

Northumberland County Council

**JOB DESCRIPTION**

<b>Post Title:</b> Geospatial Data Engineer	<b>Director/Service/Sector</b> Finance / Information Services		<b>Office Use</b>
<b>Band:</b> 8	<b>Workplace:</b> County Hall		JE ref: 3900 HRMS ref:
<b>Responsible to:</b> Geospatial Developer	<b>Date:</b> 2021	<b>Manager Level</b>	
<b>Job Purpose:</b>  The Geospatial Engineer will be required to:  <ul style="list-style-type: none"><li>• Develop and maintain user focussed web mapping applications and geo-processing tools to meet user needs.</li><li>• Analyse customer issues and provide resolutions.</li><li>• Run demonstrations so that customers clearly understand the GIS.</li><li>• Establish the automation of data models, using ETL tools, ensuring data consistency.</li><li>• Assist in data integrity and quality assurance activities to ensure application stability.</li><li>• Stay current with latest developments in the Geospatial field recommending new technologies and techniques for application development.</li><li>• Work effectively in a team to develop and maintain high quality Geospatial solutions.</li><li>• Line-manage, coach and mentor others in the team</li></ul>			
<b>Resources</b>	Staff	Has some responsibility for the work of others and for the allocation of resources. This may include mentoring graduates, internships and apprentices	
	Finance	Day to day responsibility for budgets of 'small projects. Contribute towards business cases communicating business-value propositions.	
	Physical	Maintain and operate key corporate information systems, ensuring careful use of allocated tools and equipment.	
	Clients	Interacts with and influence on immediate colleagues.	
<b>Duties and key result areas:</b> You will;			
<b>Strategic</b> <ul style="list-style-type: none"><li>• Play an active role in developing the department and any role specific community of practice; work across the council and beyond to develop your team and engage others in it; work with others to champion cross-functional product delivery</li></ul>			
<b>Service Delivery</b> <ul style="list-style-type: none"><li>• Be involved in both the collection of geospatial information for multiple services at any one time and its storage, analysis and presentation.</li></ul>			

- Maintain the structures necessary for geospatial data storage
- Maintain tools for loading/transferring geospatial data between different systems and joining different geospatial datasets together
- Manipulate, analyse and present geospatial information by creating programs to convert geospatial information from one format to another
- Implement data flows to connect operational systems and data for analytics
- Re-engineer manual data flows to enable scaling and repeatable use
- Support the build of data streaming systems
- Write ETL scripts and code to make sure the ETL process performs optimally
- Build accessible data for analysis
- Adhere to geospatial data best-practice guidelines and agreed standards
- Operate the services you are involved with building and identify issues in production
- Strong analytical skills are key, including a thorough understanding of how to interpret customer business needs and translate them into application and operational requirements.
- Plan and lead on sets of related stories, working with other disciplines to understand what needs to be built
- Understand the geospatial applications and take responsibility for teaching this to others
- Work within multi disciplinary teams to understand user needs and design and develop complex solutions to meet these needs
- Helps to resolve problems (e.g. poor system performance) and faults (e.g. system failure), occurring in the operation of geospatial software – especially those requiring greater expertise due to the complexity of the software
- Conducts investigations of operational problems, makes proposals for improvement and implements them when appropriate. Participates in reviews of digital services and systems performance, provides advice and assists.

### **People**

- Take responsibility for commercial relationships, working closely with suppliers and partners to get best value from our contracts.
- To take part in professional development and training as identified and to attend relevant conferences/seminars/workshops as and when requested.
- Advise and assist in the supervision of less experienced colleagues in the performance of their duties, this includes graduates, internships and apprentices.

### **Financial**

- Offer technology and people savings where possible
- Take responsibility for commercial relationships, working closely with suppliers and partners to get best value from our contracts

### **Corporate**

- Undertake all duties with due regard to the provisions of health and safety regulations and legislation, Data Protection/GDPR, the Council's Equal Opportunities and Customer Care policies.
- Perform all duties in line with Council's staff values showing commitment to improving residents' lives and opportunities, demonstrating respect and fairness, taking ownership, working towards doing things better and working together across the council.

Transport requirements:	Travel to other work sites, area offices or training venues throughout the County and occasionally further a-field.
Working patterns:	Normal office hours but flexi-hours may apply, if colleagues provide cover. Some standby or call out arrangements may apply.
Working conditions:	Minimal exposure to working outdoors.

