

PARLIAMENTARY INQUIRY INTO SKILLS SHORTAGES IN THE RAIL INDUSTRY

1. Registration of interest *(CRC's desire to help)*

1.1. This submission is made in response to an invitation to participate in a Parliamentary Inquiry initiated by the Education and Training Committee of the Victorian Government. In making this invitation, the Committee is seeking input from important stakeholders on a number of key issues facing the rail industry. The CRC for Rail Innovation is a leader in rail research and has a keen interest in helping the Committee to understand and resolve the issues contained in this Inquiry. The following sections of this submission outline how the CRC for Rail Innovation plans and undertakes its research and suggests areas of focus that may contribute to overcoming the issues present in Victoria. Specifically, the CRC for Rail Innovation is actively involved in two of the four issues:

Issue (a) "Factors influencing recruitment and retention"

Issue (b) "Demographic profile of the workforce and the outlook for future retirements and loss of skills"

and is proposing work that pertains to another of the issues:

Issue (d) "Whether there is any need for increased training opportunities at university and trade levels and, if so, how industry can stimulate student/user demand".

2. About the CRC for Rail Innovation *(building awareness and credibility)*

2.1. Background

The Cooperative Research Consortium (CRC) for Rail Innovation is a collaborative venture between leading organisations in the Australian rail industry and Australian universities and is supported by the Commonwealth Government. Formed in 2007, it is expected that by 2014 the CRC for Rail Innovation will invest around \$100m in rail industry research. This figure represents an investment of \$40m in cash funding from the Commonwealth Government and around \$60m of in-kind contribution from participating rail organisations; adding up to the single biggest research program in the history of Australian railways.

2.2. Strategic objectives of the CRC

CRC for Rail Innovation has a vision to undertake research that will generate significant economic and social benefit for Australia, and this is driven by its mission to be the leading Australian research provider - achieving commercial outcomes. To assist in delivering this strategy, there are six inter-related research themes that help to focus all research projects. These are:

- Climate change and the environment
- Performance
- Safety and security
- Smart technology
- Urban rail access
- Workforce development

In pursuing these six themes, CRC for Rail Innovation works closely with participating organisations to provide solutions to the challenges the rail industry is facing and to maximise the adoption and utilisation of the research outcomes and products developed.

2.3. Who is involved

At the time of this submission, there are **seven** Australian universities and **eight** rail organisations actively participating in the CRC for Rail Innovation, with another **four** organisations participating in a supporting role. Additionally, the Australasian Railway Association Inc. is highly involved. A full list of participating organisations is appended to this submission (**Appendix A**).

Regarding management and leadership, the CRC for Rail Innovation is directed by its board of senior executives and academic leaders, drawn from the participating organisations, and managed by a small team of professionals working from a head office location in central Brisbane. A chief executive officer leads the CRC team and is assisted by a research director, a business manager and two support staff. All research activities are classified into five programs, as a top level organisational framework, and these are labelled as:

- R1 – Economic, social and environmental sustainability
- R2 – Operations and safety
- R3 – Engineering and safety
- P4 – Education and training
- P5 – Commercialisation and utilisation

Each of these programs has a defined objective that supports the CRC for Rail Innovation vision and mission. Regarding the leadership, each program is led by a chair, recruited from a participating rail organisation, and a program leader, nominated by a participating university. Each program leadership team oversees the development of specific research projects. At an operational level, the development and completion of all research projects is managed by a Research Management Committee, made up of the CRC management team as well as the program leaders and chairs. A summary document of programs and projects is appended to this report (**Appendix B**).

3. Overview of the rail environment and what CRC understands from previous reports in Australia (*building contextual interest*)

3.1. Challenges for rail

The work of CRC for Rail Innovation recognises and is dealing with the range of issues currently facing the rail industry, such as: stimulating long-term growth, providing research-based solutions to environmental problems, the challenge of attracting and retaining employees and harnessing the value of innovation.

3.2. Interstate collaboration to deal with the Victorian issues

Although the Parliamentary Inquiry is being formed to address major rail issues in Victoria, it is not surprising that many of the problems are also present in other

states. For this reason, the CRC for Rail Innovation is committed to working collaboratively with other agencies, such as the Australasian Railway Association (ARA), the Rail Skills Careers Council (RSCC) and the Transport and Logistics Industry Skills Council (TLISC), to address the major issues facing Australia's rail network in the years ahead. In Victoria specifically, CRC Rail for Innovation is engaging directly with various participating rail organisations under the umbrella of the Department of Transport, as well as with Monash University, but there is a desire to build on these networks by encouraging other Victorian rail organisations and universities to join the CRC and benefit from its project outputs.

