the most significant factors creating this demand is the exponential growth in the number of registered passenger motor vehicles, motor cycles, articulated trucks, and campervans from 2002 through to 2006. The average percentage change for this period has been 12 percent. The increased sales in construction and mining equipment in parallel with the resource sector boom and substantial infrastructure development is unrivalled. One major civil construction and mining equipment supplier has recorded a 59.5 percent growth in sales over the past 2 years.

The projected service and repair schedule required for all of these vehicles and equipment will translate into an increased demand for skilled labour. Many employers have already recognised the impending crisis and are seeking to recruit skilled labour from overseas.

The other factor which is also contributing to a demand for skills development for existing workers is the advancement in the technology utilised in most modern vehicles and equipment. The innovation intensity of product development has resulted in the need for ongoing skills development of qualified tradespersons and the continuous review of apprentice training programs. This is to ensure the provision of information to increase knowledge and to aid in the development of necessary skills in areas such as engine management systems, emissions filters and controls, Canbus, and alternate fuels.

Industry Environment (i.e. National Road Freight Task, Resource Sector Boom)

a. Heavy Commercial Vehicles

Queensland's freight needs are extensively serviced by road transport. It provides a significant and critical contribution to the state economy. The decentralised demographics of Queensland dictate a high reliance on the road transport industry by all members of the community.

Research by the Commonwealth Bureau of Transport and Regional Economics, and the heavy vehicle industry clearly indicates a doubling of the road freight task (tonnes per kilometres travelled) by the year 2020.

A report compiled by the CVIAQ has analysed the projected road freight task and constructed a direct relationship between the vehicle numbers and the requirement for skilled trade's persons to manufacture, repair and maintain those vehicles.

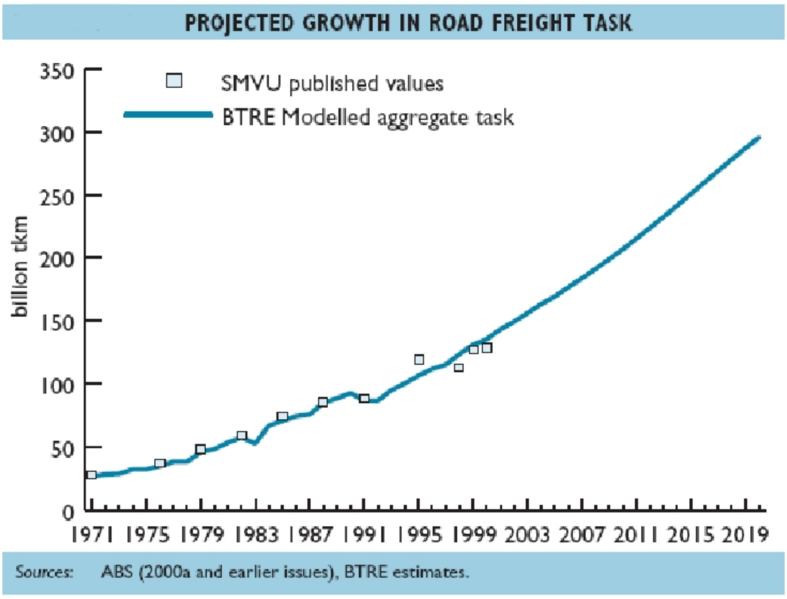
The statistics provided below were collated by CVIAQ after examining the present skills shortage and consulting with members in the heavy vehicle manufacturing, retail, service and repair sectors.

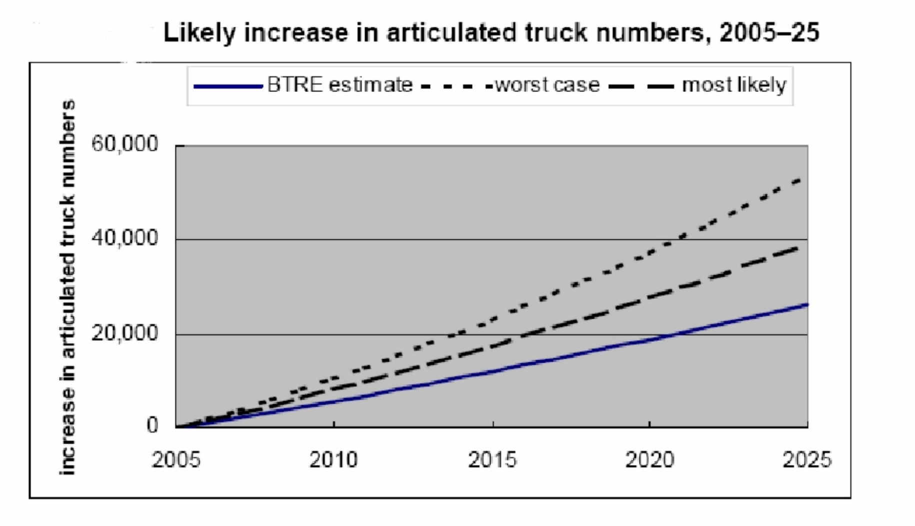
This consultation shows that the present situation is extremely serious with industry indicating that a 15% shortfall in numbers in the skilled trades exists already.
The following Certificate III Qualifications represent the most frequently used courses by the industry. The numbers represent the apprentices currently in training in Queensland.

Trade Calling	Numbers
Automotive Mechanic (Heavy Vehicle Road Transport)	568
Automotive Mechanic (Heavy Vehicle Mobile Equipment)	229
Automotive Specialist (Diesel Fitting)	66
Automotive Specialist (Diesel Fuel)	29
Bus Truck & Trailer Manufacture (AUM)	151
Engineering (Diesel Fitting) MEM	1189
Total	**2232**

Industry Growth Projections
The following statistics were provided by the Bureau of Transport and Regional Economics and presented at CVIAQ's seminar "Trucks to Meet the Future Road Freight Task" in 2006.

The statistics have been acknowledged by the Australian Government and referred to by the National Transport Commission in its freight task projections paper "Twice the Task" released in February this year.





