



Role Title	Data Engineer
Job Family	Business Intelligence
Competency Level	Principal Officer/Manager
Pay Scale	PO6
Purpose	
To strategically manage, develop, organise and control a professional service area ensuring the delivery of the service meets all Council, professional and legislative requirements. To design, build and maintain data pipelines, data models and reporting solutions that bring together data from multiple systems to support trusted and timely business intelligence. Use modern data and analytics technology, including Microsoft Fabric and Power BI, R, Python and SQL, to move the Council from siloed, fragmented datasets towards trusted, reusable data products and curated datasets. Work with BI colleagues and service leads to develop joined-up insight into service demand, performance, outcomes and resident journeys. Identify data quality and integrity issues, document technical solutions, develop and support programs of work that improve data practices across the council. Support data migration projects to connect data and move to and maintain a modern data infrastructure.	
Generic Accountabilities	End Results/Outcomes
Plan and ensure service delivery within a diverse environment. Control activities within the service area and ensure professional standards are delivered.	The service is delivered to the quality, Council, professional and legislative standards required. Integrated service development and delivery is informed by client, partner and stakeholder views, latest thinking, good practice and legislative requirements. Corporate strategies are effectively implemented within area of responsibility. Service delivers excellent customer service.
Advise Senior Managers, Members and others on issues relevant to the service area. Provide professional challenge and advice to colleagues, managers and partner organisations.	Expert professional advice, interpretation, information, support and challenge are provided to Waltham Forest and external parties on the full range of operational, legislative and strategic issues within the field of expertise. Responses to major corporate or partner initiatives / complex operational issues are managed effectively.



	Major issues are managed through to a satisfactory conclusion with final decisions being made by Head of Service/Senior Management. Feedback and complaints procedures are developed and managed. Complaints are effectively resolved.
Ensure the development and delivery of continuous improvements in all aspects of the service.	Improvements are developed and delivered effectively. Stakeholder requirements are met.
Lead, motivate and develop staff to create and maintain a highly competent and participative workforce.	Instrumental in ensuring a workforce development strategy is designed and delivered, including induction of new staff. The team is highly competent, effective, motivated and outcomes focussed. Recruitment, induction, development, performance reviews, employee relations and all HR processes and planning is completed to the required standards and timescales. Effective team meetings take place to required timescales. Regular supervision is undertaken and clear objectives set and monitored through the Council's Appraisal process.
Identify, secure, deploy and manage the resources necessary for the professional service area to meet/exceed its objectives.	Resources including, equipment, people, and systems are utilised optimally and efficiently. Budgets are planned, developed and delivered. Value for money is maximised. Financial expenditure and financial integrity are controlled to assure regulatory and Council policy compliance.
Prepare and present a full range of reports (both standard and non-standard) covering area of responsibility.	Reports are prepared, distributed / presented to the appropriate committee/ to the required standards and timescales. Evidence based recommendations are made.
Ensure the successful implementation of health and safety legislation, policies and practices.	Risks to staff and others are assessed and managed. Suitable health and safety instruction and training are provided. There is a safe working environment.



Act in accordance with all policies and procedures which apply to the job and understand the reasons for this.	All policies and procedures are complied with.
Job-specific Accountabilities	End Results/Outcomes
Engage with key stakeholders to identify, assess and document requirements for data pipelines, data models, reporting products and analytical solutions.	The data requirements of relevant services are identified, agreed and documented. Opportunities for innovation and transformation in the design and delivery of work in Business Intelligence are identified and maximised.
Design, build, test and maintain data flows, pipelines and transformation processes within Microsoft Fabric or other similar environment and related data tools.	Available technology is used effectively to maximise the value generated from the Council's data. Data processing solutions are effective, secure, reliable and scalable. Business Intelligence and analyst teams in the Council can easily access and use data to analyse and report on the activity and performance of Council services.
Develop and maintain trusted datasets, semantic models and reusable data products to support reporting, analytics and service improvement. Build, maintain and improve Power BI reports, dashboards and visualisations in collaboration with stakeholders and end users.	Comprehensive, accurate and flexible data analysis and reporting solutions are developed to meet agreed requirements. Curated data sets, models and data flows and available for use by a wider audience.
Bring together data from siloed source systems to support a better understanding of residents, households, places, service demand, resident journeys and outcomes.	Business Intelligence projects are planned, managed and delivered successfully. Specified outputs are delivered in line with agreed budgets, timescales and quality expectations. Projects are evaluated and lessons learnt are used in the planning of future initiatives.
Work with other team members and services to test new Business Intelligence solutions and transfer into 'business as usual' practice for the Council.	New Business Intelligence solutions are effectively tested to ensure they produce high-quality results. New Business Intelligence solutions are adopted effectively into 'business as usual' practice.
Develop and maintain comprehensive and accessible documentation to explain the technical details and design of new Business Intelligence solutions.	Implemented Business Intelligence solutions can be readily understood by other Business Intelligence team managers, and other Business Intelligence developers. Business Intelligence solutions can be easily maintained and updated when changes are required.