4. What the CRC is doing at the present time and how this relates to the key issues of the Parliamentary Inquiry (*building commitment and confidence*)

4.1. Completed projects

Throughout the life of the current CRC for Rail Innovation, research projects are approved by the CRC Board in 'tranches' and the latest group of projects is included in Tranche 7. To date, five research projects have been completed, six reports published and 16 research reports are in preparation. Projects previously undertaken and completed in Tranches 1-6 are detailed in [Appendix C](#), but examples of completed research, considered to be most appropriate to this Parliamentary Inquiry, are detailed below:

Project No. R1.101 – Bridging the gap: towards a better understanding of target cohort belief systems

This report is based on a literature review of rail industry and academic reports into the current belief systems of potential employment candidates for Rail. The report show significant gaps in our understanding of the belief systems of various market cohorts such as: older workers, women, migrants, the indigenous community and younger workers. These deficiencies in our understanding mean that Rail may be missing out by designing attraction, selection and retention strategies that may not appeal to the labour market cohort the industry is seeking to attract.

Project No. P4.102/S1 – Scoping rail specific leadership and management development

This report forms part of the CRC's activities in the area of workforce development, more specifically scoping the key developments and emerging issues that impact on national capability in leadership and management development. The report considers international trends, what a selection of rail organisations are doing currently to develop leadership and management capability, identifies potential development needs and suggests area for further research as a main CRC project.

4.2. Current projects

At the time of this submission, 37 research projects are in-progress or approved by the Research Management Committee. We believe the current range of six projects in Tranche 7 will be of particular interest to this Parliamentary Inquiry because three, in particular, address the following key issues the committee intends to address: (a) factors influencing recruitment and retention and (b) demographic profiles of the

workforce and the outlook for future retirement and loss of skills. These are summarised below:

Program R1: Skilled Migration

Program R1: Attraction and Industry Image

Program R1: Staff Retention and Engagement

R1 – Skilled Migration

Skill shortages in key skill areas are greatly affecting the rail industry's ability to perform. Despite the current global financial crisis certain engineering, technical and trade skill shortages remain critical for rail and the Australian economy in general. There is almost a double-edged sword effect for the rail industry, since not only is there a dwindling supply of skilled labour in these key areas, but the rail industry is also in competition with other industries (mining, electricity, water, gas and construction) for these groups of highly sought-after skill sets.

Current research and predictions and the Australian governments policy initiatives in Skilled Migration point to continued skill shortages in certain occupations. This has led the Australian government to amend its current Skilled Migration program as of 1 January 2009 and, as part of these changes, has introduced a Critical Skills List (CSL). The CSL contains a list of 58 occupations, with many categories of engineers, technical and trade occupations joining an array of health occupations on the CSL. The industry will benefit greatly from initiating dialogue between key industry representatives, government bodies, professional organisations and education providers to discuss innovative ideas to address these critical skills issues affecting rail. The project proposes to bring together representatives from these groups and national key stakeholders through the Critical Skills Migration Forum and proposed Critical Skills Creativity Hub (Outcome 1).

The tangible research deliverables from this project will benefit rail by bringing national inter-agency attention to the critical skills shortages that the industry is facing through the Critical Skills Migration Forum. The forum will also be used to gauge interest in the establishment of an ongoing Critical Skills Creativity Hub that would investigate potential international educational partnerships and innovative projects targeted at the rail industry's critical skill shortages. The second tangible research deliverable from the project will be a comprehensive Skilled Migration Information Kit (Outcome 2) for rail.

There is no 'quick fix' solution to critical skill shortages, especially given the complexities of global and national skill shortages, ageing workforces, and fluctuating global financial markets. Nonetheless, this project is a priority for the rail industry because its deliverables have the potential to address these issues by building a multi-stakeholder hub of innovation focused on addressing these issues over the medium and long term. The issue of critical skill shortages is one of the most crucial areas of labour force capacity building and human capital sustainability for the industry.

