

Rail and Underground Panel



Date: 20 May 2015

Item: Investing in World Class Skills for the Future

This paper will be considered in public

1 Summary

- 1.1 The accompanying presentation provides an overview of how TfL is investing in skills for the future.
- 1.2 The presentation highlights the following:
 - (a) apprentices within the business and how they are fundamental to the future of London Underground and London Rail;
 - (b) how the investment made by London Underground and London Rail drives opportunities both within the business and within the supply chain;
 - (c) the TfL School Skills Programme;
 - (d) TfL's diversity programme; and
 - (e) the future of apprenticeships at TfL.

2 Recommendation

- 2.1 The Panel is asked to note the paper and presentation.

List of appendices to this paper:

Appendix 1: Investing in World Class skills for the future presentation

List of Background Papers:

None

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London Underground and Rail

Investing in World Class Skills for the future



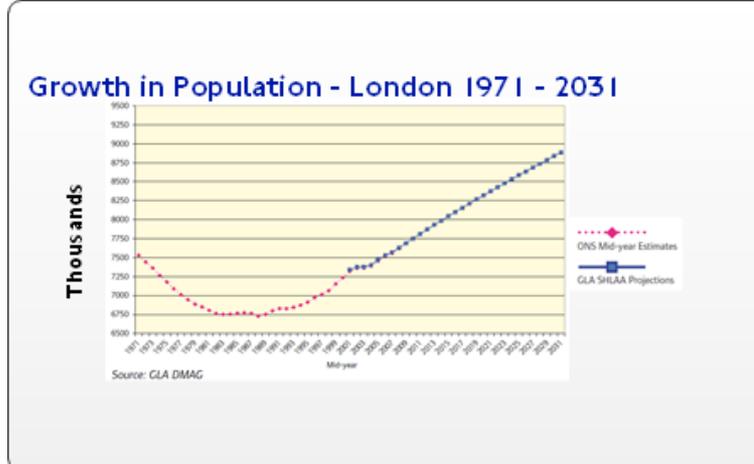
Investing in World Class skills for the Future

- **Achieving our vision**
- **Apprenticeship schemes**
 - **Focus on engineering**
- **Creating opportunities through the supply chain**
 - **Case studies**
- **LT Museum: Inspire Engineering**
- **School Skills Programme**
- **Royal Greenwich University Technical College (UTC)**
- **Diversity**
- **The future**



Apprentices are fundamental to achieving our vision

London is growing rapidly. By 2031, there will be 1.8m more people living and working in the Capital – that's an extra Tube train full of people every three days. Not surprisingly, demand for TfL's rail services – Underground, Overground, Docklands Light Railway and Trams – is growing quickly too.



Our four priorities

We have achieved a lot. But we know that there's still much more to be done if we're going to deliver on our vision of providing a world-class transport network for London. Our approach is defined by four priorities.

- Safety and reliability**
All day, every day. We are proud to be among the safest metros in the world. We're also much more reliable than we used to be, and getting even better.
- Maximising capacity from the existing network**
We must get the absolute most we can out of the infrastructure we have. We're modernising signalling and trains to enable us to run more services and carry many more people.
- Growing the network**
Crossrail will add 10 per cent extra capacity to London's rail network. The Tube is growing too and extensions of the Northern and Metropolitan lines, along with the expansion.
- Customer service**
The expectations of our passengers are growing. They want their journeys to be easy and straightforward, and the services we provide better and afterwards - like

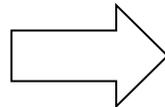
Efficiency
£1.6bn Capital per Year

People

Technology

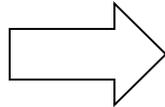
Engineering Apprentices

Specialist Services Apprentices



**Design
Manufacture
Install
Test and Commission
Operate and Maintain**

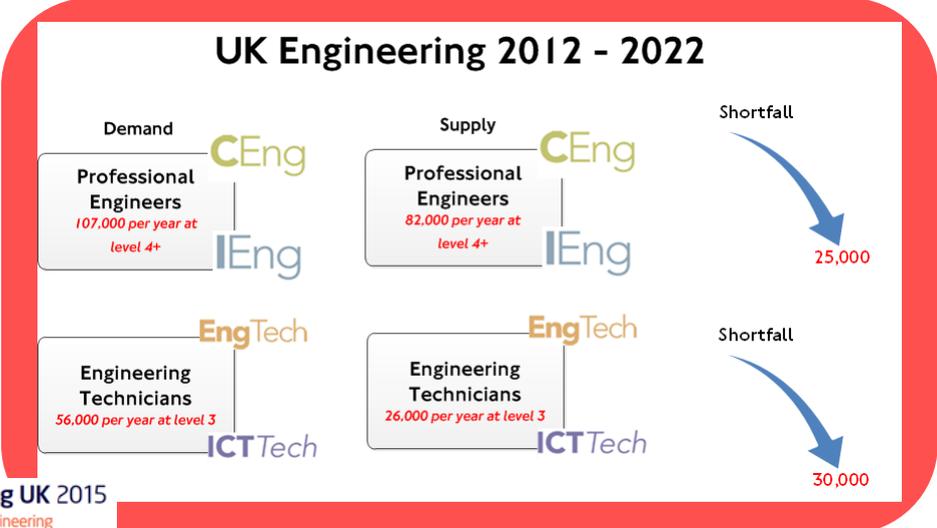
**Project Management
Project Planning
Quantity Surveying
IM
HR
Commercial**