Identify and investigate data quality, data integrity and consistency issues across source systems and reporting outputs.	Creative techniques and solutions are developed and implemented to identify and resolve data quality issues. Information and data is made available and used to enable services to manage and resolve data quality issues.
Propose, recommend, design and enact solutions for managing data quality and integrity challenges within data orchestration. Support strategies to enable the correction of data within primary systems.	Data quality challenges are identified, socialised and recognised and services are well informed and are support to address issues. Data quality and integrity do not stand in the way of progress but all well recognised and understood in data products.
Identify and develop innovative solutions to improve the efficiency, effectiveness and automation of data processing and reporting.	Business Intelligence teams implement new ways of working with optimised efficiency, effectiveness and automation.
Maintain a good and up-to-date knowledge of modern data engineering including but not limited to, Microsoft Fabric, Power BI and related technologies and methods, and work with team managers to develop and assess options for change and investment.	Business Intelligence teams have a full understanding of new Business Intelligence technologies and methods. Options for change and investment are assessed and presented through business cases.
Work with team leads to develop and implement new Business Intelligence and data reporting strategies and approaches for the Business Intelligence service and the Council.	New Business Intelligence and data reporting strategies are developed based on a good understanding and assessment of relevant issues and the potential options. New strategies are planned and implemented successfully in order to achieve improvements in approaches to Business Intelligence and data reporting. Services are able to access self-service data reporting, analytics and other data products.
Work with other members of the service to transfer specialist knowledge and skills in the use of Microsoft Fabric, Power BI and modern data development tools.	Other members of the service are able to extend their knowledge and skills in the use of a range of Business Intelligence tools.
Ensure that new data solutions are developed and implemented according to the principles and requirements of the UK GDPR, Data Protection Act 2018 and	Business Intelligence solutions are secure and compliant with the principles and requirements of the Data Protection Act 2018. Risks to the security and protection of personal and sensitive data are identified and resolved.



other relevant data protection and security standards.	
Constructively engage in stewarding system design, workflow logic, data capture standards.	System design aligns with reporting and analytical needs, improves reporting confidence, financial control and visibility of resident journeys. Reporting and analytical processes are improved across data quality, statutory reporting, operational reporting, finance, forecasting and audit requirements
Steward and maintain a roadmap, prioritised backlog, team plan and reporting mechanisms for delivery, performance, risks, benefits and achievements.	Stakeholders understand priorities, progress, risks and value delivered by the team.
Engage and input to the documentation framework, key task registers, procedures, change records, risk log and business continuity arrangements for the function and wider team.	Knowledge is retained. Auditability improves. Single points of failure and continuity risks are reduced.
Line manage, coach, mentor and quality assure the work of analysts, helpdesk staff and apprentices, supporting a sustainable internal skills pipeline.	Staff are supported and developed. Team capability, resilience and quality of outputs improve.
Be self-driven regarding continuous professional development. Maintain leadership skills and relevant professional, technological and soft skills.	The post holder remains credible as a senior practitioner. Modern data processing skills are maintained and advanced. Technical skills including SQL, R, Python, DAX and other relevant languages are maintained and advanced. Skills in the relevant data platform e.g. Fabric are kept up to date and in line with the vendors roadmap. Soft skills are maintained and used appropriately, successfully managing colleagues and stakeholders. Data is handled lawfully and securely.
Plan, manage and deliver on a range of projects requiring complex analytic input, including negotiating and agreeing the most appropriate data output, initiating and planning workloads and setting delivery timescales.	Projects are planned and delivered successfully which meets the needs of the service. High quality analysis is delivered in a timely manner. Stakeholders are supported to make the best decisions regarding use of data.



Develop and improve the performance of existing data models, through the introduction of new techniques and technologies.	Legacy systems and models benefit from a modern approach.
Support and take responsibility for the preparation and analysis of data to produce highly accessible data products, including data analysis, data dashboards, research papers, and other intelligence products that deliver greater insights across council services.	Management decisions are made with data analysis as evidence. Information and analysis is articulated in a clear and easy to understand manner. Prepare high-quality information and advice about the characteristics, preferences and needs of specific service user groups.
Nature of Contacts	
Frequent contact with Heads of Service, and senior representatives from external organisations in both the public and private sector, providing expert advice, guidance and support on complex issues. Manage relationships with key stakeholders and delivery partners including negotiation of complex political issues / contractual agreements / amendments. High levels of tact, sensitivity and diplomacy is required. Ensure sensitivity, persuasiveness, and negotiation and assertiveness skills to communicate with diverse audiences in emotive circumstances. Deal with people at all levels confidently, sensitively and diplomatically Provide specialist advice, guidance and support on issues within area of responsibility; develop and maintain joint working and promote the Council position. Consult with stakeholders to identify requirements. Communicate changes in policy and working practice to contacts.	
Procedural Context	
Work within a policy framework and regulatory guidelines, applying knowledge of systems, procedures and best practice. Work to broad managerial direction, within a policy framework and regulatory guidelines, to ensure performance standards are met within a framework of policy and legislation. Control the deployment and allocation of service resources within overall corporate and legislative framework. Accountable for the performance of the service area against agreed	



objectives. Develop service plan for area of responsibility and contribute to term wider service planning. Professionally accountable for interventions within area of responsibility.