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### PERSON SPECIFICATION

<b>Post Title:</b> Geospatial Data Engineer		<b>Director/Service/Sector:</b> Finance / Information Services	Ref: 3900
<b>Essential</b>		<b>Desirable</b>	<b>Assess by</b>
<b>Qualifications and Knowledge</b>			
<ul style="list-style-type: none"> <li>Degree level or equivalent.</li> <li>Professional qualification in Geospatial Data Science, Data Visualisation, Data Science, Data Engineering or other relevant discipline.</li> <li>Detailed knowledge of Geospatial Information systems and understanding of their operation</li> <li>Actively undertaking ongoing continuous professional and personal development.</li> </ul>		<ul style="list-style-type: none"> <li>Knowledge of GDS Service Standards and their application to digital delivery in local government</li> </ul>	(a), (i)
<b>Experience</b>			
<ul style="list-style-type: none"> <li>Extensive experience in leading implementation of effective data workflows, applying sound judgement to suitability of data sources and use of ETL tools, database methodologies, scripting and automation as appropriate.</li> <li>Experience in Data management and administration/maintenance of underpinning database and web mapping systems.</li> <li>Demonstrable ability to undertake regular update and transformation of datasets in relation to large national-scale programme-related and reference datasets (e.g. OS AddressBase).</li> <li>Ensures all work adheres to programme data publication timescales, data quality,</li> <li>Experienced in the development and support of information collection and dissemination across multiple service areas.</li> <li>Identify new data sources and develop methodologies to support programme management and evidence based decision making.</li> <li>Excellent communication skills, particularly the ability to explain technical concepts to a nontechnical audience and produce clear, high quality data/analytical output in both written and verbal format.</li> <li>An active desire to provide effective customer centred services.</li> <li>Be fully accountable for own technical work and/or project/supervisory responsibilities.</li> <li>Establish own milestones and team objectives and delegates responsibilities.</li> </ul>			(a), (i)
<b>Skills and competencies</b>			

<ul style="list-style-type: none"> <li>• Proven detailed experience in the development of complex end-to-end data processes, evidencing tangible and effective business benefits and production of high quality analytical, data, or management information-related outputs</li> <li>• Proven and extensive evidence of managing, analysing and administering multiple large and complex reference datasets in a relational database environment (e.g. Oracle/Postgres/PostGIS).</li> <li>• Proven evidence in automation of data models and analytical tasks using ETL tools/methods in development of data workflows.</li> <li>• Considerable experience of working with specialised software packages such as ArcGIS online, ESRI</li> <li>• Excellent numerical skills with the ability to analyse data and statistics</li> <li>• Detailed understanding of Ordnance Survey mapping and digitising techniques</li> <li>• Understanding of the latest best practices, principles and processes relating to GIS.</li> <li>• An understanding of the difference between user needs and the desires of the user.</li> <li>• Able to prioritise and define approaches to understand the user story, guiding others in doing so.</li> <li>• Experienced in making recommendations on the best tools and methods to be used.</li> <li>• Performs a broad range of work, including developing services to meet user needs</li> <li>• Demonstrable commitment to a modern standards approach and experienced in guiding others in this approach.</li> <li>• Experienced in following best-practice guidelines and in helping to improve those guidelines</li> <li>• Knowledge efficient use of resources and integration of multiple systems and technology.</li> <li>• You can identify, locate and fix faults.</li> <li>• Experience of providing 3rd line support on geospatial products, including out of hours support as and when required.</li> <li>• Experienced in operation of the services built and identification of issues in production</li> <li>• Evidence of collaboration with the Geospatial community to ensure usability, accessibility, security, stability and capacity are embedded in the development of our citizen services.</li> <li>• Understanding of information security and ability to design solutions and services with security controls embedded, specifically engineered as mitigation against security threats as a core part of the solutions and services.</li> </ul>		(a), (i), (t)
<b>Physical, mental and emotional demands</b>		
<ul style="list-style-type: none"> <li>• Commitment to high standards of professional performance.</li> <li>• Generally works from a seated position with regular need to walk, bend or carry items.</li> <li>• Need to maintain high levels of intense general awareness and enhanced concentration across a multitude of projects or services running at the same time for lengthy periods.</li> </ul>		(a), (i)

<ul style="list-style-type: none"> <li>• Works under general supervision. Uses discretion in identifying and resolving complex problems and assignments.</li> <li>• Contact with public/clients/ partners and internal employees</li> <li>• Ability to work to strict deadlines, dealing with conflicting and high pressure demands, prioritising workload effectively</li> <li>• Independently plans own work to meet given objectives and processes</li> <li>• Exercises substantial personal responsibility and autonomy.</li> <li>• Ability to support staff, resolving conflict, motivating and managing change.</li> </ul>		
<b>Motivation</b>		
<ul style="list-style-type: none"> <li>• Draw value from collaboration with others, actively seek input from colleagues and value a multidisciplinary team over hierarchy.</li> <li>• Dependable, reliable, a good timekeeper and effective guide/mentor to subordinate staff.</li> <li>• Demonstrates and encourages high standards of honesty, integrity, openness and respect for others.</li> <li>• Facilitates collaboration between stakeholders who share common objectives.</li> <li>• Plans, schedules and monitors work to meet time and quality targets and in accordance with relevant legislation and procedures.</li> <li>• Rapidly absorbs new technical information and applies it effectively.</li> <li>• Proactive and achievement orientated</li> <li>• Able to work with minimum supervision.</li> <li>• Takes the initiative in identifying and negotiating appropriate development opportunities.</li> <li>• Demonstrates effective communication skills.</li> <li>• Contributes fully to the work of teams.</li> <li>• Plans, schedules and monitors own work (and that of others, where applicable), competently within limited deadlines and according to relevant legislation and procedures.</li> <li>• Understands and uses appropriate methods, tools and applications.</li> <li>• Appreciates the wider form of information systems and how own role relates to other roles. Understands the relevance of own area of responsibility/specialism to the employing organisation.</li> </ul>		(a), (i)
<b>Other</b>		
<ul style="list-style-type: none"> <li>• Able to work outside of normal office hours including weekends, evenings and some early mornings.</li> </ul>		

Key to assessment methods; (a) application form, (i) interview, (r) references, (t) ability tests (q) personality questionnaire (g) assessed group work, (p) presentation, (o) others e.g. case studies/visit