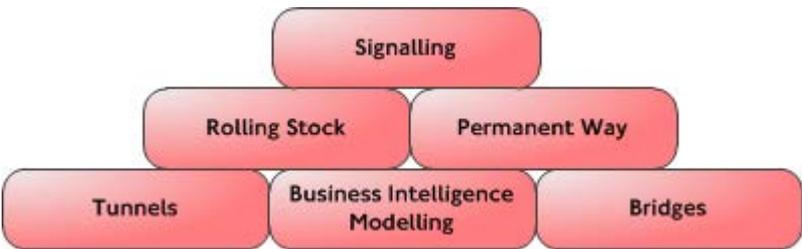
**Trains
Track
Signalling
Comms
Power
Mechanical and Electrical
Tunnels
Operations and Maintenance**



Key focus area: There are not enough engineers to achieve our vision



Our Engineering Skills



Apprenticeship schemes at TfL

Response: 71% increase in engineering apprentices compared to last year



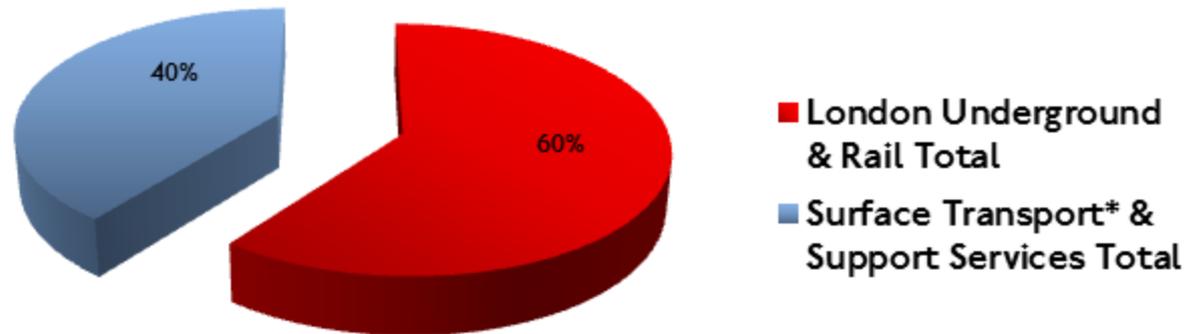
Business Area	Apprenticeship Frameworks	2009	2010	2011	2012	2013	2014	2015 Demand
LU Operational	L2 Rail Services	14		15	15	10	7	10
LU Engineering (AP)	L3 Engineering (multiple frameworks)	21	31		13	22	26	50
LU Engineering (JNP)	L3 Engineering (multiple frameworks)					12		
LU Engineering (JNP)	L2 Rail Infrastructure Engineering (Track)					7	6	12
CPD Engineering - Track	L2 /L3 Rail Infrastructure Engineering (Track)				8	6	3	8
CPD Engineering - Track	L3 Rail Infrastructure Engineering (Track)					8	5	3
AP Power	L3 Rail Infrastructure Engineering (Electrification)			4	6	4	4	4
Total		35	31	19	42	69	51	87

Transport for London Surface Transport and Specialist Service Apprenticeships	
Quantity Surveying	Level 3 Surveying
Finance	Level 4 Higher Apprenticeship in Professional Services - Management Accounting
Highway Technicians	Level 3 Management
Traffic Maintenance	Engineering Manufacture - Engineering Maintenance
Traffic Infrastructure	Engineering Manufacture - Engineering Technical Support
IM	Level 3 IT, Software, Web & Telecoms Professionals
Project Management	Level 4 Higher Apprenticeship in Project Management
Project Planners	Level 3 Management
Dial A Ride	Level 3 Vehicle Maintenance and Repair