Source: "Trucks to meet the Future Road Freight Task" 2004

Industry Growth Projection:
The heavy vehicle fleet in Queensland under these conditions will expand as follows:

Year	Worst case estimates	Most likely estimates
2004 - 2007	5.5%	4.2%
2004 - 2010	15.3%	11.6%
2004- 2015	33.4%	25.2%
2004 - 2020	54.3%	40.3%

Training Projections:
Allowing for the worst case estimate industry will require the following heavy commercial vehicle apprentice numbers by 2020:

Trade Calling	Numbers
Automotive Mechanic (Heavy Vehicle Road Transport)	796
Automotive Mechanic (Heavy Vehicle Mobile Equipment)	313
Automotive specialist (Diesel Fitting)	5[1]
Automotive Specialist (Diesel Fuel)	35
Bus Truck and Trailer Manufacture	233
Engineering (Diesel Fitting)	1835
Total	**3217**

Given that the industry is currently experiencing a grave skills shortage and attempting to utilise overseas labour sources, these estimates may still be short of the real situation.

The industry requires planning for infrastructure able to train the above numbers of students with a 15% allowance for further growth (shown last column). These numbers reflect state-wide conditions and need to be considered against the planned delivery of the qualifications in the various regional TAFE Institutes and private registered training organisations.

Allowing for changing demands and specific industry conditions this will result in the following apprentice requirements by 2020:

Trade Calling	Numbers
Automotive Mechanic (Heavy Vehicle Road Transport)	915
Automotive Mechanic (Heavy Vehicle Mobile Equipment)	810
Automotive Specialist (Diesel Fitting)	50
Automotive Specialist (Diesel Fuel)	40
Bus Truck and Trailer Manufacture	500
Engineering (Diesel Fitting)	1616
Total	**3931**

[1] Discussions with industry indicate a drift from the MEM 30298 Engineering (Diesel Fitting) qualification to AUR 30605 Automotive Specialist (Diesel Fitting) due to its recent review meeting the needs of industry. This will substantially inflate numbers in the Automotive Diesel Fitter qualification.

b. Queensland Government 2006-07 (Infrastructure Projects)

Key Points

- Capital outlays in 2006-07 are estimated to be $10.136 billion, an increase of 23% or $1.914 billion on estimated actual 2005-06 capital outlays.
- Capital outlays will support some 73,700 full-time jobs in Queensland.
- Implementation of the Queensland Government's *South East Queensland Infrastructure Plan and Program* has commenced, with investment of over $2 billion in 2006-07 for water, transport (including rail), energy, education and training, and health.
- Capital outlays in 2006-07 reflect the Queensland Government's ongoing commitment to regional and rural Queensland, with almost 60% of capital expenditure occurring outside the Brisbane Statistical Division.

- Investment includes $359 million over four years under the Rural and Regional Roads Funding initiative, commencement of construction of the $543 million four-lane Tugun bypass and the $42 million Bundaberg Ring Road.
- In 2006-07 there will be capital outlays of $4.044 billion for transport and main roads, $2.856 billion for energy, $641.2 million for education and training and $594 million for health.
- The Government will invest $606.4 million in water infrastructure, including $325 million in new funding over five years for water and sewerage infrastructure, effluent re-use and demand management and water loss reduction in local governments, $129.4 million for the completion of the Burdekin-Moranbah pipeline, and $100 million to continue the Western Corridor Recycled Water Scheme.
- The capital outlays of Government-owned corporations constitute approximately 43% of total outlays in 2006-07, including a record $1.71 billion in expenditure by ENERGEX and Ergon Energy. Major investment in rail and ports infrastructure is also planned to meet demand for Queensland's exports.

Overview
This Capital Statement presents an overview of proposed capital outlays by the Queensland Government in 2006-07, as well as a summary of the State Government's approach to infrastructure provision. Capital outlays in 2006-07 are estimated to be $10.136 billion, net of a capital contingency reserve of $800 million.

This represents an increase of 23% on estimated actual outlays in 2005-06, and provides for the continuation of the *South East Queensland Infrastructure Plan and Program* (SEQIPP), the $1.4 billion Smart State Building Fund, as well as a number of new capital investments.

The increased capital outlays in 2006-07 demonstrate the Government's commitment to broaden Queensland's infrastructure base to meet the social and economic needs of the State. The capital outlays of Queensland's Government-owned corporations (GOCs) will constitute 43% of total outlays in 2006-07, reflecting major investments in electricity, rail and ports infrastructure.

Expenditure in 2006-07 is highest in the Brisbane Statistical Division – the most populated and one of the fastest growing areas of the State – planned at $4,376 billion. However, consistent with the Government's commitment to building Queensland's regions, almost 60% of capital expenditure is expected to occur outside the Brisbane Statistical Division.

Employment Generation
The 2006-07 capital infrastructure program will have a significant effect on employment, supporting some 73,700 full time jobs, either directly or indirectly. Estimated employment generation from budgeted capital expenditure in 2006-07 exceeds the forecast contained in the 2005-06 Capital Statement.

This increased employment will be spread across a number of areas including education, energy, correctional facilities, ports and transport infrastructure.

c. Heavy Equipment (Current & Future)
Queensland is the world's largest exporter of seaborne coal. Coking coal used in steelmaking represents 60% of Queensland's coal exports, with thermal coal used for electricity production the other significant product category. By value, coal is the state's most important export commodity. Coal mining is a major provider of wealth in Queensland through royalties and other charges paid to the State government.

Export coal is a mainstay of regional communities, rail and port operations and is a driving force behind Queensland's status as the most decentralised state in Australia. Mining is concentrated in central Queensland in the Bowen Basin and further south in the Surat Basin. The state's high quality, low sulphur coals are attractive to overseas buyer's conscious of achieving maximum energy efficiency. Japan is the largest market for Queensland coals, which are used in steelmaking and electricity generation. Increasing demand from other Asian countries has boosted exports over the past 5 years with a large number of new coal mines being opened and several others under construction or study.

Queensland coal is currently exported to 31 countries, with forecasts pointing to total demand of up to 235 million tonnes by the year 2010.

The impact of the resource sector boom and infrastructure program of the Queensland Government on the sales, repair and servicing of heavy equipment is extensive and of significant magnitude. The growth trends currently being experienced by this sector of the automotive industry are unprecedented.
Whilst a great majority of the skills required to work in this industry are currently acquired through qualifications contained within the Metal and Engineering Industry Training Package there is comparative growth in equivalent qualifications contained in the Automotive Training Package. This is specifically the case for Automotive Electricians, Mobile Plant & Equipment Fitters and Diesel Specialists.

The current and forecast trends for parts sales, engine repairs, servicing, and general equipment sales in Queensland as outlined below demonstrates the probable impact on an already stressed training market to provide the numbers of skilled persons in this sector equivalent to the trend data.