- Research over 15 months, commenced April 2009
- Industry collaborators: ARA (Chair), TransAdelaide, QR, RailCorp

- Universities involved: SCU (lead) and UoW (support)

R1 – Attraction and Industry Image

Rail is not attracting sufficient numbers of engineers, tradespersons and operational staff to fulfil current and future needs. Contemporary research suggests that rail does not attract its share of university and TAFE graduates and other suitably qualified staff because, in some cases, rail careers are not seen as attractive and, in other cases, because there is a lack of awareness of rail careers among traditional and non-traditional sources of recruitment (DEEWR/ARA 2008, Price Waterhouse Coopers 2007; Kerr and Waterhouse 2008). Kerr and Waterhouse (2008) recommend an analysis of rail's attraction strategies and identification of the perception of rail careers in target labour pools. The issues for rail thus involve developing rail image/employer branding to make it better known and more attractive as an employer and developing innovative attraction strategies.

This project will research rail and similar industries' 'better' practices in employer branding and attraction strategies nationally and internationally. It will also identify the knowledge and perceptions of rail careers in engineering, key trades and technical networks in universities, TAFE colleges, private providers and the recruitment industry.

The research undertaken in this project will result in three tangible 'deliverables' to benefit rail. The first two are reports that identify knowledge (or lack of knowledge) of rail careers among educational providers, students, the recruitment industry and its clients using interview and survey data. This can inform rail careers marketing and will lay the foundations for ongoing, productive relationships with these groups. The third is a portfolio that will offer rail marketing and human resources personnel a series of exemplars and strategies to better brand rail careers and attract a greater pool of suitably qualified applicants in areas of shortage.

This project is a priority for the rail industry because its deliverables have the potential to inform innovative practices that enhance the image of rail as an employer of choice and attract a larger and more qualified pool of potential employees. These innovative practices can directly contribute to workforce planning and the sustainability of the industry.

- Research over 15 months, commenced April 2009
- Industry collaborators: VicTrack (chair), TransAdelaide, QR, RailCorp
- Universities: SCU (lead) and QUT (support)

R1 – Staff Retention and Engagement

Retention and engagement of staff is important. Even in times of higher unemployment and greater economic uncertainty, such as the present, it is still crucial for organisations to be able to keep good staff. The 'war for talent' does not end when labour shortages end – talent is always limited. Retention is the process of physically keeping the staff member in the organisation, whereas engagement is the psychological involvement the staff member has with the organisation.

Recent reports suggest that the rail industry confronts significant and intensifying strategic challenges that may well require a reinvention of its workforce management

policies and strategies. This is particularly true in the area of employee retention and engagement. The loss of key employees, the loss of knowledge and capability, the cost of attracting and replacing those who leave, and the cost of retention programs pose a significant threat to the performance of the rail industry. The complexity of the problem suggests that industry responses need to be based on sound knowledge of current and potential policies and strategies across the industry.

Both concepts of engagement and retention are critical to ensure a highly productive workforce. It is no use having good personnel if they are just as likely to leave, and there is little utility having staff retained in the organisation if they are not engaged with the organisation and what it does. This project will be important to the rail industry since it will provide an understanding of what is currently happening in rail organisations, and, in turn, what strategies can be implemented to enhance retention and engagement of rail employees.

- Research over 21 months commenced April 2009
- Industry collaborators: Veolia (chair), TransAdelaide, QR, VicTrack, Railcorp
- Universities: QUT (lead) and SCU (support)

Concurrent with these new research projects, a parallel project is being undertaken to identify and develop a capability framework for leaders and managers in the rail industry. This research is complementary to the R1 projects and has relevance to the issues contained in this Parliamentary Inquiry, since leaders and managers make decisions that have a direct bearing on how present and future human resources are attracted, recruited, trained and retained in the industry. In early 2009, a scoping report, conducted as a preface to this research, revealed how rail organisations were addressing the need to develop managers and leaders in an effort to bring about a change in culture and improve employee engagement. A summary of this project is provided below.

P4 – Developing a Capability Framework for Leadership and Management Development

The need for this project has arisen from the findings of scoping project that examined, through a desktop literature review and face-to-face interviews with three levels of management in three rail organisations, the existing practices used when developing the capability of leaders and managers. The report highlighted the deployment of a wide-range of learning strategies, varying methods of training delivery and a diverse selection of external training providers. Although there was evidence of management training taking place, the scoping report concluded that much more needs to be known about how the specific learning curriculum of management development is determined and how capability is assessed and evaluated against the needs of rail. The report also suggested that more in-depth and quantitative research was needed among those managers who both organised and took part in training programs, helping to gain in-depth knowledge on the range of management capabilities currently being developed in the rail industry. One major benefit of this research would be the development of a national capability framework for rail managers - benchmarked against international standards. These developments would also help to harmonise management development programs/qualification pathways, generate added value networking during the consultation and utilisation phases, identify opportunities for innovations in program

delivery, consolidate the cost of training, and contribute to the Australasian Railway Association's strategic goals of building industry cooperation, improving performance and generating cost containment. The expected three core deliverables would be:

- a. Evaluate the effectiveness of existing L&MD programs in terms of their relevance to business needs, individual learning requirements, effective design criteria and methods of learning delivery.*
 - b. Develop a comprehensive capability framework of competencies to inform and guide rail leadership and management development programs.*
 - c. Identifying strategies on how rail leaders and managers might benchmark their capability in relation to other managers.*
- Research over 24 months, commenced April 2009
 - Industry collaborators: Railcorp (chair), ARA, ARTC, Connex, TransAdelaide and V-Line
 - Universities: UniSA (lead) and QUT (support)

Another two projects have been approved by the CRC Research Management Committee, and are in the process of proposal development, that have relevance for the Parliamentary Inquiry's fourth issue: "whether there is any need for increased training opportunities at university and trade levels ...". These projects are:

R2 – National Rail Safety Management Program

A recent report prepared for the ARA (Hawke 2008) mapped out the key competencies required by a rail safety manager. This document identified gaps in the provision of training in safety management for rail safety managers. This project responds to this identified need through the development of a dedicated post-graduate coursework program in Rail Safety Management.

In order to effectively meet the challenges of improving Australia's rail safety record in a complex climate of advancing technology, increasingly rapid turnover of staff, and increased competition, significant investment in advanced safety training is necessary.

In Australia, industry-based Graduate Certificate and Graduate Diploma programs form the most appropriate forum for such advanced training. They enable high quality and highly specialised higher education for industry-based students, without the necessity for generic undergraduate qualifications.

Such programs are critical in the ongoing professionalization of the safety management role, and can be constructed as a core component of the ongoing development of the rail industry in Australia.

Rail Safety Management centres on the study of people at work, and has the basic goal of increasing productivity and enhancing safety. One of the major contributions of safety management is in understanding the risk profile of rail operations. Without an understanding of safety management it is impossible to effectively determine whether current or planned operations represent an unacceptable risk to rail personnel.

A growing desire for training in safety management is evident from the increasing number of people from the rail industry who are taking non-industry specific postgraduate courses in Safety Management, such as the University of South Australia's Masters in Human Factors and Safety Management.

To meet this need for postgraduate training in Rail Safety Management an 18-month project is proposed that will develop a standardized and comprehensive Safety Management curriculum for the "efficient rail industry." This curriculum will be developed in close conjunction with industry and will take the form of a postgraduate level program in Rail Safety Management. This program will be located at the University of South Australia but will be a combination of courses from universities participating in the Rail CRC and if appropriate universities from outside of the CRC. All of the courses in the program will be tailored specifically to the rail industry with the activities and assignments in these courses designed around identified training needs.

- Research over 30 months
- Industry collaborator: ARA (Chair)
- UniSA (lead)

P4 – Scoping a Rail Safety Investigator Competency Framework

The need for this research project was suggested by a senior rail safety manager in a CRC participating organisation. Following discussions with the research team at UniSA, it was agreed to advance the research as a scoping project in order to assess its long-term viability. Therefore, the aim of this project is to scope the feasibility of developing a national competency framework for Rail Safety Investigators and a tertiary qualification. This would enable rail organizations to offer a professional development pathway to enhance investigator credibility and attract people to a vital area of specialization within rail safety, as part of a vocational and educational strategy to meet the career development requirements of professional Rail Safety investigators. Furthermore, a national consolidated approach might be found to save the industry time and money.

- Scoping research over 6 months
- Industry collaborators: Railcorp (Chair), V/Line, QR, West Net
- UniSA (lead)

4.3. Future projects

The people involved in the CRC Rail for Innovation are passionate about their work and many have substantial expertise in Rail. New research ideas are being sought regularly through industry networking forums, participating organisations and the wider Rail community at conferences. CRC has a well-defined process for ensuring that all research ideas are considered against the strategic goals and are communicated to the rail community. New proposals are evaluated by the Research Management Committee before submission to the board for approval. From the 19 new research ideas in preparation, four are thought to be relevant to this Parliamentary Inquiry:

- Sustainable brand: marketing of the rail industry to Generation Y employees
- Development of an on-line career planning tool to aid self-directed progression and promotion
- Investigating the benefits, barriers and potential of e-learning
- Recognising the value of prior learning and competence in recruitment, selection and participation in rail training programs

5. What CRC intends to leave as a legacy (*building hope*)

Typically, CRCs in Australia have a life-span of seven-years; therefore, the CRC for Rail Innovation will plan to complete its work by 2014. Since the long-term success of any CRC is determined ultimately by the perceived value of its legacy, the CRC for Rail Innovation aims to deliver on its promises by leaving behind a wide range of benefits for the rail industry and Australia. These legacies are aligned in themes against each program output and the milestones agreed with the Commonwealth Government. A summary can be seen in [Appendix D](#).