Apprentices: What 2015 looks like

2015 Transport for London Apprentice Demand
(excluding Crossrail)

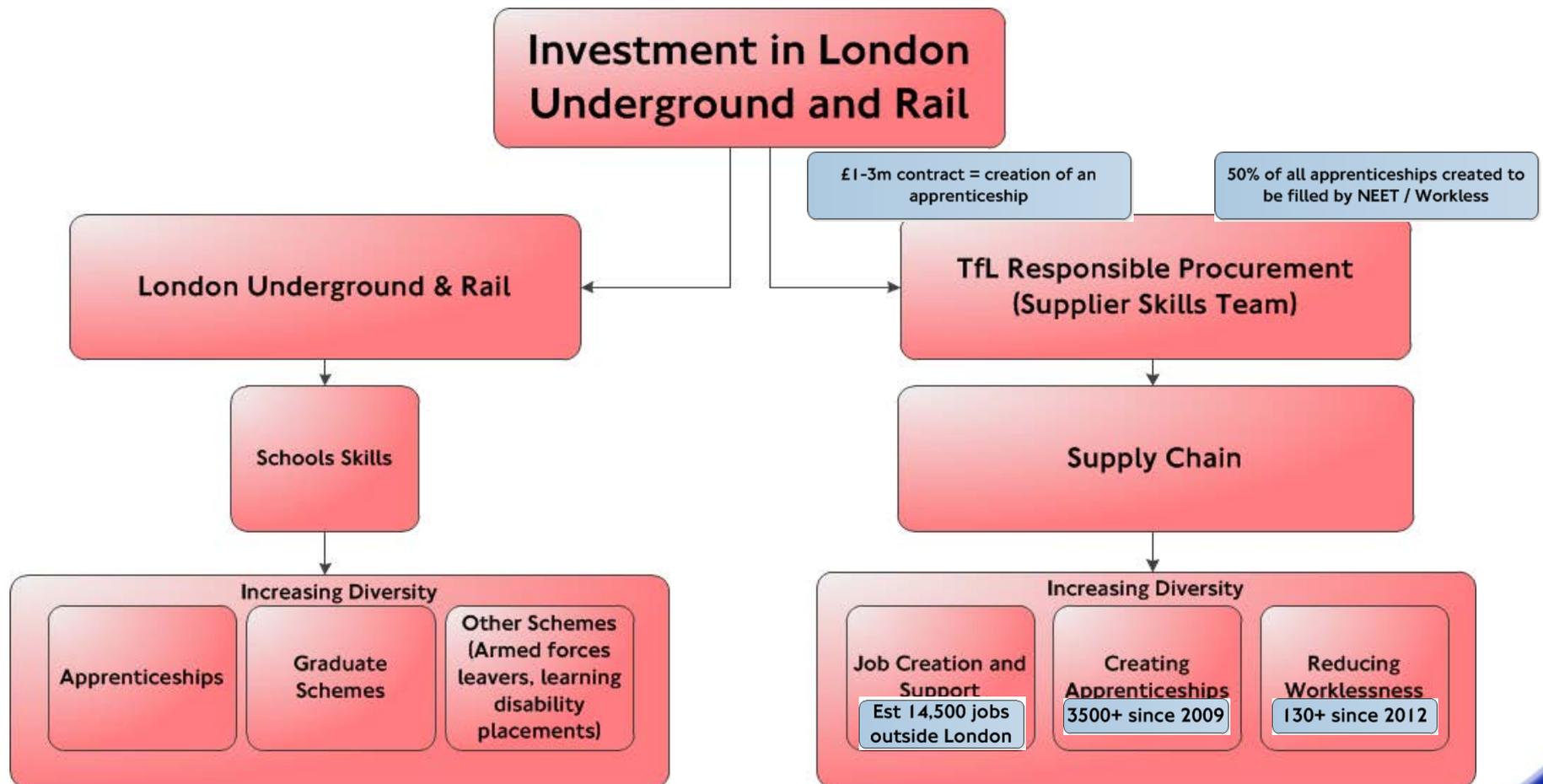


Business Unit	2015 Transport for London Apprentice Demand (excluding Crossrail)
London Underground & Rail Total	87
Surface Transport* & Support Services Total	57

** Surface Transport is in the initial phase of delivering its £4bn Investment Programme which may see a significant increase in apprentice numbers*