<u>Trends and Forecast for 2004 to 2010</u>

- Australian Parts Sales – increased growth by 40%
- Engine Repairs and Servicing – increased growth by 50%
- New Equipment Sales – (Mining increased growth by 67%) and (Construction and Farming increased growth by 56%)

Source: Hastings Deering “Parts & Service Operations – Future” Report 2007

d. Marine (Mechanical Only)

Described by the Queensland State Government as ‘booming’, the marine industry throughout South East Queensland, particularly along the famed tourist strip, the Gold Coast, is encountering significant challenges with skills shortages. It is not difficult to sell boats, but difficult to manufacture, repair and service them. Simply put, the industry lacks people, more specifically qualified people, able or willing to work in the boating industry.

The Gold Coast Marine Precinct stands unchallenged as the marine industry’s showpiece. It is situated at Coomera, on the northern end of the Gold Coast, offering easy access to the Coomera and Nerang Rivers, several major marina developments, including Gold Coast City Marina and Sanctuary Cove, and the nearby M1 expressway.

Since its establishment seven years ago, the precinct has created nearly 4000 jobs, a figure the Gold Coast City Council says could conservatively rise by 1000 or more in an instant.

The precinct is home to many of the industry’s best-known names; The Riviera Group, Mercury Marine, Maritimo, Quintrex, Azzura Marine, Blackline Shipping, MTU Detroit, International Paints, Leigh Smith Cruiser Sales, Lightwave Catamarans and King Catamarans to name but a few.

More than $200 million has been invested in precinct infrastructure, while more than $300 million is being spent by private enterprise on further expansion.

The Queensland Government estimates that the export income is approximately $300 million per annum from the precinct. It is generally agreed that each of these highly successful operations would be even more dominant in their respective fields if there was an employment pool of qualified tradespersons to recruit.

The Gold Coast Marine Industry Association, have stated on more than one occasion that the shortage of staff is 'across the board' covering a wide multitude of skills. Occupations include shipwrights and boat builders, fibreglass gun operators, stainless steel welders, upholsters, marine electricians, diesel engineers, and marine mechanics. Once again the buoyant Queensland mining industry is a major factor in contributing to the marine industry’s skilled labour problem. Electricians, welders and diesel engineers in particular are attracted by higher earning potential within the mining industry. This problem is not just isolated to South East Queensland, it’s worldwide.

The marine industry in Australia claims to have lost workers to places like Fort Lauderdale in the US to New Zealand, where there’s a very buoyant boat manufacturing, repair and service industry, and yards throughout South East Asia. The recent focus on the marine industry by the Queensland Government has seen the construction of the Gold Coast Institute of TAFE (Technical and Further Education) Marine Precinct Training Centre to be opened by the end of 2007, together with the establishment of a Skills Formation Strategy.

The recreational boating industry has continued to grow at an alarming rate over the past ten years. This growth translates to an unprecedented 67% increase in recreational craft ownership. The number of boats currently registered in Queensland is approximately 221,000. The Boating Industry Association of Queensland forecast a continued growth of at least 6% per annum within the industry as people from interstate move to South East Queensland to retire and enjoy the coastal lifestyle often enhanced by leisure boating. This continued growth in boat manufacture and sales translates to an increased need for highly skilled tradespersons to repair and service the boat motors and associated mechanical equipment.

e. Bicycles

The Bicycle industry in general is experiencing significant growth which in itself has enhanced the need for further bicycle mechanics. Large numbers of people currently working in these technical roles are unqualified, as government regulations do not prescribe a mandatory qualification or license to repair and service bikes. Until recently anybody with a passion for the industry and some level of mechanical aptitude could adequately work in the industry as a bicycle mechanic. This is beginning to generate a dangerous precedent of mechanics who are self trained with often under developed trade knowledge and skills. The growth of the industry and competency requirements of a bicycle mechanic means that the traditional avenues used to acquire skilled labour have been over extended, and as a result employers are tending to employ backpackers who are often looking for casual work. The poaching of skilled labour within the industry is common practice as quality qualified tradespeople are a very rare commodity.

The industry is in a constant state of change, with an increase in internet sales, the importation of various bikes and components at extremely low prices compared to quality, and people generally seeking a healthier lifestyle achieved through the popular recreational activity of cycling. This increased activity is causing an equal increase in the requirement for repairs and service to their bikes.

There are two major growth areas in the bicycle industry that being road cycling and mountain biking. Both areas are experiencing substantial technological growth and there is currently nothing in place to address this at a trade level. The mountain bike design and construction is advancing in the areas of suspension and hydraulic braking systems. In the near future pneumatic and hydraulic gear changers will be a standard feature on most bicycles. These changes will heavily impact on the safety and general operation of a bicycle. The technical skills necessary to repair and service such components will need to rapidly change as a result

A shortage of qualified tradespersons in the industry is due to limited options for training and poor infrastructure to support the off-the-job learning processes. In addition, the low wage rates payable to apprentices have been a traditional deterrent and have generally encouraged people to move from job-to-job to find the best employment conditions.

The bicycle industry desperately needs a structured training system however employers have been reluctant to engage in the training system due to the limited training options e.g. block release training. The capacity and quality of off-the-job training is well below the standard that industry requires if it is to remain dynamic and sustainable. A pre-employment course or an increased number of enrolments in school based apprenticeships that included training in sales, bike building and basic repairs training would equip an individual with useful skills before commencing full-time employment. For the industry this would be of considerable value.

Currently the bicycle mechanic apprenticeship in Queensland has a nominal term of four years, however in Western Australia it has been reduced to a three year term. There is general industry support to reduce the term to three years in Queensland also. This however is dependant upon a concerted approach by training providers to provide work based delivery of training and assessment. Because the majority of bicycle businesses are retail outlets, having staff members away from the workplace undertaking block training for extended periods is in most cases a huge deterrent to the employment of an apprentice. Work based training allows for "real" training in the actual work environment where the apprentices are exposed to the latest product technology and equipment.

Regulation & Licensing (i.e. Approved Examiner, Automotive Air-conditioning)

A new national refrigeration and air conditioning licensing system came into force on 1 July 2005. This new system affected any person who buys, sells, stores or handles ozone depleting or synthetic greenhouse gas refrigerant – including those in the maritime sector. The new system applies a single set of licensing requirements right across Australia and replaces differing arrangements in each state and territory. It seeks to minimise avoidable emissions to the atmosphere of ozone depleting substances and synthetic greenhouse gases used as refrigerants.

