Job Description
For Non-Streamlined Positions

This form is used to provide a complete description of the specific job (or role) and defines the skills, knowledge and abilities required to undertake the specific and generic role profile.

Section A: Specific Role Profile

The specific role profile provides key information relating to the salary and working conditions e.g. location of a job, along with the current focus of the job role and a brief description of the main duties.

Role Details

Job Title:	Data Engineer	JEID	R0320
Salary Grade:	L		
Team:	Business Intelligence (Data Management Team)		
Service Area:	Commissioning Support Unit		
Primary Location:	Shire Hall		
Political Restriction	This position is not politically restricted		
Responsible to:	Business Intelligence Delivery Lead (Data Management)		
Responsible for:	Supervises Data Engineering Apprentice(s) and Placement Student(s)		

Role Purpose

- Build good working relationships with data owners, senior service managers and partners to enable the effective acquisition, sharing, management and analysis of data as the cornerstone of a strong Business Intelligence function which supports Council decision-making and assists in service improvement

- Develop, populate and manage the main corporate data repositories: the Azure DAP (Data Analytics Platform) and various databases (including PostgreSQL/PostGIS, Microsoft SQL Server and Oracle) to ensure that members, senior managers and analysts have access to reliable and consistent, single sources of the truth for spatial and non-spatial data

- Support frontline services in the extraction and manipulation of systems data and formulation of complex spatial data queries using SQL, FME, Python and system APIs (Application Programming Interfaces)

- Support the development of information dashboards, web GIS systems and other content to support service managers and senior decision-makers in the analysis of performance and delivery of Council services

- To support the Data Analytics Lead in designing and carrying out complex analyses of data using advanced techniques such as AI (artificial intelligence), machine learning and deep learning to provide deeper insights at both corporate and group levels

Role Responsibilities

1. Building relationships with senior internal and external managers to enable the effective acquisition, sharing and utilisation of data to improve Council services

2. Day-to-day management of the corporate DAP and PostGIS spatial database to ensure that data services are accurate, well maintained, secure, and readily available for analysis

3. Plan and project manage the addition of new systems data into the DAP and work closely with data owners, information governance and ICT security to ensure that data are transferred securely, in compliance with GDPR (General Data Protection Regulation)

4. Continually monitor changes to line of business systems and update overnight loading scripts to ensure that Power BI dashboards connected to the DAP continue to function and update seamlessly

5. Control access to data in the DAP for analysis purposes to ensure that privacy impact assessments are submitted and approved, where required, and to minimise the exposure risks to personalised data

6. Create and implement automated batch processes, FME workspaces, and bespoke python scripts to load spatial data, maximise PostGIS storage efficiency, and offer a suite of complex spatial analysis tools such as network routing

7. Create embeddable Web GIS content using GeoServer, Leaflet, OpenLayers and Heron MC for inclusion on the Council website and other internal and external websites

8. Create python scripts and FME workspaces to automate the collection of data via system APIs

9. Maintain a suite of Azure, Windows and Red Hat servers to keep data loading scripts and web GIS systems running smoothly

10. Produce, and keep up-to-date, full documentation for all active data stores and systems to maintain business continuity

11. Provide an advisory service to the organisation on the most effective ways to collect, store and utilise data and the creative freedom to determine appropriate data management solutions

12. Develop systems to enable on the fly analysis of real-time data to provide new insights into data and provide added value to the organisation

13. Support development of information dashboards to support service managers and senior decision-makers in the transformation and delivery of Council services

14. Work with services to design and implement improvements in the way that data is collected, created and transformed to increase automation, data accuracy and consistency, reduce the demands on resources and officer time, and improve service effectiveness and efficiency

15. Carry out occasional survey work in the field to gather spatial data for analysis in support of a range of Council services using equipment such as handheld GPS, laser scanners and drones

16. Contribute to the development of the team service plan, work programme and marketing activities

17. Work in partnership with others, both inside and outside the County Council, to ensure that data requirements are built into the specification of new projects and systems

18. Day-to-day supervision and mentoring of junior members of the Data Management Team, including Data Engineering Apprentices and temporary placement students

19. Develop and maintain technical knowledge by reading appropriate literature, attending conferences and seminars, and maintaining professional contact with other specialists through professional bodies and networks

20. Carry out any other duties allocated by the Business Intelligence Delivery Leads which are within the scope of the grade

21. Carry out duties in accordance with the Council's Information Security Standards and Human Resource Policies; compliance with the Data Protection Act, Freedom of Information Act and any other relevant legislation that directly affects service delivery

Section B: Person Specification

The person specification provides a list of essential and desirable criteria (skills and competencies) that a candidate should have in order to perform the job. Each of the criteria listed below will be measured through; the application form (A), a test / exercise (T), an interview (I), a presentation (P) or documentation (D).