Investment drives opportunities internally and within our supply chain



Job Creation and Support

Creating Apprenticeships

Reducing Worklessness

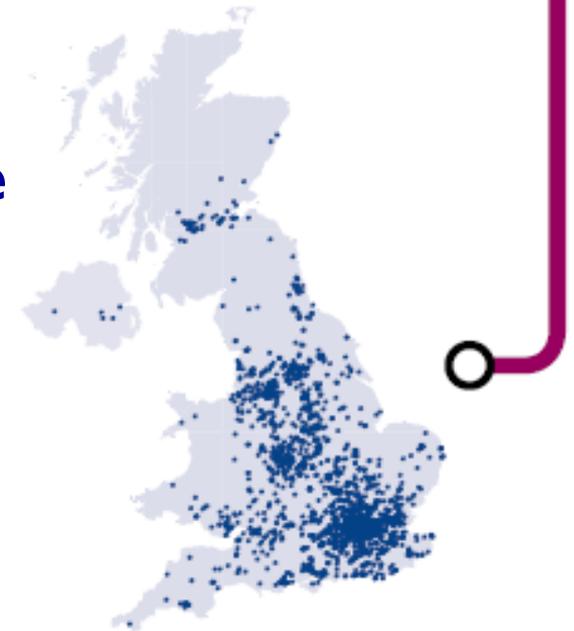
Investment and skills for the UK: London Underground and Rail

Since 2009 London Underground and London Rail have created more than 1400 apprenticeships internally, and at least 3500 within the supply chain (c. 600 every year)

83% of London Underground and Rail spending goes to suppliers based outside of London

In addition Crossrail has created more than 400 apprenticeships since 2009

Locations of Underground and Rail suppliers across the UK



Initiatives driven through the supply chain

Route into Work

Participant

Route into Work is a 3-day pre-employment training course for 16-24 year olds. It's designed to equip you for meeting future employers and applying for jobs, apprenticeships or further training. The course includes a Level 1 NCFE Accreditation in Business and Customer Awareness and many of the young people who complete are offered an interview with a recruiting employer.



'I was accepted for the job I applied for with Serco and I now have an apprenticeship. If I didn't go on the Route into Work course I would never have got this apprenticeship.'

Karl Swahn, Route into Work Applicant



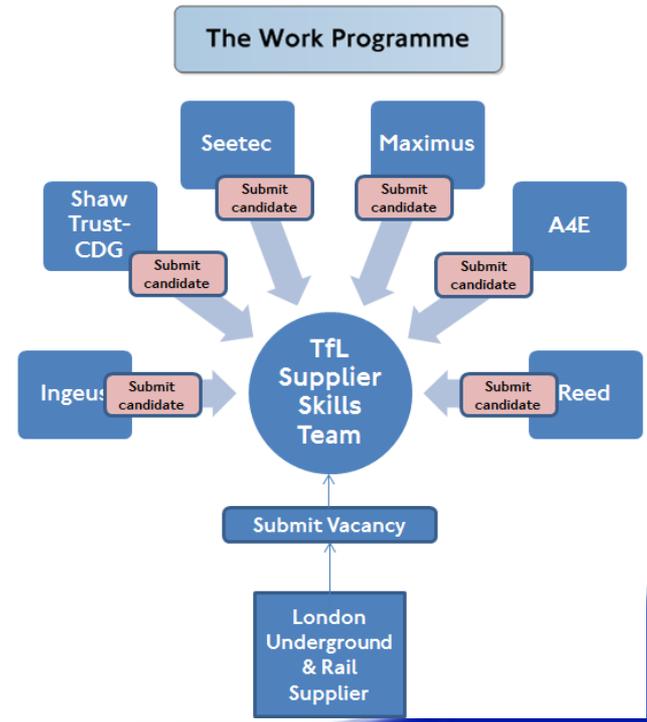
'London Transport Museum's Route into Work helped us to fulfil our apprentice recruitment. The scheme is truly valuable to both us as an employer and the participants looking for work, engaging with some of the hardest to reach young people in London and allowing us to access their skills.'

Kim Millen, HR Director, Cleshar



Department for Work and Pensions (DWP) Work Programme

TfL coordinates vacancies provided by LU & Rail suppliers and long term unemployed candidates supported by the 6 Work Programme Prime Contractors



Case Studies: Opportunities created through the supply chain

Balfour Beatty
Rail

9 Apprentices roles created as a result of the London Underground and Balfour Beatty Track Partnership (2014-15) – also winner of Most Innovative Transport Project at the London Transport Awards - 2014

london
transport awards

BOMBARDIER
the evolution of mobility

In 2010 the following £3.4Bn orders were awarded to Bombardier which resulted in:

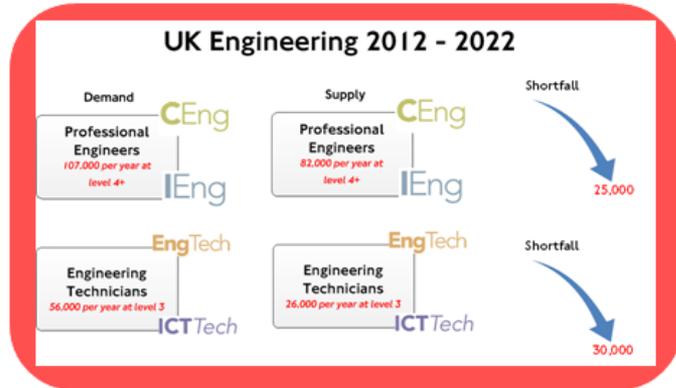
- 400 new jobs created to join the 3,000 staff in Derby
- Supported a further 8,000 jobs within Bombardier's supply chain

The order:

Victoria line upgrade: 376 carriages (47 trains comprised of eight carriages each) Metropolitan, District, Circle, and Hammersmith & City lines upgrade: 1395 carriages (191 new trains - 58 of eight carriages and 133 of seven carriages) London Overground: 228 carriages



TfL's School Skills Programme

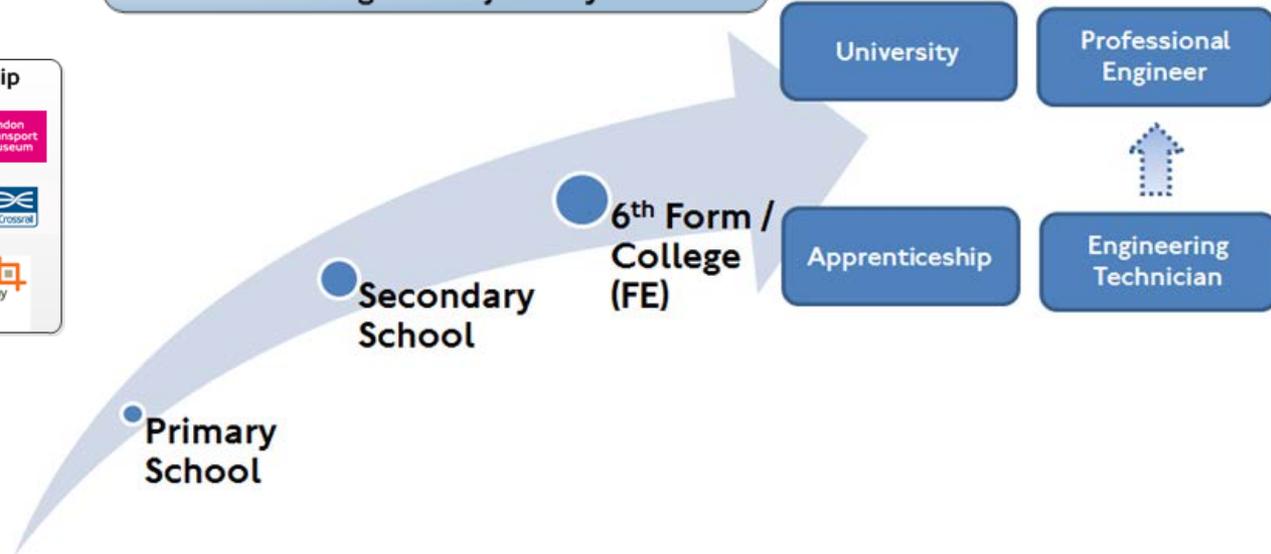


To maintain, improve and innovate London Underground requires skilled young people to join its engineering workforce and its supply chain.

The new TfL School Skills Programme 2015 aims to inspire young people to become our engineers of the future through targeted activities and in partnership with other organisations