People who handle these substances, in bulk or in equipment, are required to be licensed under the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995.

Companies or people who acquire, possess or dispose of these substances are required to hold a refrigerant trading authorisation. In addition refrigerant cannot be purchased without a valid authorisation.

With the onset of this new regulation and system in 2005 the designated industry authority Australian Refrigeration Council (ARC) Limited issued an *Experienced Persons Licence (EPL)* which was a temporary licence given to a technician in the refrigeration and Air-Conditioning industry, whose existing state or territory licence was about to expire.

This allowed technicians to continue to work, while their industry experience was assessed or a course was undertaken to obtain a refrigerant handling Licence. Currently, more than 12,500 technicians hold an EPL, a significant reduction from a period in 2005, when over 16,000 technicians held licences across Australia. A review of industry data by the ARC show the decline in EPLs is not due to technicians leaving the industry, but a direct result of industry members upgrading to a Refrigerant Handling Licence. However, a critical issue now facing the industry is not the number of individuals upgrading their licence status, but the numbers of EPL holders who have let their licences expire. To address this matter the ARC has issued notices to these individuals asking them to contact the ARC. This action will prompt a number of technicians to seek training and assessment services or RPL assessment to gain the necessary qualifications to make applications for a RHL. Failure to do this will expose both the individual technician and workplace to the imposition of a fine.

Technicians working on automotive air conditioning will need to meet the core competencies set out in the Automotive Training Package AUR 20799 or AUR 20705. A conditional licence may be granted to applicants who have not attained competency recognition for the installation and overhaul electives (AUR T322666A & AUR T422645A). This conditional licence will allow technicians to work on automotive air conditioning systems, but exclude them from undertaking installation or overhaul of these systems.

Currently, all of the training and assessment services required to attain a qualification to support the licensing criteria has been conducted on a fee for service basis.
It is probable that enrolments in the Certificate II in Automotive Technology (Air Conditioning) traineeship will increase over the next eighteen months to two years.

Legislation

Other legislation and regulation which impacts on the retail, service and repair sectors of the industry include:

- Fair Trading Act
- Trade Practices Act
- Property Agents and Motor Dealers Act
- Stamp Duties Act
- Transport Operations (Road Use Management Act – Vehicle Registrations Regulations 1999)
- Motor Vehicle Securities Act
- Motor Vehicle Safety Act
- National Code of Practice for Light Vehicle Construction and Modification (NCOP)
- National Code of Practice (Heavy Vehicle Modifications)
- Queensland Department of Transport regulated activities within the automotive industry include:
    - Approved persons (vehicle modifications)
    - Approved Inspection Stations (issue of Safety / Roadworthy Certificates)
    - Approved Examiners
- International Emissions Standards (EURO 4 & 5) equivalent to Australian Design Rule (ADR) 80/01 & ADR 80/03

SUPPLY BARRIERS

Availability and Quality of Candidates

The emergence of skill shortages is the result of a complex set of factors and circumstances including, sustained economic growth, the globalisation of the economy, an ageing workforce, a decline in fertility rates, a shift in labour market patterns, poor image of the traditional trades, and the low uptake of traditional trades by people historically not interested in the trades. The low wages traditionally paid to apprentices is reported by many as being a deterrent for students / job seekers considering a trade.

Traditionally, a business cycle goes through a period of growth of approximately eight years with a subsequent contraction period followed by another wave of growth. However, since the early 1990s, Australia's economy has experienced continued growth. Consequently this growth has built-up pressure on the demand for skilled labour. Whilst Australia has been experiencing a continued period of growth the globalisation of economies has also occurred resulting in global competition for professional, para-professional and skilled trade employees. Some one million Australians now work overseas and represent a significant net loss of skilled and professional workers for the Australian economy (Australian Bureau of Statistics, 1999).

In addition, during the late 1960s more than 250,000 young people were leaving school to join the workforce or undertake further education annually. It is expected that this will decline to 150,000 by 2010 (Australian Bureau of Statistics, 1999). Since the 1960s the baby boom fertility rates have also declined from average fertility rates of 3.5 babies per woman (1961) to less than 1.9 in 1985 and 1.7 in 2004 (Australian Bureau of Statistics, 1999). Increasingly recruitment firms such as Hudson's are arguing that over the next 10 years, 50% of all new employees will come from people aged over 50. This 'baby bust' (Naisbett, 1990) has resulted in a large cohort of the workforce comprising of older workers and a significant decline in the number of young people entering the workforce. The contemporary trends embraced by government agencies and large businesses to maximise short-term returns with a focus on downsizing, outsourcing and corporatisation, has led to a significant decline in the investment in training by those agencies and businesses.
Consequently, there has been a dramatic reduction in the number of apprenticeships being sponsored by these organisations.

As Toner (2003) proposes, the public sector accounts for around one third of the decline in apprentice intake over the past 10 years. Similarly the rapid growth of labour hire firms in response to these measures has resulted in Australia having the highest percentage of casual workers in the industrialised world (National Centre for Vocational Education Research (NCVER), 2002). As the NCVER (2002) noted 'Australia has one of the largest secondary labour markets in the developed world, some 12% of the workforce is employed part-time and 27% on a casual basis'. It has long been acknowledged that the traditional Apprenticeship has been successful in increasing participation in structured training, and in opening up new and more flexible opportunities across occupations and industries that have not had a history of structured training.

However, an evaluation of Apprenticeships ‘Skills at Work’ Report (Department of Education, Science and Training, 2004) further examination could be undertaken on how growth in Apprenticeships has related to the demand for skills in the economy. While there has been a recent increase in the uptake of trades for older workers, employers have tended to focus on young people, particularly school leavers as their primary source of potential apprentices/trainees. With a declining number of young people and the complexity of career pathways available, insufficient attention has been paid to attracting women, people with a disability, indigenous and older workers into the trades and as the Commonwealth National Industry Skills Initiative Working Group reflected (Department of Education, Science and Training, 2002) much attention needs to be given to the upgrading and renewal of the skills of existing workers. Further, the Australian economy has a high percentage (50%) of untrained and unqualified workers (TAFE Directors Australia, 2004). The relative low level of training investment also reduces the pool of potentially qualified tradespeople.

