



Form OD2.7

**PAPUA NEW GUINEA PUBLIC SERVICE
JOB DESCRIPTION**

1. IDENTIFICATION

VACANT

AGENCY: DEPT OF WORKS	SYS.POSN.NO:	REF.NO: 60ESMST11	
WING: NETWORK PLANNING, DESIGN & STANDARDS	DESIGNATION/CLASSIFICATION: MATERIALS ENGINEER - ROADS & BRIDGES GRADE 13		
DIVISION: ENGINEERING SERV. & STANDARDS	LOCAL DESIGNATION: MATERIALS ENGINEER – ROADS & BRIDGES		
BRANCH: MATERIALS SCIENCE & TECHNOLOGY	REPORTING TO: PRINCIPAL ENGINEER – RESEARCH & DEVLEOPMENT GRADE 15	SYS.POS.NO:	REF.NO: 60ESMST02
SECTION: RESEARCH & DEVELOPMENT	LOCATION: HEADQUARTER - BOROKO		

HISTORY OF POSITION

FILE REF:	DATE OF VARIATION	DETAILS
111-60-A00	10/12/2021	RE-NO, RE-DESIGN

2. PURPOSE

- 2.1 To provide and ensure specified contract specification and standards are fully applied in all road and bridge projects.
- 2.2 To ensure that specified construction materials quality is maintained during construction phase of roads and bridges project.

3.DIMENSIONS

The Position is

- To manage all activities of Road & Bridge Technology within the Material, Science Technology Branch.
- Be able to supervise and manage road and bridge projects in terms of Quality Assurance in line with Design, Construction and upgrade of Roads by working with Roads and Bridge Engineers in Highway Engineering Branch
- To conduct audit inspection and assessments of roads and bridges and its structures after completion of the project, preparation of audit check list documents and reports on health and safety risk assessment including economic cost benefit analysis by liaising with Asset Management and other Branch within the Division

4. PRINCIPLE ACCOUNTABILITIES

The position is responsible to the Principal Engineer (R&D) and Assistant Secretary (MST), liaising with Highway Engineering Branch for road and bridge design works and operations with construction works and preparation of audit checklist documents, risk assessments and cost benefit analysis by

liaising with Asset Management branch within the Department and other Government departments, Statutory Agents and Private Sectors

5. MAJOR DUTIES

- 5.1 Plan, Program and Conduct routine road and bridge inspection & survey by working with Asset Management Branch and Highway Engineering Branch in terms of designing.
- 5.2 Prepare documents, reports, health and safety risk assessments and cost benefit analysis on various new roads and bridges infrastructure.
- 5.3 Conduct research work on new and existing road and bridge products for improvement purposes
- 5.4 Plan, program and execute Geotechnical Investigation on road and bridge projects
- 5.5 Conduct periodically assessment and monitoring of performance on various new application of road and bridge products and provide report
- 5.6 Ensure DoW Road Design manual and other specification and standards are fully complied in all stages of road and bridges construction projects
- 5.7 Liaise with Asset Management and Highway Engineering Branch in maintaining records and data base inventory of road and bridges network for the branch.
- 5.8 Involve in reviewing of various documents and technical reports if and when required or directed by Assistant Secretary (MST) or Principle Engineer (R&D) or Principle Engineer (MTS)
- 5.9 Provide effective workforce in building and driving the team within the Materials, Science & Technology Branch to successfully accomplishing various activities
- 5.10 Attend to all training as appropriate to the role is and when required and mentoring and provide training for new recruits and graduates
- 5.11 Other related duties and tasks as directed by Principal Engineer (Res & Dev) through Assistant Secretary (RCTS)

6. NATURE AND SCOPE

6.1 WORKING RELATIONSHIP

(a)Internal

Principal Engineer - Research & Development

(b)External

Suppliers, Consultants and Contractors for research and project matters

6.2 WORKING ENVIRONMENT

Technical & Administrative

7. CONSTRAINTS FRAMEWORK AND BOUNDARIES

- **Rules /Procedures**
 - All works conducted complied with all required DoW Standards and Manuals are complied always with respect to other International Standards
- **Decision**
 - Do make decisions in the function of the Research & Development within the Branch
- **Recommendations**
 - Make recommendations on matters related to Research & development activities and the operation of the Branch.

8. CHALLENGES

- Formulating and strategizing on new priority areas to deliver quality outcome in all road and bridges projects.
- Update of all road network data base and bridge data for the branch
- Promote quality and safety procedures are fully implemented and maintained in all stages of design, construction and the life span of the Road and bridges
- Team building and service improvement within the branch and the Division

9. QUALIFICATIONS, EXPERIENCES AND SKILLS

(a) Qualifications

Bachelors degree in Civil and or Materials engineering background are preferable and be a Registered Member to Institute of Engineers is desirable though not essential

(b) Knowledge

- Some knowledge in the field of materials engineering and research work. Have knowledge and ability to understand technical standards and technical specification is essential
- **Legislative knowledge:** General knowledge about the range of Acts, laws and policies governing the work of the Department of Works.

(c) Skills

- Willingness to seek guidance, advice and an ability to collaborate in a team environment and manage task and projects without supervision in meeting deadlines.
- **Leadership:** Lead with personal drive, commitment and resilience. Act as a positive role model on ethical behaviour for staff and demonstrate personal qualities of honesty, fairness, and professionalism.
- **Communications:** Highly effective written and oral communication, negotiation, persuasion and representation skills is necessary
- **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 geotechnical services and ensure proactive engagement with all stakeholders

- **Values:** Demonstrate and practice high levels of integrity, honesty, accountability, respect and wisdom and accept responsibility for one's own actions at all times.
- **Computing:** Demonstrate substantial proficiency in the use of email and internet, in the application of software such as MS Word and MS Excel to perform complex tasks, and in the creation of presentations using MS PowerPoint

(d) Work Experience

- Minimum of five (5) years working in the field of Road and Bridge Design and Construction and geotechnical engineering and materials engineering and research work and or similar are also required.
- Have sound experience in teamwork and teambuilding activities with effective mentoring and training is more preferable
- Must be a positive role model on ethical behaviour for staff and demonstrate personal qualities of honesty, fairness and professionalism is desirable.