An engineer's journey



TfL's School Skills Programme

Transport for London School Skills Programme 2015

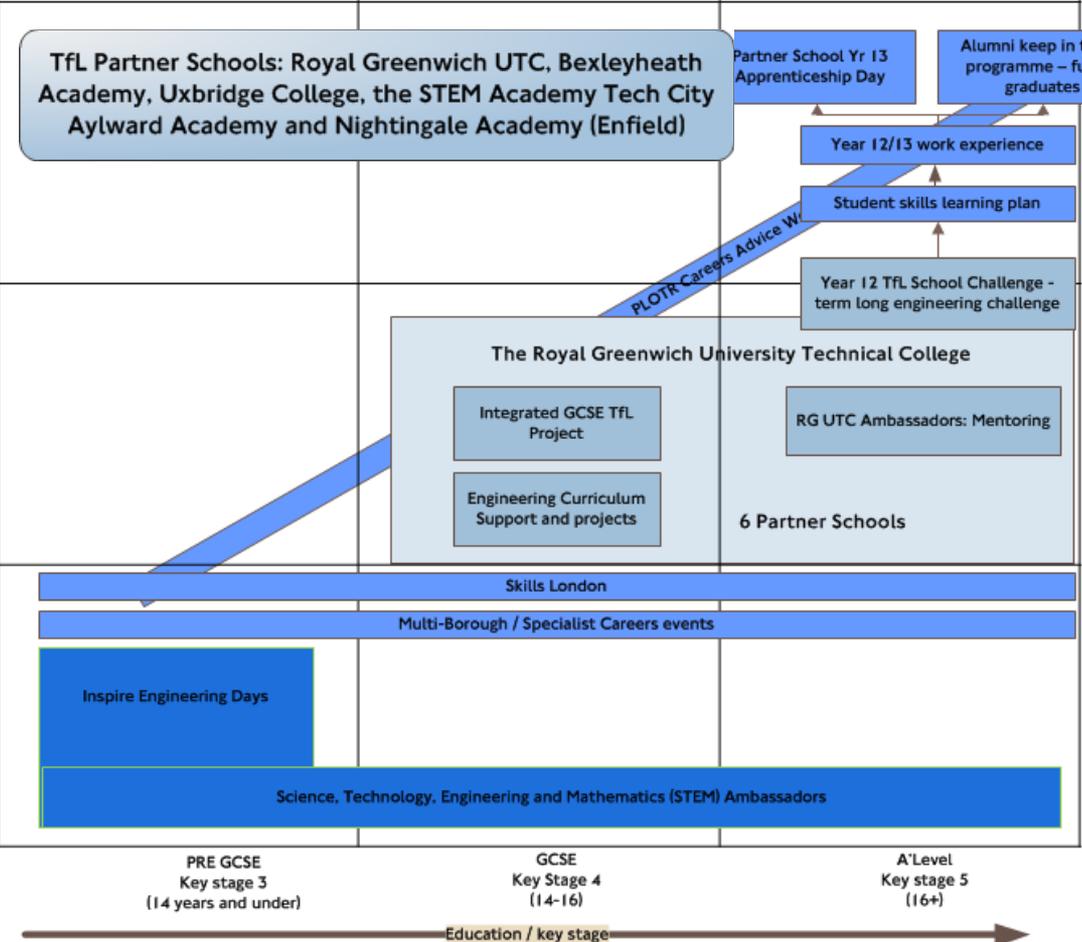


TfL Objectives

Recruit to TfL schemes within 2-5 years

Improve Employability Skills needed for TfL's scarce skill jobs – Engineering and related fields

Raise awareness of science, technology, engineering and mathematics (STEM) and careers in Engineering



Key

- Co-ordinated by the London Transport Museum
- Co-ordinated by TfL / LU
- Co-ordinated TfL / LU – delivered by 3rd party

PRE GCSE Key stage 3 (14 years and under) GCSE Key Stage 4 (14-16) A'Level Key stage 5 (16+)

Education / key stage →



LT Museum: Inspire Engineering Day

TfL & London Transport Museum Inspire Engineering Day – under 14 year olds - Evaluation Overview

General Statistics

	Jul '11	Nov '11	Feb '12	Jun '12	Nov '12	Mar '13	Jun '13	Nov '13	Mar '14	Overall
Number of participating students	150	180	60	250	271	196	155	213	213	1475
Percentage of completed evaluations	45%	65%	87%	82%	72%	71%	86%	82%	70%	72%
Percentage of girls	71%*	43%*	14%*	48%*	37%*	41%	66%	65%	44%	42%*

*Data collected from completed evaluation forms

Snapshot of Student Opinions (by percentage of 1215 completed evaluations)

	July '11	Nov '11	Feb '12	Jun '12	Nov '12	Mar '13	Jun '13	Nov '13	Mar '14	Overall
Increased understanding of engineering	80%	84%	82%	87%	90%	89%	95%	96%	96%	90%

Exemplar Student Quotes—What is Engineering?

Top Quotes:

"It means when people design, construct and improve different appliances or equipment using technology and the knowledge gathered from the past."
Brentside High School, Year 9 male

"It is an important job to take a lot of responsibility for and I hope that I get to experience engineering in the future."
Burntwood School, Year 7 girl

"It means being able to develop an idea into reality so it helps society and it's never ending problems."
St. Martins-in-the-Field, Year 7 girl

"Before I thought it would be boring but it is actually really good and I want to become an engineer."
St. Martins-in-the-Field, Year 7 girl



As of April 2015 more than 6000 pupils have taken part in both Primary Inspire and Inspire Engineering days

Inspiring women

The need to attract more young people – women in particular – into careers in engineering was highlighted in the first National Women in Engineering Day in June 2014.

The day coincided with TfL's own Inspire Engineering Week at Acton, which saw more than 370 secondary school girls participate. They were joined by 10 of TfL's women engineers, who work in areas such as Tube improvements, Crossrail and highways.