Media representations of professionals along with community and parent expectations have focused on careers best achieved via a university qualification. This reflects the considerable effort and focus that has been placed on the 30% of students who exit year 12 and go onto university, rather than the 70% of students who do not (Department of Education, Science and Training, 2004). There has been an implied assumption that trades are “dirty”, “second best” and for “losers”. These misconceptions or ‘traditional’ views further compound the skill shortages in the trade areas. Recent media campaigns initiated by the Building & Construction Industry Training Fund have seen a significant change in the attitudes of students towards a career in the building and construction industry.

The reality is that a trade qualification provides a valuable and rewarding career path. Many tradespeople go on to higher level technical training and small business development. People’s perception of the trades tends to reflect traditional images of the trades as blue-collar jobs rather than the contemporary reality, with increasingly high information, technical, language, and literacy and numeracy proficiency requirements.

The net result of all of the above is that Australia is facing critical skill shortages creating a structural imbalance between the demand and supply of tradespeople. The automotive industry across Queensland is no exception.
The shortage of skills in the automotive industry is attributable to sustained economic growth, the globalisation of the economy, an ageing workforce, a shift in labour market patterns and the poor perceptions that many career advisors, parents and students have of career opportunities in the industry.

Information provided to QASA via the “Industry Skills Survey” validates a frustration in recruiting suitable candidates for apprenticeship vacancies. This current situation will only escalate to a critical point, as identified future demand for apprentices as forecast in the Survey will increase on a par with the continued market growth in most sub-sectors of the industry. The importance of School to industry links, targeted marketing and education campaigns, prevocational and pre-employment programs are essential to minimising the current skills demand facing industry.

Training Infrastructure
One of the major concerns reported by industry in relation to the provision of publicly funded training was the currency of equipment used for educational purposes and the ability of the Registered Training Organisations to provide training and assessment when and where industry requires it.

It is recognised that the Queensland Government has recently committed significant funds into the construction of new trade facilities at Acacia Ridge (SkillsTech) and a number of refurbishments and extensions to regional TAFE Institutes throughout Queensland. The perception of industry is that this infrastructure will in many cases only meet the current training effort required and not the forecast demand.

Innovative approaches to trade training and assessment is a mandatory requirement for all educators, and the formation of partnerships with industry a necessity to minimise the impact of continued growth and advancing technology in the automotive sector. This may translate into an increase in work based training and assessment activities by training providers, and the development of more web based and interactive multi media programs to support the learning process.

Capacity of RTO's to Deliver
For industry to regard Training Programs as valuable there must be an immediate application of knowledge and skills by the apprentice/student in the workplace. The rapid technological advancement of vehicles and machinery places pressure on the industry, in maintaining the currency of employee skills, and for training providers in terms of the human resource requirements to keep pace with these technological changes.

The past five years of growth in many of the automotive industry sectors and the continued forecast growth will continue to challenge the capacity of the publicly funded training system to meet the demand. Registered Training Organisations must continue to explore ways in which to recruit, train and upskill their employees to ensure that they have adequate numbers of competent educators who can be responsive to industries changing requirements.

AUTOMOTIVE INDUSTRY SKILLS PLAN – STRATEGIC ACTIONS (2007-2010)					
Objective	**Aims / Outcomes**	**Strategy**	**Duration**	**Performance Indicators**	**Organisations Responsible**
Long term paradigm shift in the external perception of the image of the Automotive Industry	The Automotive Industry is perceived as one that is highly technical, an innovator, developer and a user of information technology tools. As a global industry it is seen as offering significant opportunities for careers and financial rewards	Establish a working group including representatives of QASA to; • Develop in collaboration with other agencies a marketing campaign targeting (rural & regional) school students, job seekers, career counsellors, parents and community on general image • Promote the automotive industry as a career destination, and provide information on pathways to acquisition of trade and post trade qualifications	18 months Ongoing	• An increase in suitable applicants for jobs especially for apprenticeships • Promotional activities undertaken and materials developed including a website which acts as a signpost for students and job seekers who seek a career in the industry.	QASA including all shareholder Industry Associations in their own right. Government Agencies Australian Apprenticeship Centres Group Training Organisations Registered Training Organisations
Continue to develop a training culture within the industry that will support continual development of skills	Industry will demonstrate a commitment to continuous improvement of their workforce by providing opportunity for personnel training to minimise skill gaps. Enhancement in recognition of the value of training in the overall commercial success of the enterprise and regulatory compliance.	Implement a marketing and information sharing campaign to promote the benefits to employers of investment in training (this will need to complement Government agency strategies). Support employers in broadening their traditional selection pool and advice on ways to attract and retain apprentices and skill tradespersons, such as offering best practice career path strategies.	24 months 18 months 12 months	Articles in industry magazines and journals, use of websites, and presentations to employers NCVER reports to indicate improved recruitment outcomes and completions respectively for apprentices and trainees. Industry surveys indicating a higher level of satisfaction with training effort and outcomes.	QASA including all shareholder Industry Associations in their own right. Government Agencies AAC's GTO's RTO's

		Investigate measures needed for employers to support the cost of employing and training apprentices in the industry. Integrate validated concerns in industry discussions with Government.			
Building on the skills of the existing workforce.	Existing workforce receiving training against identified skills gap	Contribute to improving access to RPL services for existing employees through firstly identifying impediments to access and working together with DETA and RTO's to improve the access and process of assessment. Review, and if necessary, encourage DETA and other Government agencies to fund targeted training to support upskilling where skill gaps and shortages are identified.	18 months	Impediments identified, employers reporting enhanced access to RPL services. Support the development, and provide industry validation of a RPL assessment instrument for all primary trade qualifications. An increase in accredited training delivered to existing employees.	QASA DETA RTO's
Expand the provision, variety and uptake of pathways into apprenticeships.	An increase in the number of people entering in training programs of apprenticeships relative to the Automotive Industry	Monitor and expand the take up of school to industry links programs that support pathways to automotive industry qualifications and employment, through working collaboratively with RICA's, LCP's ATC's and other Schools. Promote pre-vocational training to provide a pathway into apprenticeships. Together with industry and the School sector develop and implement a pre-employment course.	12 months	DETA report increased numbers of students taking up automotive options at School Promotion and take-up of pre-vocational programs Pathways developed, strategies implemented and supported by Industry by their active involvement. Employers report more appropriate referrals from Job network providers. Increased numbers of apprentices employed by GTO's and Labour Hire Companies.	DETA RTO's, QASA DETA, QASA Job Network Providers, QASA GTOs & LHCs

