



PAPUA NEW GUINEA PUBLIC SERVICE

JOB DESCRIPTION – SENIOR CIVIL ENGINEER

Form OD2.7

**1. IDENTIFICATION**

AGENCY: <i>Works and Highways</i>	SYS. POSN. NO:	REF. NO: 60HMSM07	
WING <i>Highways Management</i>	DESIGNATION/CLASSIFICATION: <i>Senior Civil Engineer – Grade 15</i>		
DIVISION:	LOCAL DESIGNATION: <i>Senior Civil Engineer – GIS and Thematic Mapping Management,</i>		
BRANCH:	REPORTING TO: <i>Unit Manager</i>	SYS. POS. NO:	REF. NO: 60HMSM04
SECTION: <i>GIS and Thematic Mapping Measurement</i>	LOCATION: <i>Headquarters - Boroko</i>		

HISTORY OF POSITION

FILE REF.	DATE OF VARIATION	DETAILS
111-60-A00	10/12/2021	<i>Recommendation: Re-no, Reclassify Redesign</i>

2. PURPOSE

GIS project managers are the people who lead a team in analyzing geographic data for a specific purpose, such as city planning or disaster relief. GIS project managers need a sound knowledge of geography, as well as the software employed for their projects.

Geographic information system (GIS) project managers administer projects involving the collection or utilization of geographic data. This job typically requires a relevant bachelor's degree as well as planning and leadership skills and specific technological expertise. Additionally, employers may prefer candidates who have years of experience in the field.

3. DIMENSIONS

- 3.1 High-level tactics that provide focus toward the end point of the project and the basis for metrics employed by upper management to assess the overall progress of the project*
- 3.2 The tactical plan is typically prepared by onsite technical program staff with extensive institutional knowledge of the site. External resources are acquired for niche expertise as needed. The plan provides key project direction, but can be updated by the project team.*
- 3.3 A GIS project manager often works for a cartographic or geographic survey firm, gathering data relating to urban planning, natural resource exploration, security, emergency planning and GPS systems. GIS jobs often involve a good deal of travel and outdoor fieldwork.*

4. PRINCIPLE ACCOUNTABILITIES

Use up-to-date cartographic/GIS standards and practices to prepare geologic maps for publication. Prepare illustrations, graphs, and other layouts as needed. Review and evaluate maps produced by UGS staff for cartographic quality, technical accuracy, visual appeal, and meeting standards.

- 4.1 Manages, plans, assigns, and reviews analysts and developers' work on GIS projects. Oversees the production of reports, maps, applications, and visualization for internal stakeholders.*

- 4.2. Ensures proper maintenance, documentation, and cleaning of GIS data. Develops methods to leverage GIS data for new applications.
- 4.3. Typically reports to the First Assistant Secretary and Executive Director when required
- 4.4. Manages subordinate staff in the day-to-day performance of their jobs.
- 4.5. Ensures that project/department milestones/goals are met and adhering to approved budgets
- 4.6. *Ensure project tactical plans define the overall goals for each project, in alignment with the high-level objectives, that essentially functioned as the Request for Proposal (RFP). Project teams produced a scope, schedule, and budget for funding approval in response to the tactical plan.*
- 4.7. *Ensure Engineering surveys, inspections, investigations, feasibility studies are carried out in accordance with the standard specifications for high-level data for project planning.*

5. MAJOR DUTIES

- 5.1 *Manage and direct all functions of GIS & Thematic Mapping Branch. Typically expected to have not just technical knowledge regarding GIS systems, but also skills and experience as a team leader and business administrator. Delegating responsibilities, communicating with staff, technical consulting with clients, allocating resources, budgeting and tracking logistics of GIS projects, as well as working directly with a GIS.*
 - 5.1.1 *Provide Network Data and convert from various sources and attach engineering intelligence to network data and improve its engineering integrity.*
 - 5.1.2 *Simplify and enforce disciplined capturing of all relevant properties of network components so they can be used for maintenance, analysis and asset management purposes.*
 - 5.1.3 *Develop and include new plans/programs for the development of an integrated Road Network for Papua New Guinea.*
 - 5.1.4 *Monitor, advice and provide reports on roads engaged by the National Forest Authority, Department of Mining and Petroleum, Department Agriculture and Livestock, etc. to comply with Department of Works and Implementation Specifications and Standards.*

6. NATURE AND SCOPE

The position is within the senior management level of the organization and reports directly to the divisional head (FAS – HSMD) as depicted on the structural framework.