The Royal Greenwich University Technical College (UTC)



Engineering TfL Graduates and Apprentices – UTC Mentors

University Technical Colleges (UTCs) are government-funded schools that offer 14–18 year olds a great deal more than traditional schools. They teach students technical and scientific subjects in a whole new way and are educating the inventors, engineers, scientists and technicians of tomorrow.



"From the first instance of meeting these young aspiring engineers, it is clear to see that with every new generation; they have more and more to offer.

By having the opportunity to positively impact a young person's outlook, on their career aspirations, is something that drew me to volunteer for TfL's mentoring programme.

Having a mentor at that age is something I never had myself, and looking back, it is definitely something that I wish was available.

With the right aspirations and encouragement, these young people will be the inventors and skilled engineers of the future."

Alex Cross
Apprentice
Power, Communications & Cooling, London Underground



Investing in Diversity



Zoe Dobell - project engineer
Zoe is a project engineer in the Bakerloo, Central, and Victoria line upgrades team.



Aisha Tague - area station manager
Aisha started at London Underground 11 years ago as a customer service assistant, before becoming a duty station manager, and more recently, an area station manager.



Melanie Ogden - assistant project manager
After joining our graduate scheme in 2011, Melanie is now an assistant project manager for the Northern Line Extension Project.



Elsie Tuvumasi-Mensah - project manager
Elsie started in 2013 as a project manager in the Stations Stabilisation Programme and currently manages a number of stations.



Michele Dix - Crossrail 2 managing director
Michele is the managing director of Crossrail 2 and was recognised with a CBE in the Queen's New Year's Honours list in 2015.

Celebrating 100 Years of Women in Transport

We are celebrating women's role in transport over the past 100 years, developing our workforce and engaging with future generations

Follow us on Twitter @transportwmn

Join in and be a part of a network



Steps into Work



Steps into Work is a 12 month programme. It involves participants completing three mainly in office-based roles within Transport for London (TFL). Students also have the opportunity to complete an operational placement in a London Underground (LU) station. This provides them the chance to gain unit 027 of NVQ Level 2 in Rail Services qualification which focuses on customer services. Whilst on the programme, participants are students of Barnet and Southgate College studying towards a BTEC Level 1 in Work Skills

