



Job Description

Job Title:	Transport Modeller
Directorate/Team:	Midlands Connect
Location:	Alpha Tower, Birmingham, B1 1TT (hybrid working as agreed)
Responsible to:	Transport Modelling and Appraisal Lead
Responsible for:	None
Key working relationships: (internal)	Chief Executive; Director of Corporate Services; Director of Stakeholder and Communications; Strategy and Programme Director; Programme Leads; Policy and Strategy teams; Digital/Portal owners; WMCA counterparts.
Key working relationships: (external)	East and West Midlands Local Transport Authorities; National Highways; Department for Transport; other Sub-national Transport Bodies; framework suppliers/consultancies; data providers.

Purpose of the Post

This role is intended to bridge MC's modelling and data functions: operating and enhancing key models, such as Midlands Highway Assignment Model (MiHAM) (using SATURN), running demand response where required (using DIADEM), producing appraisal-ready evidence (including TUBA inputs/interpretation), and ensuring MC's tools and datasets are governed, accessible, and aligned to business needs

Accountabilities

The Transport Modeller role will provide strategic and hands-on technical leadership to ensure Midlands Connect (MC) remains consistently evidence-led through the effective operation, maintenance, and application of the Midlands Highway Assignment Model (MiHAM) and the wider MC digital and analytical applications portfolio.

- Combine transport modelling expertise with strong data analysis capability, ensuring modelling outputs are robust, documented, reproducible, and usable across MC's strategy, policy, and programme development work.
- Lead knowledge transfer and capability building across MC, ensuring clear workflows, documentation, and quality assurance processes.
- Provide technical leadership for the internal operation and application of MC's key transport models, particularly MiHAM, including scenario definition, network changes, model runs, and reporting.
- Run and manage variable demand workflows where required to ensure scheme testing reflects behavioural response (DIADEM).
- Support appraisal-ready evidence production, including defining TUBA requirements, producing inputs, and interpreting outputs for decision-making.
- Ensure modelling and analytics outputs are robust, quality assured, well documented (assumptions, inputs, lineage) and suitable for business case and stakeholder use.
- Establish and enforce governance for MiHAM and associated datasets: version control, run logs, QA checks, reproducible workflows and standard reporting templates.
- Oversee alignment between MiHAM outputs and MC digital tools (e.g., dashboards/portal tools), ensuring consistent figures and timely updates.
- Provide technical guidance and interpreting model outputs.
- Manage targeted supplier/consultant inputs where required (e.g., specialist model development, peer review, data acquisition), including preparing briefs and monitoring delivery.
- Communicating complex modelling and data concepts clearly to both technical and non-technical audiences.
- Identify and manage technical risks (data, licensing, computing, methodology) and propose mitigations and realistic delivery plans.

Responsibilities

The role requires hands-on stewardship of diverse analytical capabilities: database design and normalisation, cloud-based infrastructure, statistical modelling, GIS and longitudinal/trend analysis, survey design and weighting, and automated scripting with version control, and work with the Modelling and Appraisal Lead to make sure analytics are available and linked to modelling activities.

Transport modelling:

- Operate MiHAM using SATURN: run base and forecast scenarios, manage model inputs/outputs, and diagnose convergence or performance issues.
- Undertake scheme and corridor testing, including defining scenario logic and network coding changes, and ensuring demand response requirements are applied appropriately.
- Run DIADEM (or manage DIADEM runs) as part of variable demand modelling where required for scheme testing; manage convergence and outputs.
- Maintain and improve model validation and documentation, including screenline/link flow checks and journey time comparisons, with clear audit trails.
- Prepare standard outputs (flows, speeds, delays and congestion indicators) and narrative reporting suitable for decision-making and business cases.

Appraisal and reporting:

- Produce, QA and document model outputs suitable for economic appraisal.
- Prepare TUBA input datasets and interpret TUBA outputs for inclusion in business cases and decision papers.
- Coordinate, specify or review wider impacts analysis, including WiTA where applicable.

Data analysis and MC Digital governance:

- Lead analysis of complex and diverse datasets to support strategy, policy, and programme decisions (e.g., trend analysis, geospatial analysis, performance monitoring).
- Use QGIS to undertake mapping, spatial analysis, and production of clear GIS outputs for reports and stakeholder engagement.
- Set and enforce standards for scripts, spreadsheets, and datasets (naming conventions, code quality, metadata, and reproducibility).
- Ensure data products are accessible and documented with appropriate metadata, definitions, and lineage; implement proportionate quality control.
- Coordinate integration of modelling outputs into MC tools (dashboards/portal applications) and support rationalisation of the applications portfolio.

Stakeholder working and delivery management

- Work collaboratively with National Highways and LTAs to align evidence, assumptions, and datasets where appropriate.
- Communicate findings through concise written outputs, presentations, and technical notes.
- Support management of MC Digital Azure services with external service providers.