		Implement a project to: • Review current non-trades student cohort • Review credit arrangements and pathways from traineeships to apprenticeships • Investigate the possibility of achieving automotive trade's skills through alternate pathways. Increase Job Network providers and employer awareness of the availability of Automotive Training Package as a tool for assessing the skills of job seekers Identify the reasons why employers choose to use or not use GTO's more widely. This information can then be used to expand the recruitment activities of GTO's by Automotive industry employers		Amendment to credit arrangements for pre apprenticeship training validated as appropriate by industry.	DETA, QASA QASA QASA
Improve outcomes from recruitment solutions to skills shortages	Skills shortages are being met by a wide range of recruitment and training options	Ensure employers have information available to them on migration options as a mechanism for addressing skills shortages Conduct a project with LHC's to identify strategies to facilitate an enhanced role in skills development, particularly in increasing the take up of apprenticeships	6 months 18 months	Improved use by employers of the migration options available to them to meet immediate skills shortages. Increased apprenticeship numbers in the automotive industry, and increased training by LHC's.	QASA, DIMA with support from DEWRSB and industry Labour Hire Companies

INTERNATIONAL VET OPPORTUNITIES

A report compiled by Dargay et.al on *"Vehicle Ownership & Income Growth, Worldwide: 1960-2030* provides an extremely interesting economic analysis of the global automotive industry and by default puts Queensland's position in perspective.

The report confirms that:

- Australia's total vehicle inventory is in the order of 12.5 million (i.e. 4 wheel passenger vehicles only) in 2002.
- By the year 2030 the motor vehicle fleet will have only increased to a maximum of approximately 18 million including second hand and older cars (i.e. over 28 years old)
- In 2002 China had a total of 20 million cars. It is estimated that by 2030 it will have 390 million cars on their roads.
- In the year 2030 the world will have an estimated 2 billion cars on its roads of which 25% will be in China.

These statistics can be translated into the following key points:

- Our national efforts in automotive environmental responsibility while highly commendable are substantially irrelevant in global terms.
- The Republic of China and not the United States of America will be the dominant automotive market of the 21st Century followed closely by the nation of India. While the manufacturing industries and export markets all over the world may benefit from this growing market in China and India a large portion of their vehicles will be manufactured within their own countries.
- The future global demand for automotive technical trade skills will centre on the markets of China and India respectively.
- On page 19 of this report, reference is made to the rate of growth of vehicle ownership in first world countries which will be very minimal compared to the profound changes in the developing nations of the world.

The opportunity for the Queensland Government to partner with Registered Training Organisations to train people from overseas is extensive. The primary purpose being to firstly increase the pool of skilled people who may be eligible to migrate to Australia to aid in minimising the skill shortages within the automotive industry. An even greater opportunity potentially exists for the marketing of VET services internationally. Australia has traditionally produced tradespersons with extremely versatile and high skill levels that are sought by employers all over the world. Our training system is acknowledged, and used as an industry benchmark on the world stage, and our willingness to continually improve the system in itself is a fundamental strength. The forecast growth of the automotive industry in the developing nations of China and India translates into an increased demand for skilled persons to repair and service their fleet. This obvious need will indirectly demand for innovative and extensive training and assessment services of enormous proportions.

AUTOMOTIVE INDUSTRY SKILLS SURVEY 2007

To aid in the development and more importantly the validation of the "2007-2010 Automotive Industry Skills Plan", QASA with the assistance of a Consultant facilitated an Industry Skills Survey.

The surveys were sent to 1,732 industry entities extracted from the membership databases of QASA's shareholder organisations. The dispersion of Surveys as per the relevant organisations was as follows:

- Construction and Mining Equipment Industry Group (CMEIG) – 18 member organisations
- Commercial Vehicle Industry Association Queensland (CVIAQ) – 80 member organisations
- Motor Trades Association of Queensland (MTAQ) – 1,634 member organisations

The key aim of the survey instrument was to assist in establishing an industry training profile relative to the current and future demands of the workforce. The survey also asked industry to forecast their current and future needs in terms of skilled persons in an effort to capture the growth or decline of certain sectors and skill sets. Other questions required employers to identify specific training required for their existing workforce and to gauge interest and/or support in exploring a range of accelerated training programs for students and apprentices alike. A copy of a sample Survey is attached (Appendix 1).

Due to the limited timeframes within which the survey has been developed and dispersed throughout Industry, and the capability of QASA to effectively analyse all of the data provided in the respondent surveys, limited information will be included in this Plan. However, collated and synthesised information will be presented to the Department in the near future as an addendum, and will serve to provide validated strategic direction for the future activities of QASA as it works in partnership with Government, RTO's and Industry to address the current skill shortages.

A variety of tables and reports attached outline various statistics, and a synthesis of responses provided directly from industry on the various questions included in the survey.

Appendix 1:
Sample Employer Survey

Appendix 2:
General Results x Region (Total Numbers)

Appendix 3:
Future Demand for Specialised Training

Appendix 4:
Recruitment of Qualified Tradespersons from Overseas

Appendix 5:
Most Significant Factors Affecting Capacity & Willingness to Employ More Apprentices (Q.14)

Appendix 6:
Should the Nominal Term for Automotive Industry apprenticeships be reduced?

Appendix 7:
Would you participate in an Accelerated Apprenticeship Program? (Q16) x Response and Size of Enterprise (No. of Qualified Tradespersons Working)

Appendix 8:
Would you provide Work Placement/ Experience for an unpaid student? (Q.17) x response and Size of Enterprise (No. of Qualified Tradespersons Working)

Appendix 9:
Ratio of Qualified Tradespersons to Full Time Apprentices x Size of Enterprise (Based on Number of Qualified Tradespersons Working)

Appendix 10:
Other suggestions for improving the availability & training of qualified tradespersons (Q.18)

Appendix 11:
Future Training Demand – 3 year summary

TRAINING PRIORITIES

INDUSTRY TRAINING PRIORITIES (QUALIFICATIONS BY REGION – TABULAR FORMAT)

