



**PAPUA NEW GUINEA PUBLIC SERVICE
JOB DESCRIPTION**



1. IDENTIFICATION

AGENCY: WORKS & HIGHWAYS	SYS.POSN.NO:	REF.NO: 60ESMST02
WING: NETWORK PLANNING, DESIGN & STANDARDS	DESIGNATION/CLASSIFICATION: PRINCIPAL ENGINEER – RESEARCH & DEVELOPMENT GRADE 15	
DIVISION: ENGINEERING SERVICES & STANDARDS	LOCAL DESIGNATION: PRINCIPAL ENGINEER - RESEARCH & DEVELOPMENT	
BRANCH: MATERIALS, SCIENCE & TECHNOLOGY	REPORTING TO: ASSISTANT SECRETARY - MST GRADE 17	SYS.POS.NO: REF.NO: 60ESMST01
SECTION: RESEARCH & DEVELOPMENT	LOCATION: HEADQUARTER - BOROKO	

HISTORY OF POSITION

FILE REF:	DATE OF VARIATION	DETAILS
111-60-A00	10/12/2021	Re-number

2. PURPOSE

- 2.1 To manage the overall function of Research & Development activities within the branch and the Department
- 2.2 To formulate and undertake research activities in aspects of the geotechnical and materials engineering
- 2.3 To strategise on the need of improvement in the engineering aspects of design and construct of roads, bridges and building infrastructures

2. DIMENSIONS

The position:-

- Is responsibility for all aspects of research and development including field and laboratory supervision within the Department of Works and others.
- Manage and supervise total of three senior staff from head quarter and coordinates with staff from all DoW Regional Laboratories and provincial laboratories research and development activities
- Liaise with stakeholders and suppliers for their new engineering product and innovative technology that needs to be certified for use in PNG

4. PRINCIPLE ACCOUNTABILITIES

The position is responsible to the Assistant Secretary (Materials, Science & Technology) to coordinate and assists various Research & Development on roads and bridges product assessment and certification.

5. MAJOR DUTIES

- 5.1 Co-ordinate, direct and manage the overall activity of the Research and Development Activities within four DoW Regional Materials testing laboratories
- 5.2 Monitor, advice and report on new research activities conducted and new development findings.
- 5.3 Advice and inform Assistant Secretary (MST) & Divisional Head on all activities in terms of Research & development
- 5.3 Formulate and undertake research activities on the new road products and innovative technology within the branch and the Provinces through Provincial Laboratories.
- 5.4 Ensure all specifications and procedures are complied while undertaking research work in the laboratory and the field or during construction.
- 5.5 Liaise with product suppliers and other branches of the Department, Consultants and Contractors for the various projects in aspects of applying new road products, stabilisation and or other new road innovative technology.
- 5.6 Assist and participate in broad strategic planning and policy formulation for the Materials Science & Technology Branch.
- 5.7 Develop and assist in staff training and development
- 5.8 Responsible for the laboratories registration and standards and technical specification in aspects of various new and existing road products.
- 5.9 Other relevant duties and task as directed by the Assistant Secretary (MST)

6. NATURE AND SCOPE

6.1 WORKING RELATIONSHIP

(a)Internal

Reporting to Assistant Secretary (MST), and liaising with other staff within the branch, the Division and the Department

(b)External

Liaising with Product Suppliers, Consultants and Contractors from private sector in aspect of research & development regarding various project matters

6.2 WORKING ENVIRONMENT

Technical and Administrative

7. CONSTRAINTS FRAMEWORK AND BOUNDARIES

- **Rules /Procedures**

All procedures applied in research & development complied to all DoW Specifications and Policy & Guidelines and Various International Standards

- **Decision**

Do make decisions in the overall operation of the Research & Development in terms of road product certification and the operation of the branch

- **Recommendation**

Make recommendations on road, bridge and building infrastructures products and matters related to the activities conducted under Research & Development.

8. CHALLENGES

- Strategize and develop on new innovations and techniques to improve in various existing construction technologies.
- Create new procedure and standards as when is required
- Set new bench mark on new research & development technologies
- Contribute to identifying and acquiring the skills and knowledge to perform tasks to produce the desired output. Ensure that all supervised staff are trained on the operation of all specific research work and or other tools relevant to efficiently undertaking their roles and responsibilities
- Public Service General Orders require all public sector employees to have a career plan in place – their respective departments and training should be linked to career paths. Contribute to the alignment of personal goals with divisional goals, in open communication and cooperation with management, and contribute to a work environment appropriate for the work and conducive to shared employee well-being.
- Contribute to identifying and acquiring the skills and knowledge to perform tasks to produce the desired output. Ensure that all staff within R&D section and the branch are well equipped and vested with skills, knowledge and resources to effectively and efficiently undertaking their roles and responsibilities.

9. QUALIFICATIONS, EXPERIENCES AND SKILLS

(a) Qualifications

Appropriate recognized University Degree with Post Graduate qualification in Civil / Geotechnical / Materials Engineering, geology and chemical engineering background are desirable though not essential and be a Registered Member to Institute of Engineers.

(b) Values

Demonstrate and practice high levels of integrity, honesty, accountability, respect and wisdom and accept responsibility for one's own actions at all times.

(c) Knowledge

Sound knowledge in all fields of engineering & research work with significant knowledge in geotechnical engineering and materials engineering is essential.

(d) Skills

Must be capable in administration, management and supervision. A high level of verbal and written communication skills is essential and posses problem solving skills. Must be computer literate

- **Leadership:** Lead and mobilise team with personal drive, commitment and resilience. Act as a positive role model on ethical behavior for staff and demonstrate personal qualities of honesty, fairness, and professionalism. Provide strategic direction and inspire a sense of purpose and direction in the work area. Demonstrate insight and vision in providing solutions for a range of problems and ability to effectively implement change and innovation. Demonstrate the ability to motivate and lead diverse multi-stream teams to success. Be able to mentor senior staff and provide a positive learning environment to build staff capability and commitment and institutional strengthening.
- **Communications:** Highly effective written and oral communication, negotiation, persuasion and representation skills. Communicate with influence and civil awareness. Liaise and negotiate effectively internally and externally on complex matters. Demonstrated experience in leading and facilitating internal and external dialogues at a senior level and influencing group conclusions resulting in positive outcomes. Confident personal and well developed presentation skills.
- **Stakeholder relationships:** Demonstrated ability to build and sustain effective collaborative relationships with a network of key people, internally and externally. Deliver clear and effective advice to stakeholders. Represent and promote.
- **Workload and time management:** Contribute to identifying team priorities, and share or allocate specific tasks within the team to ensure competing deadlines are met. Manage own tasks within this environment. Promote effective and efficient service delivery.

(e) Work Experience

A minimum of seven (7) years practical experience in Research works, Geotechnical and Materials Engineering and Construction Materials Testing Laboratory is preferable.

- A substantial knowledge of relevant work experience in administration and technical supervision. Demonstrate knowledge on Scientific Researching work and understanding laboratory materials (Soils, Rocks/aggregate and concrete) testing, field investigation and reporting.
- A relative experience in team building and teamwork and possess some knowledge to work well with colleagues and effectively managing team in a workforce is more essential