Appendix A: List of Participating Organisations in the CRC for Rail Innovation

Rail CRC core participants are:

- Australasian Railway Association Inc
- Australian Rail Track Corporation Ltd
- Department of Transport, Victoria (including Connex, VLine, VicTrack, Yarra Trams, Metlink)
- Pilbara Iron Pty Ltd
- QR Limited
- Railcorp, New South Wales
- Central Queensland University
- Monash University
- Queensland University of Technology
- Southern Cross University
- University of Queensland
- University of South Australia
- University of Wollongong

In addition there are a number of supporting participants:

- TransAdelaide
- Public Transport Authority of Western Australia
- Rail Infrastructure Corporation
- TTG

Appendix B: Summary of Programs and Projects in the CRC for Rail Innovation and Appendix C: Projects Undertaken and Completed in Tranches 1 to 6

Program Name	Project Code	Output ID	Short Project Descriptor	Start Date	Completion Date	Tranche
R1 □Economic, Social and Environment	R1.100	J1.1	Emissions Trading (Preliminary)	01□Oct□07	31□Mar□08	0
**COMPLETED						
R1 □Economic, Social and Environment	R1.101	F3.1	Labour Supply Literature Review	01□Dec□07	17□Apr□08	1
**COMPLETED						
R1 □Economic, Social and Environment	R1.101	F3.1	Labour Supply Literature Review (extension)	01□Mar□08	17□Apr□08	CEO
**COMPLETED						
R1 □Economic, Social and Environment	R1.102	G4	Environmental Regulations	01□Jan□08	31□Dec□07	1

R1 □Economic, Social and Environment	R1.103	J1.2	Climate Change (Transport Database and other Topics)	01□Jan□08	30□Jun□09	1
R1 □Economic, Social and Environment	R1.104	H6	Supply Chains	01□Jun□08	31□May□09	3
R1 □Economic, Social and Environment	R1.105	G5.1	Noise (Preliminary)	02□May□08	01□May□10	CEO
R1 □Economic, Social and Environment	R1.106	J1.3	Climate Change (Macroeconomics Support)	11□Apr□08	10□Jul□09	4/CEO
**COMPLETED						
R1- Economic Social and Environment	R1. 107		Urban Rail Demand Management Strategies	1-Jan-09	30-Jun-10	
R1-Economic Social and Environment	R1.108		Accelerated Depreciation	1-Oct-09	1-Mar-09	
R1-Economic Social and Environment	R1.110	J1.2b	Climate Change (other topics re-scoped)	1-Jan-09	31-Dec-09	

R1-Economic Social Environment	R1.111		Skilled Migration for the Rail Industry	1-Apr-09	1-Oct-10	
R1-Economic Social Environment	R1.112		Innovative Practice in Attraction and Industry Image for Rail	1-Apr-09	1-Oct-10	
R1-Economic Social Environment	R1.113		Staff Retention and engagement in the Rail Industry	1-Apr-09	31-Dec-10	

Program Name	Project Code	Output ID	Short Project Descriptor	Start Date	Completion Date	Tranche
R2 □ Operations and Safety	R2.100	K1.1	Level Crossings Research Database	01 □ Jan □ 08	31 □ May □ 08	1
**COMPLETED						
R2 □ Operations and Safety	R2.101	M1	Safety Culture Management	01 □ Mar □ 08	28 □ Feb □ 11	1
R2 □ Operations and Safety	R2.102	N1	Human Factors Analytical Tools	01 □ Mar □ 08	28 □ Feb □ 11	1

R2-Operations and Safety	R2.103	L1	Demand Responsive Train Planning	1-Sep-08	31-Aug-11	
R2-Operations and Safety	R2.104		Crowding	1-Mar-09	28-Feb-11	
R2-Operations and Safety	R2.105		Dynamic Crew Allocation	1-Mar-09	28-Feb-10	
R2-Operations and Safety	R2.106		Vandalism Literature Review	31-Dec-08	28-Feb-09	
R2-Operations and Safety1	R2.107		National Rail safety Management Program	1-Apr-09	30-Sept-10	