Person Specification

'Who' – The person specification outlines the required experience, skills/knowledge and qualifications of **who** would fit the criteria of the role holder. The essential criteria are the levels that are necessary to carry out the main elements of the role. The desirable criteria are the levels that are not necessary to carry out the main elements of the role but would be a 'nice to have'. The person specification should be informed by what the role is doing as outlined in the job description. Essential criteria set at too high a level may exclude potential suitable candidates and, conversely, where the levels are set too low, may attract potential unsuitable candidates to apply.

Candidates/post holders will be expected to demonstrate the following:	Essential / Desirable		How Evidenced?		
	E	D	A	I	T
Experience					
Senior-level experience delivering highway transport modelling, including strategic assignment modelling and scenario testing.	x		x	x	

Advanced hands-on experience of SATURN, including network coding, matrix handling, scenario management and troubleshooting.	x		x	x	
Hands-on experience running variable demand modelling using DIADEM (or equivalent tools) and integrating outputs into assignment modelling.	x		x	x	
Experience producing appraisal-ready evidence and using TUBA (including preparing inputs and interpreting outputs).	x		x	x	
Strong experience in data analysis and evidence production, including handling multiple datasets and communicating insights clearly.	x		x	x	
Strong working proficiency with QGIS for spatial analysis and mapping outputs used in reports and decision-making.	x		x	x	
Experience applying wider impacts assessment (WiTA) and/or integrating modelling outputs into dashboards/portal applications.		x	x	x	
Skills / Knowledge	E	D	A	I	T
Advanced technical capability across transport modelling and data analysis; strong problem-solving and attention to detail.	x		x	x	
Ability to plan, prioritise and deliver to deadlines with limited supervision.	x		x	x	
Strong written and verbal communication skills for technical and non-technical audiences.	x		x	x	
Working knowledge of data management, proportional quality control, and information governance.	x		x	x	
Ability to mentor others and embed good practice through documentation and training.					
Ability to establish and operate model/data QA processes (run logs, audit trails, reproducible workflows and standard reporting templates).	x		x	x	
Experience working with external stakeholders and managing supplier/consultant inputs (briefs, QA expectations and delivery monitoring).					
Qualification / Education / Training	E	D	A	I	T
Degree (or equivalent experience) in a relevant field (e.g., transport planning/engineering, mathematics, economics, data science, geography).	x		x		
Evidence of continued professional development in transport modelling, data analytics, GIS, or related disciplines.		x	x		

Key: A = Application, I = Interview, T = Testing/Assessment

Core Expectations	
Health, Safety & Wellbeing	All employees have a duty to take reasonable care for the health, safety, and wellbeing of themselves and of other persons who may be affected by their acts or omissions at work; and co-operate with their employer so far as is necessary to enable it to successfully discharge its own responsibilities in relation to health, safety, and wellbeing.
Equality & Diversity	Promote and champion equality and diversity in all aspects of the role.
Learning & Development	Participate in and take responsibility of any learning and development required to carry out this role effectively.
Performance Management	Actively engage in the performance management process and take responsibility for managing performance outcomes.
GDPR	Ensure the reasonable and proportionate protection, processing, sharing, and storing of WMCA information in accordance with the relevant legislation, corporate policies, and in the best interests of the data subjects (Data Protection/GDPR), the WMCA, our partners, and the West Midlands, in all aspects of the role.
Adherence to Policies	Be aware of and comply with all organisation policies.

Other	There may be a requirement to work outside normal office hours on occasion, including a requirement to work within stakeholder and partner offices within the WMCA constituent area on a regular basis.
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Values

Our culture is underpinned by what we do and how we do it. Our behaviours outline the ways we need to work to deliver success, become truly inclusive, and make the organisation somewhere where everyone can give their best contribution.

Value	Competency	Behaviour
Collaborative	Team Focussed	Works as part of team, managing and leading.
	Service Driven	Customer, resident, and partner focussed.
Driven	Empowered & Accountable	Takes ownership and leads when needed.
	Performance Focused	Ambitious and going the extra mile.
Inclusive	'One Organisation' Mindset	Believe in each other's expertise.
	Open & Honest	We do what we say we are going to do.
Innovative	Forward Thinking	Embrace change and open to new possibilities.
	Problem Solving	Go for clear and simple whenever possible.

Additional Post Requirements

Politically Restricted Post		Disclosure and Barring Service (DBS)				Vetting	
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Basic <input type="checkbox"/>	Standard <input type="checkbox"/>	Enhanced <input type="checkbox"/>	None <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Job Evaluation Details

Date Evaluation Agreed	Job Family	Level/Grade	JEP Reference
23/1/26		SP38-SP42	JEP718