Queensland Automotive Skills Alliance					
Industry Skills Plan 2007-2010 (AUR05)					
Industry Area or Sub-Sector	**Identified qualification, competency, skill set needs**	**Required Action**	**Priority – Action Timeframe**	**Rational, background – identification of emerging industry issues as seasonal / regional issues**	**Location – Local, Regional or Statewide (identify)**
Sales & Administration	Certificate II in Automotive Sales	New entrants require this qualification or at least 11 competencies to meet the prescribed eligibility requirements for the necessary licence issued by the Office of Fair Trading to work in the industry. The majority of this training and assessment is undertaken on a fee-for-service basis.	Med 2 years	Ongoing need, as the industry has a significant churn rate.	Statewide
Sales & Administration	Certificate III in Automotive Sales	Opportunity to develop specific Heavy Vehicle competencies. Also extensive market for RPL assessment services	Med 2 years	Traditionally salespersons in the H/V sector have come from mechanical backgrounds with no formal training on vehicle standards and regulations. These parameters are critical in this sector as the majority of H/Vs are purpose built.	Brisbane North, Brisbane South & Gold Coast, South West
Sales & Administration	Certificate III in Automotive Sales (Parts Interpreting)	Significant Recognition of Prior Learning opportunity.	High 3 years	A lack of qualified persons in this occupation is a contributing limiting factor to an employer's ability to engage an apprentice in this calling.	Statewide

Industry Area or Sub-Sector	Identified qualification, competency, skill set needs	Required Action	Priority – Action Timeframe	Rational, background – identification of emerging industry issues as seasonal / regional issues	Location – Local, Regional or Statewide (identify)
Bicycles	Certificate II in Bicycles	School-based opportunity, pre-entrant training for people pursuing a career in this industry.	High 3 years	Key initiative to address the skills shortage.	Statewide
Bicycles	Certificate III in Bicycles	Skills Recognition or RPL opportunity. Industry support for work based training and assessment of apprentices. Broad industry support to reduce the apprenticeship nominal term to 3 years.	High 3 years	To address skill shortages caused by extreme growth in the Road-cycling & Mountain biking.	Statewide
Motorcycles	Certificate III in Automotive Mechanical Technology (Motorcycle)	Apprenticeships in AMT (Motorcycle) primary source of recruitment for persons working in this industry.	Med 3 years	Increase in sales of All-Terrain-Vehicles (ATV's) in rural sectors and Scooters will see an increased need for skilled persons.	Statewide
Electrical Technology	Certificate II in Automotive Electrical Technology	Primarily used for competencies to work as an Accessory Fitter	Low		
Electrical Technology	Certificate III in Automotive Electrical Technology	Primary avenue for skilling of new entrants for this occupation. Competency clusters in electro-technology required for qualified tradespersons to accommodate for technology advancements within the industry.	High 2 years	Industry wide trend to up skill Mechanical Tradespersons in electrical competencies due to the increasing nature of electronic systems in most vehicles. The onset of future Hybrid Motor Vehicle with High Voltage power supply will require a change in the required skill sets of Auto Electricians	Statewide

Industry Area or Sub-Sector	Identified qualification, competency, skill set needs	Required Action	Priority – Action Timeframe	Rational, background – identification of emerging industry issues as seasonal / regional issues	Location – Local, Regional or Statewide (identify)
Marine	Certificate II in Marine	Limited need	Low	Industry prefers to engage apprentices in Cert III qualification.	
Marine	Certificate III in Marine	Increase capacity for continued growth in enrolments.	High 3 years	Significant increase in recreational boating (refer industry environment)	Brisbane South & Gold Coast, Central Queensland and North Queensland
Mechanical Technology	Certificate II in Automotive Vehicle Servicing	Qualification provides for a number of occupational outcomes for the service sector.	Med 3 years	Primary qualification chosen by School-based trainees considering a career in Automotive, often progressing into an apprenticeship.	Statewide
Mechanical Technology	Certificate II in Automotive Mechanical	Continued allocation of funding required. Credit arrangements and equivalent industrial relations provisions need to be reviewed.	High 3 years	Primary qualification chosen by School-based trainees considering a career in Automotive, often progressing into an apprenticeship.	Statewide
Mechanical Technology	Certificate II in Automotive Technology (Air Conditioning)	National licensing requirement for all persons currently employed in occupations requiring the service and repair of Automotive Air Conditioning Systems.	High (18 month need)		Statewide

Industry Area or Sub-Sector	Identified qualification, competency, skill set needs	Required Action	Priority – Action Timeframe	Rational, background – identification of emerging industry issues as seasonal / regional issues	Location – Local, Regional or Statewide (identify)
Mechanical Technology	Certificate II in Automotive Mechanical (Cylinder Head Reconditioning)	Limited industry demand. Possible pathway for School students.	Low	The majority of employers would recruit job seekers for the Cert III.	Brisbane North, Brisbane South & Gold Coast
Mechanical Technology	Certificate II in Automotive Mechanical (Tyre Fitting Light)	Potential area for future regulation, due to the increased liability carried by employers. Lack of interest and commitment by industry to resolve the issue.	Med 3 years	Significant growth in the automotive sector best demonstrated by an increase in sales over the past 2 years.	Brisbane North, Brisbane South & Gold Coast, Wide Bay / Sunshine Coast, Central Queensland
Mechanical Technology	Certificate II in Automotive Mechanical (Underbody)	Utilised to equip new entrants for the competencies to repair and service vehicle braking systems, steering and suspension systems and repair of exhaust systems.	Low	Limited demand. Occupations in this industry provided by franchised enterprises that provide the majority of their own training.	Statewide
Mechanical Technology	Certificate III in Automotive Mechanical Technology	Generic qualification which provides for the selection of competencies relevant to the workplace (no descriptor).	Med 2 years	Static growth.	Statewide
Mechanical Technology	Certificate III in Automotive Mechanical Technology (Heavy Vehicle Mobile Equipment)	Primary avenue to meet skills shortage in the industry. Increasing demand.	High 3 years	Significant growth in industry sector	Statewide