Manage complex issues within a framework of policy and procedures. Creative and innovative problem solving of complex issues, often in situations where there is ambiguity and a significant degree of judgement is required in relation to risks outside the remit of existing policy. Think and act strategically in decision making in a complex professional and political environment. .

Development of policies and procedures and strategy for own area. Lead in partnership development, working with a range of agencies and extended services to meet strategic, legislative and Government policy requirements.

The post holder may be expected to work from other locations.

The post holder will be required to work from the office at least twice a week and adhere to team anchor days (days in the office).

Post holder will oversee operational decisions.

Plans own time and co-ordinates the work of others. Plan, organise and deliver interventions and actions. Responsible for professional advice, assessments or referrals.

Exercise professional judgement in assessing stakeholder requirements, potential risk and quality assurance of service.

Provide specialist advice and support to colleagues and other stakeholders through applying knowledge of systems, procedures and best practice.

Accountable for proper use and security of sensitive data, information, resources, equipment and/or facilities within area of responsibility.

Use high levels of creativity and initiative to deal with complex issues and respond appropriately in an unpredictable work environment. May involve isolated working outside core hours.

Key Facts and Figures

Manage individuals or teams of staff.

The service delivery requirements of the Business Intelligence function requires the postholder to work a hybrid working style (Roaming and Front-facing) which will be a minimum of 2 days on site and up to 5 days on site as required by service needs and defined by line management.

Resourcing

Budget Responsibilities: None

Supervisory Responsibilities: No formal line management responsibilities, however, the role will be expected to support more junior members of the team and the quality assurance of others' team members work.

Knowledge, Skills and Experience



- Relevant demonstrable experience in a specialist business intelligence, data development, data engineering or analytics function, with evidence of specialist knowledge and responsibilities appropriate to the role.
- Excellent analytical and problem-solving skills.
- Ability to communicate effectively using a wide variety of media and methodologies, including written, oral and visual means of communication.
- Advanced understanding and experience of how data is organised and managed in complex business environments, including relational databases and data processing such as ETL (extract, transform, load).
- Advanced knowledge and experience of extracting, transforming and manipulating data using SQL or similar language
- Comprehensive experience of using Power Query, DAX or other relevant data development languages or tools and one of either Python or R is mandatory.
- Advanced knowledge and experience of complex data analysis tools and methods, including data preparation and analysis in Power BI (M queries, DAX) and the design and implementation of star schema and other modern data architectural principles for data analytics.
- Demonstrable experience of designing, building, testing and maintaining data pipelines, dataflows, datasets, semantic models and reporting solutions.
- Demonstrable experience of developing Power BI reports, dashboards and visualisations, including data modelling, DAX measures, Power Query and user-focused report design.
- Demonstrable experience of using cloud-based data and analytics platforms, preferably Microsoft Fabric, Microsoft Azure or equivalent technologies.
- Understanding of Microsoft Fabric capabilities such as Lakehouses, warehouses, dataflows, pipelines, notebooks, semantic models and integration with Power BI.
- Experience of working with data from multiple source systems and bringing siloed datasets together to support reporting, analysis and insight.
- Experience of identifying, investigating and explaining data quality, data integrity and consistency issues with impactful outcomes.
- Experience creating and maintaining documentation clearly and accurately that meets auditable requirements, best practice and supports business continuity covering for example data flows, transformation logic, data definitions, assumptions and known limitations.
- Well-developed interpersonal, persuasion and negotiating skills.
- Experience of providing information and advice to key decision makers, including service directors and senior stakeholders.
- Experience of successfully managing and delivering projects or programmes of work.
- Self-motivated, enthusiastic and driven to achieve success.
- Ability to think strategically and see the bigger picture, as well as attend to detail.
- Ability to develop creative and innovative solutions for technical and non-technical challenges.



- Understanding of data governance, information governance, cyber security, UK GDPR and the Data Protection Act 2018, with ability to design and implement data solutions that comply with these requirements.

Indicative qualifications

Essential

A bachelor's degree in maths, data science, science, engineering, finance, economics, computer science, or a related field or equivalent experience.

Evidence of Continuing Professional Development

Desirable

Professional ICT qualifications such as Microsoft Certifications in relevant areas.

The above profile is intended to describe the general nature and level of work performed by employees in this role. It is not intended to be a detailed list of all duties and responsibilities that may be required. This role profile will be supplemented and further defined by annual objectives, which will be developed in conjunction with the post holder. It will be subject to regular review and the Council reserves the right to amend or add to the accountabilities listed.