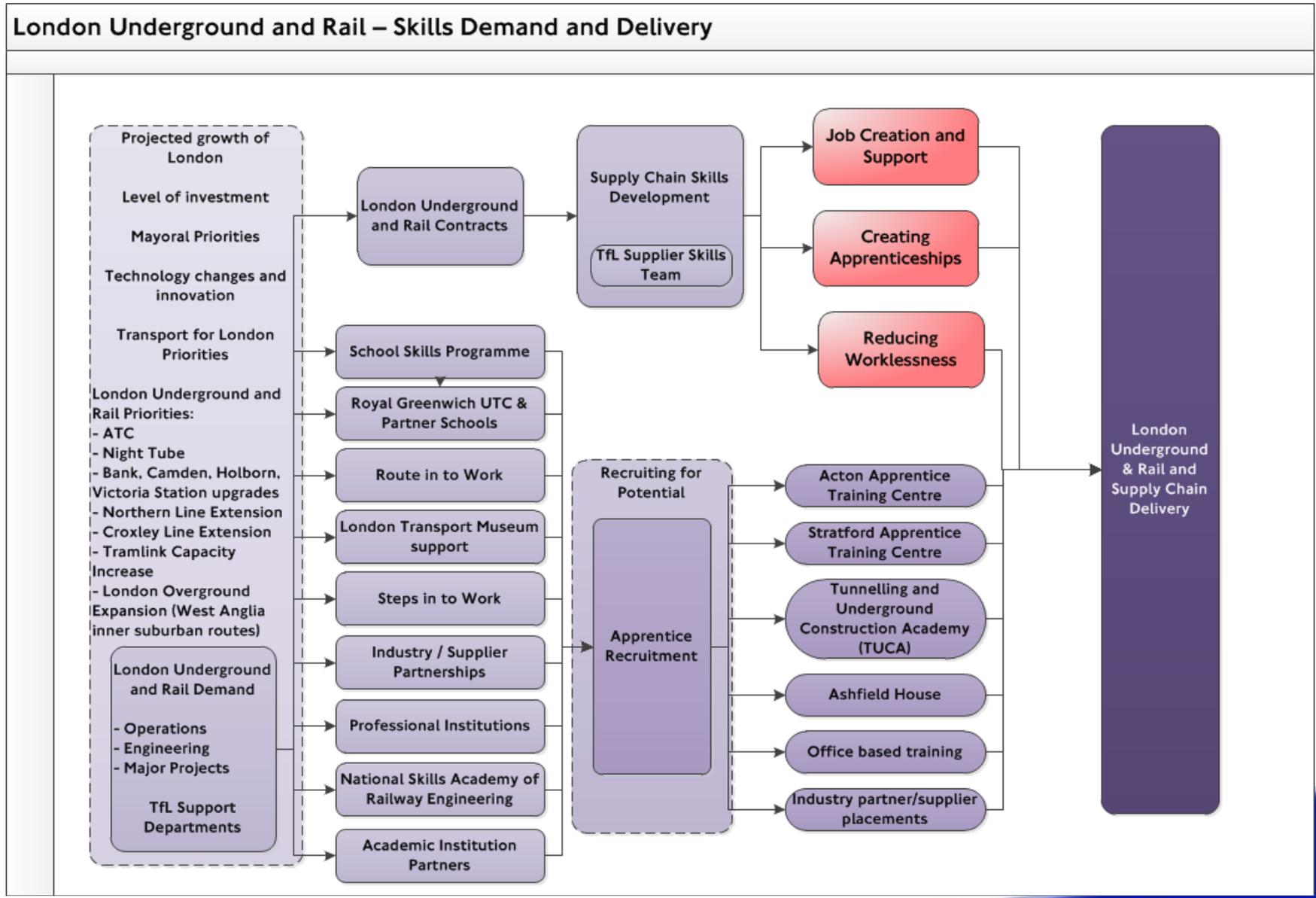


The programme proved a turning point for one student, Richard Cowdery, who told Mark Harper, Minister for Disabled People, how Steps into Work had put him on track to a career with London Underground.

Richard, 25, struggled to find a permanent job after leaving school and felt employers were overlooking him because of his twin disabilities, Asperger Syndrome and cerebral palsy.

After completing the year-long programme, he successfully applied for a full-time post as a customer service assistant at Hammersmith Tube station. Now, almost nine months into his new career, Richard, said: "I've always had an interest in railways, particularly timetabling, so I consider myself very lucky to have a job that is also my hobby."

2015 Skills Demand and Delivery: The big picture



The Future of Apprenticeships at TfL

- By 2017/18 all new start apprentices will need to comply with new Employer led apprenticeship frameworks
- Currently TfL is working with industry partners on more than eight “Trailblazer” apprentice frameworks



UK Rail Industry Award Winners 2014 –
CPD Track Apprentice Development
Scheme

- **Increase the quality of apprenticeships.** An apprentice will need to demonstrate their competence through rigorous and synoptic assessment. This will focus on the end of the apprenticeship to ensure that the apprentice is ready to progress.
- **Put employers in the driving seat.** In future, apprenticeships will be based on standards designed by employers.
- **Simplify the system.** The new employer-designed standards will be short and easy to understand. They will describe the skills, knowledge and behaviours that an individual needs to be fully competent in an occupation.
- **Give employers purchasing power.** Putting control of government funding for the external training of apprentices in the hands of employers, to empower businesses to act as customers, driving up the quality and relevance of such training.

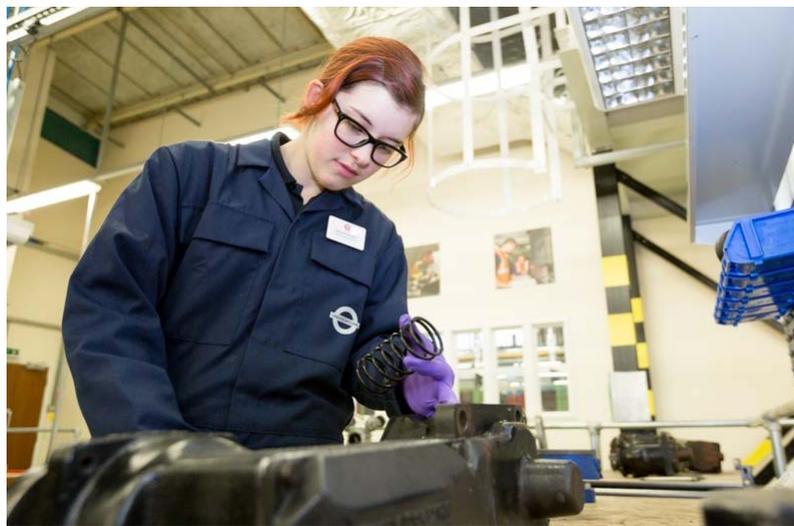
Department for Business Innovation and Skills



Our Future



Opening of the Newcastle Rail Academy



Listening to the Future

We asked our apprentices to create a 40 second clip telling young people what they did today and what they will do tomorrow