6.1 WORKING RELATIONSHIP

6.1.1 Internal

Reporting to First Assistant Secretary (Highways Systems Management and Development Division) and Executive Director (Highways Management) as well as liaising with other Branches and Divisions within Department of Works & Highways (DoW&H).

6.1.2 External

Liaise with relevant Government Departments, Authorities, Agencies, Consultants, Members of Parliament and General Public relating to matters concerning Department of Works & Implementation design standards and specifications, as well as documentation and construction of various roads and bridge infrastructures in PNG land transport networks.

6.2 WORK ENVIRONMENT

Management of all Engineering, Technical Design Specifications and Standards on behalf of Department of Works & Highways (DoW&H) for the National Government of Papua New

Guinea on Road Transport (Roads and Bridges) Network for a safe and easy accessibility for the people of Papua New Guinea.

7. CONSTRAINTS FRAMEWORK AND BOUNDARIES

7.1 Rules/procedures

7.1.1 *The National Government through Department of Transport's National Transport Strategy Policy Guidelines for Road Transport Networks for upgrading and rehabilitation works has identified the sixteen (16) priority road network sections including the missing links in the Medium-Term Development Programs (MTDP).*

7.1.2 *Department of Works & Highways (DoW&H) shall be confined and limited to meet these policy guidelines as stated in the MTDP as a result when implementing these development projects.*

7.1.3 *All engineering design and documentation shall be focused on these road networks within the country subject to annual development budget funding as a result of these policy guidelines.*

7.2 Decision

7.2.1 *The Government through Department of Transport has the mandated role and obligation to decide and include other relevant sections of road network throughout the country into the MTDP for implementing that will open accessibility to the rural population for economic and social developments.*

7.2.2 *This decision will not only alleviate poverty but also improve living conditions of the rural population through delivery of services such as health, education and other social improvements as well as agricultural developments.*

7.3 Recommendations

7.3.1 *It is recommended that other policy guide lines be developed to include other missing sections of road network and funding to be made available through the Department National Planning and Monitoring.*

8. CHALLENGES

8.1. *The current challenges with respect to this position are non-recruitment of experience engineers and technicians to support and perform the specific tasks and duties involved in order to produce the required outcomes and meet deadlines on the various road and bridge projects involved.*

8.2. *Various road and bridge projects out-sourced to the consultants are done without proper design briefs and terms of references (TOR) to guide these consultants to comply with Department of Works Design Standards and Specifications.*

9. QUALIFICATIONS, EXPERIENCES AND SKILLS

9.1. Qualifications

9.1.1. *Appropriate University Bachelor Degree in Civil Engineering from a recognized university.*

9.1.2. *Registered member of Institute of Engineers Papua New Guinea (IEPNG)*

9.2. Knowledge

9.2.1. *Significant experience in design and documentation of variety of road projects or bridge projects ranging from rural to urban applications.*

9.2.2. *Sound construction knowledge and experience in compliance to the Department of Works & Implementation Specifications and standards.*

9.2.3. Sound management and administrative knowledge in financial, personnel, resources and project planning are essential at this management level.

9.3. Skills

9.3.1. Significant experience in various design and CAD software applications used to produce relevant roads or bridge design projects in compliance to Department of Works & Implementation design standards and specifications.

9.3.2. Data Acquisition & Conversion

9.3.3. Network Data Analysis & Evaluation.

9.4. Experience

9.4.1. Minimum 12 years extensive experience in all aspects of Civil Engineering works in design and documentation phases on variety of roads or bridge projects is essential at this level to guide and implement the design projects involved.