

Title	Senior Hydrologist/Meteorologist
Vacancy Number	MoPW/SRTAP/PSC/1400-64
Ministry	Ministry of Public Works
Organization	Program for Service life enhancement and construction cost reduction of roads (PSC)
Project	Sustainable Reform & Technical Assistance Project
Duty Station	Kabul
Duration	1 year
No of Jobs	1
Nationality	Afghan
Sex	Male/Female
Salary Range	NTA Salary Scale (Grade B2 – B5)
Announcing Date	22 May 2021
Closing Date	03 June 2021
Job Type	Engineering
Shift	Full Time (chances of homebased or part time contract is also available, based on negociation)
Job Status	Sourcing
Experience	10+ years of relevant experience

**Background:**

The Ministry of Public Works (MoPW) is responsible for the planning, design, procurement, implementation, monitoring, and maintenance of the various transportation infrastructure projects such as roads, bridges, and its relevant drainage and retaining/protection structures in the government of the Islamic Republic of Afghanistan.

On a mission to reduce project costs and extend the service life of road infrastructures in Afghanistan, the MoPW aims to embark on an initiative to *develop a web-based application/tool for bitumen grade selection* that would be accessible by the user through a web browser with an active network connection. The application will allow pavement engineers to select the most suitable, cost-effective, and less restrictive penetration grade of bitumen for a particular site based on the MoPW standards. The grade selection will primarily depend upon the levels of traffic loading and speed on the site, actual high and low pavement/air temperatures, and regional climatic conditions. The use of such an application will ensure the delivery of quality, cost-effective, reliable, safe, and durable asphalt road projects in Afghanistan. The developed web app will be primarily owned/administered by the MoPW and made available for online users.

The functioning manner of the web app will be such that the user would simply enter the essential input parameters: coordinates of the location, low and high annual air temperatures, traffic loading in ESAL, and design traffic speed. Automatic adjustments of penetration grade (grade changing) for traffic and temperature variations would take place and the calculated penetration grade will be displayed.

The ministry intends to form a team of highly experienced experts with diverse affiliations and extensive partnerships with industry and government organizations that will closely collaborate to accomplish the above goal effectively and within the specified timeframe.

### **Scope of Work/Job Summary:**

The MoPW intends to engage a highly qualified *Senior Hydrologist/Meteorologist* with extensive experience in collecting, analyzing, processing, and interpreting the meteorological/hydrological data for various engineering purposes, as well as exhibit a thorough understanding of pavement materials and current specifications.

The incumbent will work under the direct supervision, guidance, and direction of the International SME and leadership of the Team Leader/ Project Manager and will be responsible for providing necessary expertise in his/her capacity for developing the bitumen grade selection application/tool. By utilizing qualifications and specialization in the area of pavement materials, the position holder will make sure that the electronically and manually collected climate data for application/tool development is genuine and accurate and that the final product is as per the desired requirements of the MoPW. The candidate will also contribute to delivering workshops and training sessions to the users of the application/tool and will provide capacity developing interventions to the MoPW staff to enable them to manage the meteorological/hydrological data for similar purposes.

The selected candidate is expected to remain active through all phases of the application/tool development and work in close coordination with the senior management in the MoPW. The role must directly report to the Project Manager/Team Leader.

### **Duties & Responsibilities:**

The duties and responsibilities of the Hydrologist cum Meteorologist will include but not be limited to:

- Work in close collaboration with team members to achieve the shared objective of designing a sophisticated application/tool for the selection of bitumen penetration grade;
- Acquire, develop, and incorporate digital meteorological and temperature contour maps into the application/tool;
- Define and propose appropriate weather-related input parameters to be considered for the calculation and selection of suitable bitumen grade;
- Source, collect, analyze, process and interpret the meteorological/hydrological data needed for the application/tool development;
- Give necessary instructions to the team members, especially to the data analyst on handling the acquired climatic data for application/tool development;
- Communicate with the Afghanistan Meteorological Department (AMD), weather stations, and other relevant entities to collect available monthly/yearly climatic data;
- Calculate and determine average, maximum, and minimum air temperatures and predict the relevant pavement temperatures;
- Make sure to refer to reliable sources when collecting climate data;
- Willing to travel all over Afghanistan for data collection;