ESSENTIAL	Measured by: A. Application form T. Test/exercise I. Interview P. Presentation D. Documents
Qualifications	
• Either hold a full relevant professional qualification or have significant experience in a data management or ICT systems environment at a senior level	**A, D, I**
• Evidence of recent and relevant continuing self-development	**A, D, I**
Experience	
• Demonstrable experience of working under a very high degree of pressure, including meeting unpredictable deadlines and dealing with conflicting demands	**A, I**
• Experience of supervising, managing and training staff	**A, I**
• Experience of contributing to the development of data strategies, policies and procedures	**A**
• Experience of managing complex datasets within a recognised database environment, preferably PostgreSQL/PostGIS	**I**
Competencies	
• The ability to demonstrate a high degree of complex problem-solving skills	**A, I, P**
• The ability to communicate complicated and contentious information with varied audiences in person and/or writing	**A, I, P**
• The ability to work within broad practice or guidelines using managerial discretion over a broad area of activity	**I**
• Ability to contribute actively to a successful project team and manage appropriate project workstreams	**A, I**
• The ability to pull together plans/develop solutions through the introduction of new/original thinking	**I, P**
• The ability to persuade others to adopt a course of action which is not necessarily their preferred approach	**I, P**

Skills	
● The ability to formulate complex SQL queries	**A, I**
● The ability to script routines in Python to automate data extraction, transformation and loading processes	**A, I**
● Demonstrable experience of using the Microsoft 365 suite to manipulate data and schedule processes, especially Power BI, Power Apps and Flow	**A, I**
● Experience of creating and editing complex FME workspaces to manipulate and transform data from multiple sources	**A, I**
● Web design and presentation skills, such as demonstrable experience of having used HTML, CSS and/or JavaScript to create web content	**A, I**
● Web GIS skills such as designing and implementing Leaflet or Open Layers projects, and managing WMS services using GeoServer	**A, I**
● Excellent IT skills	**A, I**

DESIRABLE	**Measured by:** A. Application form T. Test/exercise I. Interview P. Presentation D. Documents
Skills	
● Postgraduate qualification	**A, I, D**
● Analysis of unstructured data sources or 'big data' to provide insight and intelligence	**A, I**
Topic knowledge	
● Open data sources, open standards, and open source systems	**A, I**
● Challenges in acquiring, sharing and analysing data in a local public service environment	**I**

Section C: Working Conditions

The working conditions relate to those non-contractual elements of the job that may impact on the holder of the position, as well as those workplace- based responsibilities that are part of this job.
These are not contractual but provide a guide to the working conditions and the potential hazards and risks that may be faced.

Health & Safety at Work

To take responsibility for your own health, safety and wellbeing, and undertake health and safety duties and responsibilities for your role as specified within Warwickshire County Councils Health and Safety Policy, and all other relevant health and safety policies, arrangements, procedures, systems of work as specified for the post/role.

Potential Hazards & Risks

The potential significant hazard(s) and risk(s) for this job are identified below (those ticked). The purpose of recording this information on the job description is so that the health status of the potential and actual post-holders can be assessed with regard to the significant hazards and risks. These hazards and risks should be based on the appropriate activity, process and/or operation risk assessment whereby all of the significant risks are identified, recorded and appropriately controlled. The list below is therefore not an exhaustive list because it is the risk assessment that details all significant risks that could arise out of or in connection with the work activity, but any others will be identified in the 'other' section.

☐ Provision of personal care on a regular basis	☐ Driving HGV or LGV for work
☐ Regular manual handling (which includes assisting, manoeuvring, pushing and pulling) of people (including pupils) or objects	☐ Any other frequent driving or prolonged driving at work activities (e.g. long journeys driving own private vehicle or WCC vehicle for work purposes)
☐ Working at height/ using ladders on a regular/ repetitive basis	☐ Restricted postural change – prolonged sitting
☐ Lone working on a regular basis	☐ Restricted postural change – prolonged standing
☐ Night work	☐ Regular/repetitive bending/ squatting/ kneeling/crouching
☐ Rotating shift work	☐ Manual cleaning/ domestic duties
☐ Working on/ or near a road	☐ Regular work outdoors
☒ Significant use of computers (display screen equipment)	☐ Work with vulnerable children or vulnerable adults
☐ Undertaking repetitive tasks	☐ Working with challenging behaviours
☐ Continual telephone use (call centres)	☐ Regular work with skin irritants/ allergens
☐ Work requiring hearing protection (exposure to noise above action levels)	☐ Regular work with respiratory irritants/ allergens (exposure to dust, fumes, chemicals, fibres)
☐ Work requiring respirators or masks	☐ Work with vibrating tools/ machinery
☐ Work involving food handling	☐ Work with waste, refuse
☐ Potential exposure to blood or bodily fluids	☐ Face-to-face contact with members of the public
☐ Other (please specify):	