



Transport authorities and universities – how can we work more closely together?

The Urban Transport Group (UTG) represents the seven largest city region strategic transport bodies in England, which, between them, serve over twenty million people in Greater Manchester (Transport for Greater Manchester), London (Transport for London), the Liverpool City Region (Merseytravel), the North East (North East Combined Authority), the Sheffield City Region (South Yorkshire Passenger Transport Executive), the West Midlands (Transport for West Midlands) and West Yorkshire (West Yorkshire Combined Authority).

UTG believes that fostering greater collaboration between transport authorities and academic institutions could deliver benefits for both strategic transport authorities and universities, including:

- Drawing on academic knowledge and resource to explore the challenges facing city regions;
- Supporting student research projects, which can provide additional analytical and research support to authorities, as well as broadening the horizons and experiences of students;
- Promoting public sector transport career options;
- Allowing the policy needs of transport authorities to be fed into cutting edge researchers and to influence the academic research agenda.

This briefing note outlines some of the ways in which transport authorities and universities are already collaborating. It is hoped that by presenting different models for collaboration, and the successes that these have delivered, further partnerships can be fostered.

How does each type of organisation work?

Strategic transport authorities

UTG members are locally accountable bodies delivering transport strategies and services for large urban areas. They are made up of Passenger Transport Executives (PTEs) which are responsible to Combined Authorities (or sometimes Mayoral Combined Authorities) or former PTEs which have now been absorbed within Combined Authorities, as well as Transport for London. UTG provides a guide to [UK Transport Governance here](#).



Activities that strategic transport bodies may undertake include:

- Operation of transport infrastructure such as rail, underground services and trams;
- Integrated ticketing;
- Developing and implementing strategic vision with local political leaders;
- Promoting walking and cycling;
- Dealing with air quality and congestion challenges; and
- Subsidised and tendered bus services, as well as managing bus stops, stations and interchanges.

This list is not exhaustive, and the responsibilities vary between transport authorities, but it provides an indication of the kinds of activities that are undertaken. Some transport authorities have been absorbed into wider combined authority organisations, which have additional responsibilities such as skills, housing and inclusive growth.

Funding for strategic transport authorities is derived from a number of sources including locally raised revenue (such as council taxes), revenue from operational services and central Government competition grant funding.

Universities

Academic institutions working on transport related research will have a number of primary goals, including delivering world-leading research and teaching. The box below shows an example vision and mission statement from the Institute for Transport Studies at the University of Leeds (ITS Leeds).

ITS Leeds

Vision statement - "to be recognised as the world leader in transport-related teaching and research."

Mission statement - "to advance the understanding of transport activity, operations and use and to develop skills and best practice among transport professionals and decision-makers."

Funding for academic research comes from a number of sources, including the EU, through schemes such as Horizon 2020, UK research council funding, sponsorship of projects or facilities, research consultancy and student tuition fees.

Approaches to collaboration

Student Projects

Proposing, supporting and / or supervising student projects provides an opportunity for transport authorities to influence the research agenda, gain support on projects for which capacity and / or capabilities might be missing within the organisation, and engage with potential future transport professionals. This can be through undergraduate or post graduate dissertation topics, PhD projects or student placements. For example, at ITS Leeds, 150 students each year undertake dissertations – an excellent opportunity for transport authorities to propose project titles or offer external supervision. PhD topics can be supported with data, in-kind support or more formally through industrial sponsorship via the research councils.

Partnership Arrangements

West Yorkshire Combined Authority and ITS Leeds

West Yorkshire Combined Authority (WYCA) and ITS Leeds established a memorandum of understanding (MOU) in 2015. A £200,000 Transport Research Innovation Fund was established to fund collaborative research. There are quarterly board meetings which determine projects to co-fund, or which WYCA may fund in full. Example topics include [John Nellthorp's work on land value uplift](#) which has now been taken further in the form of a larger project involving Transport for the North. The board also discusses other funding opportunities such as EU funding and Innovate UK projects.

Transport for London research partnerships

Transport for London (TfL) has research relationships and partnerships with a range of academic institutions. It has established a governance framework for these relationships that includes non-disclosure agreements covering data protection and intellectual property arrangements. It also provides a dos and don'ts guide to academic institutions they are working with.

Massachusetts Institute of Technology

TfL has a long standing research partnership with the Massachusetts Institute of Technology (MIT), in the US, to explore a range of analytical questions. One outcome of this partnership has been the development of an algorithm, known as Origin Destination Interchange (ODX), which combines bus location and ticketing data to estimate where people using TfL's bus network alight. This provides a deeper understanding of customer journeys and generates detailed trip information that can be used for network and interchange planning. ODX has been used to restructure the bus network, for example in the New Addington area, to provide a service better aligned to customer need. This demonstrates the potential mutual value in these kind of working relationships. Masters students from MIT also undertake placements



within TfL. Students spend several months at TfL conducting research for their MSc dissertations and have the opportunity to closely interact with their key stakeholders in person over an extended period, which provides an invaluable business context to their studies.

Royal College of Arts

TfL worked with service design students from the Royal College of Art (RCA) researching and developing service propositions to improve air quality. Students were invited to work on a major Mayoral priority and a complex, global urban challenge. The project provided TfL with invaluable insight on how service design could be used to address air quality across a number of areas, including insight into more sustainable delivery services, smarter school trips and less polluted street markets.

Bespoke projects

The University of Sheffield and South Yorkshire Passenger Transport Executive (SYLTE) worked together with real-time bus information to understand speed, punctuality, and actual times versus timetables. This generated information that can improve service planning and delivery. This demonstrates the potential benefits of knowledge and capacity sharing through working with universities.

Transport for West Midlands (TfWM) has been working with University College London (UCL) on a number of projects including smart card journey data analysis and the development of data dashboards. The aim of the analysis of bus data is to understand changes to the use of the bus network by older people using concessionary passes, and to provide insight for future network planning. The collaboration with UCL has allowed TfWM to draw on external capacities and capabilities that wouldn't have been available internally to the organisation. As part of this working arrangement TfWM is also supporting and sponsoring student projects.

EU Funded Research Projects

The European Union Research and Innovation programme provides around €80bn over seven years (2014-2020) through Horizon 2020. The goals of this programme are to deliver world class scientific research, reduce barriers to innovation and support the public and private sectors to work together. Transport authorities can work with partner organisations including universities to bid for funding through Horizon 2020.

Transport for Greater Manchester (TfGM) has received funding through a number of Horizon 2020 projects. One of these, [MaaS4EU](#), is a three year project which aims to address the challenges and barriers to MaaS. The project includes 17 partners from nine countries. Greater Manchester will be one of three 'Living Labs', where the technology will be trialled and evidence gathered.

Ideas and pointers for mutually beneficial ways of working between Universities and transport authorities

- Dissertation subjects
- PhD topics
- Student placements
- Collaboration on individual projects
- Wider framework agreements
- Secondments between organisations
- Providing challenges and case studies/test beds for RCUK and H2020 or EU projects

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