Industry Area or Sub-Sector	Identified qualification, competency, skill set needs	Required Action	Priority – Action Timeframe	Rational, background – identification of emerging industry issues as seasonal / regional issues	Location – Local, regional or Statewide (identify)
Mechanical Technology	Certificate III in Automotive Mechanical Technology (Heavy Vehicle Road Transport)	Primary avenue to meet skill shortage in the industry. Increasing demand. Retention strategy required.	High 3 years	Significant growth in industry sector	Statewide
Mechanical Technology	Certificate III in Automotive Mechanical Technology (Light Vehicle)	Primary avenue to meet skill shortages in the industry. Increasing demand. Retention strategy required.	High 3 years	Significant growth in industry sector	Statewide
Mechanical Technology	Certificate III in Automotive Specialist	Generic qualification.	Low	Limited demand	Statewide
Mechanical Technology	Certificate III in Automotive Specialist (Brakes)	Opportunities provided primarily through franchised Brake specialist companies.	Low	Limited demand	Statewide
Mechanical Technology	Certificate III in Automotive Specialist (Diesel Fitting)	Apprenticeship opportunities expanding in this calling. RPL opportunities also exist.	High 3 years	Increasing demand due to the growth in the H/V sector and increasing range of diesel passenger motor vehicles. Employers who had previously utilised MEM qualification now reverting to AUR qualification.	Statewide
Mechanical Technology	Certificate III in Automotive Specialist (Diesel Fuel)	Limited demand (Injection specialists)	Low	Cost to repair components vs. cost to replace. Trends to repair are declining.	Statewide

Industry Area or Sub-Sector	Identified qualification, competency, skill set needs	Required Action	Priority – Action Timeframe	Rational, background – identification of emerging industry issues as seasonal / regional issues	Location – Local, Regional or Statewide (identify)
Mechanical Technology	Certificate III in Automotive Specialist (Engine Reconditioning)	Limited growth area. Maintain existing level of funding.	Low	Industry plateaued due to specialisation by manufacturers. Ongoing growth of the import market.	Statewide
Mechanical Technology	Certificate III in Automotive Specialist (Forklift Mechanic)	Transport and Distribution sector expanding – In time repair and service requirements will increase. Primarily undertaken by forklift sales & service companies.	Low	The majority of Forklift's are serviced by Motor Mechanics.	Brisbane
Mechanical Technology	Certificate III in Automotive Specialist (Transmission)	Apprenticeships.	Low	The majority of repair and service work undertaken by Motor Mechanics.	Statewide
Motorsport	Certificate III, IV & Diploma in Motorsport	Significant opportunity for RPL assessment. Training and/or RPL assessment for specific competencies related to pit safety is of high priority.	Med 2 years	Increasing Insurance premiums due to inability for the industry to demonstrate a large number of appropriately qualified persons.	Brisbane, Gold Coast and Toowoomba
Outdoor Power Equipment	Certificate II in Outdoor Power Equipment	Consider alternative training delivery methods	Low	Limited industry demand. Employers recruit job seekers into the Cert III apprenticeship.	Statewide

Industry Area or Sub-Sector	**Identified qualification, competency, skill set needs**	**Required Action**	**Priority – Action Timeframe**	**Rational, background – identification of emerging industry issues as seasonal / regional issues**	**Location – Local, Regional or Statewide (identify)**
Outdoor Power Equipment	Certificate III in Outdoor Power Equipment	Apprenticeships. Consider alternative training delivery methods.	Med 2 years	Employers reluctant to employ apprentices due to current requirements to attend block release training. Most outdoor equipment retail outlets are small businesses which rely on all staff to contribute to its operation.	Statewide
Vehicle Body	Certificate II in Automotive Vehicle Body	Limited demand. Possible opportunity for School-based strategy for the industry as a pathway to an apprenticeship.	Low	Limited numbers currently enrolled.	Statewide
Vehicle Body	Certificate II in Automotive Vehicle Body (Paint Preparation)	Mature Age apprenticeship opportunity. Pathway for school-based apprentices. Requires further marketing to the industry.	Med 2 years	High industry need to address skill shortages.	Statewide
Vehicle Body	Certificate II in Automotive Vehicle Body (Panel Preparation)	Mature Age apprenticeship opportunity. Pathway for school-based apprentices. Requires further marketing to industry.	Med 2 years	High industry need, uptake of this qualification needed to address current skill shortages.	Statewide
Vehicle Body	Certificate II in Automotive Vehicle Body (Vehicle Glazing)	Limited demand.	Low		Statewide

Industry Area or Sub-Sector	Identified qualification, competency, skill set needs	Required Action	Priority – Action Timeframe	Rational, background – identification of emerging industry issues as seasonal / regional issues	Location – Local, Regional or Statewide (identify)
Vehicle Body	Certificate II in Automotive Vehicle Body (Vehicle Presentation)	Continued industry need for people with this skill set.	Med 3 years	Training demand buoyed by the continued growth in new and used vehicle sales.	Statewide
Vehicle Body	Certificate II in Automotive Vehicle Body (Window Tinting)	Limited demand.	Low	Industry uses semi-skilled labourers.	Statewide
Vehicle Body	Certificate III in Automotive Vehicle Body	Limited demand.	Low	Similar competencies attained through AUM or MEM qualifications.	Statewide
Vehicle Body	Certificate III in Automotive Vehicle Body (Panel Beating)	Primary avenue by which to address current and forecast skills shortage. Intensive pre-employment program opportunity.	High 3 years	High number of vacancies within the industry sector throughout the State. CQ resource sector has poached large numbers of staff from local business. Industry set to collapse. Preliminary discussions with industry and the Insurance Industry have suggested the need for a SFS.	Statewide
Vehicle Body	Certificate III in Automotive Vehicle Body (Vehicle Painting)	Recruitment/Retention issues. Question the relevance of current training product and delivery capacity of RTO's.	High 3 years	Extreme lack of qualified tradespersons throughout the State, especially critical in CQ	Statewide

Industry Area or Sub-Sector	Identified qualification, competency, skill set needs	Required Action	Priority – Action Timeframe	Rational, background – identification of emerging industry issues as seasonal / regional issues	Location – Local, Regional or Statewide (identify)
Vehicle Body	Certificate III in Automotive Vehicle Body (Vehicle Trimming)	Apprenticeships the primary means of skill development of people for the industries labour demands. Flexible training delivery sought by industry.	High 3 years	Increased work due to growth of the Marine industry, motor homes and caravan sales	Brisbane and the Gold Coast
Automotive General	Certificate III in Automotive Retail, Service and Repair (30 month Traineeship)	Specifically developed for occupations where there is no clear career path but defined duties e.g. vehicle dismantlers. Requires further targeted marketing.	Med 3 years	The continued growth of specialised enterprises may provide for an increase in the uptake of this qualification.	Statewide

IDENTIFIED REGIONAL/SEASONAL ISSUES (LIKELY TO AFFECT EMPLOYMENT AND DEMAND FOR TRAINING ETC)

Refer to "Industry Training Priorities" Table, Page 50 - 58

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APPENDICES

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