# Position Description

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| Position Title, Classification | Principal Hydrologist |
| Team, Business Area | Water Management Team, Water and Renewables Group |
| Role Purpose  |
|  | The Prinicpal Hydrologist provides technical delivery and management of hydrology assignments associated with the analysis of hydraulic, hydrological, meteorological, and environmental data and the design of civil infrastructure with a water focus. In particular related to hydropower and other renewal energy projects.A broad range of hydrological projects can be expected related to natural systems, storages, spillways, gauging stations, dams, weirs, hydro electric power stations, pumping stations, and renewable energy infrastructure. A core area is design flood hydrology and yield assessment.Work closely and collaboratively with other members of the team to grow the business through efficient and effective project delivery whilst maintaining a focus on quality, innovation, training and the use of new methodologies that adds value to our clients.Undertake other specific business performance and improvement activities as required including: mentoring of less experienced team members in best practice, the development of client relationships, project management, and on-going innovation in the hydrology profession. |
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| Organisational Structure |

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| Key Activities  |
|  | 1. Provide high level technical advice and expertise and utilise technical knowledge in own work activities, including:
* Critically evaluate data and data transforms with regard to their reliability and suitability for project tasks
* Manage and undertake hydrologic analyses to meet specific project requirements in areas, including:
* water management
* conceptual rainfall-runoff modelling and catchment water yields
* design flood analysis
* Analysing impact of climate change to hydrology
* inflow and flood forecasting and
* statistical analyses
* Lead project teams for a range of clients, both nationally and internationally
* Produce high quality reports
* Contribute to the on-going development and delivery of Entura’s water and renewables services and Thought Leadership
* Establish effective partnerships and communications within Entura and with our clients including taking responsibility for the timely delivery of projects within budget and to the agreed quality
* Demonstrate continuous improvement by documenting and updating work procedures (as appropriate) to ensure that subsequent activities can be completed efficiently and effectively.
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|  | 1. Undertake project and job management responsibilities, including:
* Lead and support continual improvement of the implementation and maintenance of quality assurance systems, management of audit programs and contributing to the development of work instructions and procedures
* Identify required training programs and quality gaps and recommend resolutions
* Impart technical knowledge and provide a high degree of technical guidance and support in a mentoring capacity to less experienced or qualified personnel
* Assist with the marketing of Entura, in particular the services of the Hydrology/Hydraulics sub-team and wider services of the Water Management Team
* Monitor progress against timelines and performance objectives
* Take corrective action as appropriate, particularly if a project is struggling to meet client expectations
* Provide bid management to water resource tenders.
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|  | 1. Ensure compliance with Safety and Environmental Management systems, policies and procedures, including:
* Actively contribute to improvements in safety culture and processes to ensure ongoing practical improvements in safe work practices
* Ensure that all work is carried out in accordance with environmental policies and procedures
* Where appropriate, ensure that all environmental incidents and non compliances are reported, investigated and recommendations fully implemented
* Ensure that all work is carried out in accordance with HSE policies and procedures.
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| Desired Qualifications, Experience, Knowledge and Skills  |
| Working Knowledge | * Tertiary qualifications in civil or environmental engineering, science or hydrology as required for admission as a member of Engineers Australia or equivalent
* A Chartered Engineer in Engineers Australia, or equivalent for international offices
* Minimum of 12–15 years experience in relevant hydrology (a minimum of 10 years of industry experience when combined with post-graduate studies)
* Seen by industry as a recognised expert
* Strong experience with Australian hydrological and hydraulic practices including current design guidelines and standards
* Strong hydrologic modelling and flood forecasting skills using a range of standard industry software
* Strong programming skills (preferably in R or Python) applied to hydrology projects
* Advanced statistical skills related to design flood hydrology, including flood frequency approaches, and total probability methods for Monte Carlo samping on multiple reservoirs
* Analysis of impacts of climate change and climate variability on water availability
* Use of semi-distributed or lumped conceptual rainfall-runoff models (eWater Source, RORB, HEC-HMS or similar) for event based and continuous simulation
* Familiar with model calibration approaches for both event based and cotinuous simulation hydrological models
* Use of ARCGIS/QGIS for catchment mapping and hydrologic analysis
* Ability to work independently, to formulate or analyse problems, and to deliver solutions
* Experience in analysis of hydraulic, hydrologic, meteorological, and climate data; including time series
* Demonstrated experience in a consulting environment
* Project management experience in a commercial environment
* A high standard of computing skills utilising Microsoft Office software packages.
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| Personal and relationship skills | * Strong written, verbal and interpersonal communication skills to communicate clearly and collaborate successfully with colleagues, customers, service providers and the community, including the ability to prepare technical and non-technical documentation
* Ability to lead, build, and maintain successful and collaborative internal and external relationships and negotiate effectively (e.g. with clients and service providers) to achieve the goals of the team and the organisation
* Ability to adapt to and lead and work effectively in and lead multidisciplinary teams in a professional services environment and a variety of changing situations, and to promote team work with colleagues to achieve team cohesion and targets
* Good organisational skills with the ability to work diligently and effectively under pressure to meet changes in programs and scope of work to satisfy/exceed the demands of clients
* Preparedness to act in accordance with Entura’s values and policies, including contributing to a supportive work culture and a customer-service orientation.
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| Business Acumen | * Commercial acumen and ability to maintain confidentiality
* Ability to make sound judgments to prioritise, plan, schedule, undertake and manage work commitments and conflicting priorities under minimal supervision to achieve business requirements
* Ability to lead medium-risk multi-disciplinary projects to agreed timelines, within budget, and to the agreed quality.
* Self confidence to raise issues and have the ‘hard’ discussions with clients and team members seeking positive outcomes
* Ability to exercise a high degree of autonomy in applying technical knowledge and judgement to solve complex technical and operational problems, demonstrating innovation as well as the ability to follow established processes and systems
* Ability to develop, monitor and review personal performance objectives and KPIs, taking corrective action where required, and productively participate in scheduled team discussions and meetings at which progress against KPIs is monitored and discussed
* Ability to establish and regularly maintain suitably detailed project schedules, including reviewing competing demands and allocating resources to meet priorities
* Ability to monitor financial progress of projects, including maintaining estimates of final project cost and cash flow, including comparing progress to business case and preparing regular reports.
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| Leadership Abilities | * Demonstrated ability to work as an effective team member and leader in a professional services environments, team environments, and significant project environments
* A high level of personal leadership capability, including:
	+ strong influencing, negotiation, and networking skills to gain cooperation, assistance and information from others
	+ the ability to listen, understand, and modify positions to achieve mutually acceptable outcomes
	+ a high level of ability to motivate, mentor, coach, and develop team members and achieve team cohesion and targets.
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| Other desired qualifications and experience that would be highly regarded but are not essential to the role include: | * Postgraduate specialisation in Hydrology or Water Resources
* Further tertiary qualifications and/or experience in related disciplines, such as management, or project management (equivalent to AQF Level 4)
* International project delivery
* Real time flood forecasting experience, including Deflt-FEWS and RTC-Tools by Deltares
* Analysis of hydraulics systems using 1D/2D/3D software, in particular related to hydro power and urban flooding
* Experience with 2D hydraulic flood models (TUFLOW, HEC-RAS) for rain-on-grid analysis
* Estimating and quoting experience as applied in a consulting environment.
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