Program Name	Project Code	Output ID	Short Project Descriptor	Start Date	Completion Date	Tranche
R3 □Engineering and Safety	R3.100	BT17	Insulated Rail Joints	01□Jan□08	31□Dec□10	1
R3 □Engineering and Safety	R3.101	BR11	New Wheel Steels	01□Jun□08	31□May□11	1

R3 □Engineering and Safety	R3.102	AT5	Non□destructive Ballast Assessment	01□Jun□08	31□May□11	1
R3 □Engineering and Safety	R3.103	AT9	Short Pitch Irregularities	01□Jan□08	30□Jun□09	1
R3 □Engineering and Safety	R3.104	BZ1	Corridor Capacity Analysis	01□Jan□08	30□Jun□08	1
R3 □Engineering and Safety	R3.105	BT21	Rail Squats	01□Jun□08	31□May□11	3
R3 □Engineering and Safety	R3.106	BT2	Ballast Design	01□Jun□08	31□Dec□11	2
R3 □Engineering and Safety	R3.107	BT22	Integrated Wear□Fatigue□Lubrication	01□Jan□08	30□Jun□09	0

R3 □Engineering and Safety	R3.108	AT3	Corrugation Detection	01□Aug□08	31□Jul□11	4
R3 □Engineering and Safety	R3.109	BT8	Rail Grinding Best Practices	01□Aug□08	31□Jul□11	4
R3 □Engineering and Safety	R3.110	Cz3	Curve Lubrication	01□Aug□08	31□Jul□11	4
R3 □Engineering and Safety	R3.111	Dz6	Affordable Level Crossings	01□Aug□08	31□Jul□10	4

Program Name	Project Code	Output ID	Short Project Descriptor	Start Date	Completion Date	Tranche
P4 □Education and Training	P4.100	Q1.1	Course Evaluations Preliminary	01□Jan□08	31□Dec□08	1
P4 □Education and Training	P4.101	R2.1	Driver Performance Courses Preliminary	01□Jan□08	30□Jun□08	1
**COMPLETED						

P4-Education and Training	P4.102	S1.1	Rail management Capability	1-Sept-08	28-Feb-09	
P4-Education and Training	P4.103		Evaluation of simulators in train driver training	1-Mar-09	29-Feb-12	
P4-Education and Training	P4.104		Developing a capability framework for leadership and management development	1-Apr-09	31-Mar-11	
P4 – Education and Training	P4.105		Course Evaluation Methodology	1-Jul-09	30-Jun-10	

****COMPLETED**

Appendix D: Themes and Legacies of the CRC for Rail Innovation

Theme	Legacy
Climate Change and Environment	<p>Catalyst for Environmental Improvement</p> <ul style="list-style-type: none">• Provision of credible information to assist in policy/advocacy - a more informed industry• A cleaner, greener industry eg. young fleet with low or zero emissions, less impact from rail corridors• Increased use of rail on account of environmental performance• Effective ETS plus new generation of transport policies• Workable environment regulations
Performance	<p>Performance Enhancement</p> <ul style="list-style-type: none">• decreased transit time• increased reliability• increased availability• increased capacity• increased yield• increased market share• improved resilience to Climate Change
Safety and Security	<p>Practical Tools for Safety and Security</p> <ul style="list-style-type: none">• understanding why people put themselves and others at risk• reducing fatalities/injuries at rail crossings• safety and security become part of design• reduction of serious incidents, injuries• public appreciation of rail as a safe mode of transport
Smart Technology	<p>Optimised Technology Uptake</p> <ul style="list-style-type: none">• technology roadmap to 2040• increased technology uptake• reduced technology cost• increased interoperability :and improved rail system performance improved rail system performance and safety
Urban Rail Access	<p>Unleashing of Urban Rail</p> <ul style="list-style-type: none">• increased customer satisfaction/• increased network utilisation• increased rail market share• improved community sustainability

**Workforce
Development**

Underpinning Rail Workforce Transformation

- increased skill levels
- rail an employer of choice for staff
- enhanced diversity
- increased engagement & retention
- clear career pathways
- easier local and international recruitment
- increased flexibility & innovation in work practices
- training delivered to meet industry needs
- better qualified staff
- industry workforce transformation