- Inspect the process of application/tool development and ensure the quality;
- Ensure that the application allows the use of AMD climatic data for any project located in the country;
- Ensure that the developed application/tool is user-friendly and easy to use;
- Ensure that the developed application/tool is introduced to pavement engineers and stakeholders throughout the country via various means: delivery of workshops, dissemination of User Guides, etc.;
- Ensure that the final product functions precisely displaying outputs without any technical/engineering fault;
- Ensure that the binder selection procedures are practical and aligned with the country's needs and the MoPW and International Standards;
- The familiarity of the candidate with the geography, climatic and environmental conditions and local construction materials are highly desirable;
- Participate in technical meetings with stakeholders and team members on regular basis;
- Provide workshops on climatic data collection, analysis, and interpretation for the capacity building purpose of regional and provincial engineers;
- Demonstrate a good understanding of pavement materials with thorough knowledge of the relevant MoPW/International standards;
- Analyze and resolve technical issues and propose optimum solutions promptly; and
- Undertake other tasks related to the design/development of the application/tool either required or assigned by the senior management.

#### **Skills & Competencies:**

- Know bituminous materials' engineering behavior, their production, and deterioration manner under the combined effects of varying traffic and climatic conditions;
- Experienced in data collection, analyzing, interpretation, and modeling;
- Have a good understanding of penetration grading and viscosity grading systems of asphalt binder and know the bitumen grade selection criteria;
- Able to perform temperature adjustments to the binder grade selection;
- Hands-on experience with MATLAB, ArcGIS, and preferably able to use tools/software for the binder grade selection;
- Fluency in spoken and written English language and excellent communication skills;
- Able to coordinate with co-workers and meet deadlines;
- Highly motivated and enthusiastic team player with a strong desire to succeed;
- Able to manage conflicting priorities; and
- Demonstrate leadership in handling and working with multidisciplinary teams.

#### **Job Requirements:**

- A bachelor's degree holder in Civil engineering or a master's degree in Civil / Hydraulic Engineering (preferred) with specialization in climatic/hydrological data management. Advanced studies; preferably a Ph.D. in the field will be an advantage;
- Having at least **10 years** of related experience within reputable organizations mainly focused on sourcing, collecting, analyzing, and interpreting climatic/hydrological data for various engineering purposes;
- Acquaintance with the regionally and internationally used software/programs, especially, AASHTO/LTPP developed online tools, serving the purpose of bitumen grade selection is advantageous;

- A Candidate with a proven employment record in a similar role within the Indian Road Congress (IRC), Indian Ministry of Road Transportation and Highways (MoRTH), or other regional/international highway authorities is highly preferred;
- Proven organizational and problem-solving skills;
- Excellent verbal and written presentation skills;
- Able to travel to remote areas all over Afghanistan, collect required data, and work as part of the team.

#### **Required Documents:**

- CV with a cover letter for the relevant position;
- Copy of verified degree by the Ministry of Higher Education;
- Copy of verified Afghan ID Card (Tazkera) or Passport;
- Copy of verified last Posting Contract; and
- Copy of other relevant documents that support the application.

#### **Submission Guideline:**

Interested candidates are requested to forward their applications, detailed CV and other required documents to [jobs.mopw@yahoo.com](mailto:jobs.mopw@yahoo.com) indicate the vacancy number (**MoPW/SRTAP/PSC/1400-64**) and the post title (**Senior Hydrologist/Meteorologist**) in the subject line when applying by email to the Human Resource Unit – Sustainable Reform and Technical Assistance Project of Ministry of Public Works (MoPW) at Kabul, Afghanistan.

**Address:** SRTAP Office, Railway Building, Kabul-Jalalabad Rd., opposite KMTC, MoPW, Kabul, Afghanistan.

Note: Only short-listed candidates will be contacted.