**JAVED BARI, Ph.D., P.E.**
**Dean,** School of Engineering and Physical Sciences (SEPS), &
**Professor,** Department of Civil and Environmental Engineering (CEE)
North South University
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## SUMMARY OF QUALIFICATIONS

- Obtained Ph.D. and M.S. degrees in Civil Engineering (Transportation) from Arizona State University, USA, and B.S. degree (Civil Engineering) from BUET, Bangladesh.
- Have more than 25 years' professional/industrial/research experience in the infrastructure sector especially in the Transport sector, obtained in both South Asia (14+ years in Bangladesh) and North America (11 years in USA).
- Registered Professional Civil Engineer (P.E.) in USA with an active license.
- Worked as a Short-Term Consultant (Monitoring, Evaluation and Technical STC) of the Transport & ICT Team of GTI06 Unit of the World Bank, Dhaka from July 2014 to October 2017.
- Worked as a Consultant of the USAID in 2019.
- Reputed U.S. South-West Regional as well as Bangladeshi expert in the field of Highway Materials Characterization, Road Design, Road Safety, Road Maintenance and Management, and Infrastructure Development.
- In Bangladesh, the only first-hand expert on the new AASHTO Mechanistic-Empirical Pavement Design Guide (MEPDG) as well as first-hand expert of the PG (Performance Grading) system. I was a key researcher in the team of researchers that developed this guide and its asphalt binder and mixture models at Arizona State University, USA.
- In Bangladesh, worked for 6 years in all three major Government civil engineering departments; namely LGED (Local Govt. Engineering Dept.), PWD (Public Works Dept.) and RHD (Roads & Highways Dept.).
- Possess sound knowledge of the administrative, political and development issues of Bangladesh.
- Excellent skills in planning, organizing, advanced research, English writing and communication, advance computer use, and report preparation/review.
- Have many publications in prestigious international journals such as ASCE, TRB, AAPT, etc.
- Life Fellow of Institute of Engineers, Bangladesh (IEB) and Member of American Society of Civil Engineers (ASCE).

## EDUCATION

**Ph.D.** in Civil (Transportation) Engineering: *Arizona State University (ASU), Tempe, Arizona, USA. December 2005.*
**Master of Science (M.S.)** in Civil (Transportation) Engineering: *Arizona State University, Tempe, Arizona, USA. May 2001.*
**Bachelor of Science (B.S.)** in Civil Engineering: *Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh. November 1993.*

## PROFESSIONAL REGISTRATION

- Licensed Professional Engineer (P.E.) registered in USA (have an active license).
- Life Fellow of Institute of Engineers, Bangladesh (IEB).

## PROFESSIONAL AFFILIATIONS

- Member of American Society of Civil Engineers (ASCE), USA.
- Member of Institution of Transportation Engineers (ITE), USA.
- Life Fellow of Institute of Engineers, Bangladesh (IEB).

## PROFESSIONAL EXPERIENCES

**1. September 1, 2013 to Present**

***Professor,*** Department of Civil and Environmental Engineering (CEE), North South University (NSU), Dhaka, Bangladesh. www.northsouth.edu

- As **Dean** of the School of Engineering and Physical Sciences (SEPS), manage the portfolio of SEPS that includes four departments, namely Electrical and Computer Engineering (ECE), Civil and Environmental Engineering (CEE), Architecture (DA), Math & Physics DMP).
- Teach/conduct/manage classes, labs & exams, and supervise thesis and capstone design students.
- Managed the CEE department as the **Chair** (2015-2017).
- As the **Member of NSU Syndicate**, represent all Deans (2015-2017 and 2019-Present).
- Actively conducting research works on roadway and pavement design, road materials characterization, road safety and transportation management.

**2. January 3, 2011 to August 31, 2013**

***Professor,*** Department Civil Engineering, and ***Director,*** South Asian Disaster Management Center, IUBAT–International University of Business Agriculture and Technology, 4 Embankment Drive Road, Sector 10, Uttara Model Town, Dhaka, Bangladesh. www.iubat.edu

- Taught civil/transportation engineering and project management courses, and mentored students.
- Managed the portfolio of Transportation and Disaster Management research projects of the "South Asian Disaster Management Center (SADMC)".

**3. June 29, 2009 to December 31, 2010**

***Faculty (Part Time)***, Department of Civil, Environmental and Sustainable Engineering (CESE), Arizona State University (ASU), Tempe, Arizona, USA. www.asu.edu

- Taught Civil Engineering courses, mentored students, and managed materials lab.

**4. May 7, 2005 to December 27, 2010**

***Senior Transportation Engineer (Team Leader),*** Pavement Design Section, Materials Group, Arizona Department of Transportation (ADOT), Phoenix, Arizona, USA. www.azdot.gov

- As road safety engineer of the Highway Safety Unit, worked on identifying black spots and providing engineering solutions.
- Successfully managed the portfolio of more than half of the pavement design and maintenance projects of Arizona State (for five out of total nine counties of Arizona).
- Managed numerous transport projects starting from the project development phase, including the bid management, up to the closeout.

- Provided flexible and rigid pavement structural and materials design services, and review design concept reports (DCR), geotechnical design report, cost estimates, plans and bid documents of federal, state, local government and privately funded highway projects throughout the State.
- Reviewed technical reports, plans and specifications prepared by team members and consultants.
- Worked as the key ADOT person in incorporating in Arizona the globally known new AASHTO Mechanistic-Empirical Pavement Design Guide (MEPDG).

**5. January 15, 2000 to May 6, 2005**
***Senior Research Specialist,*** Department of Civil, Environmental and Sustainable Engineering (CESE), Arizona State University (ASU), Tempe, Arizona, USA. www.asu.edu
- Conducted most advanced independent tests and researches on transportation engineering topics.
- Worked as in-charge of the advanced asphalt binder lab, asphalt concrete mix testing lab and the undergraduate civil engineering materials testing lab.
- Worked as an important transportation researcher of the team that developed the globally known new AASHTO Mechanistic Empirical Pavement Design Guide (MEPDG).
- Developed advanced models and design methodologies for asphalt binders and mixes some of which have been included into the new AASHTO MEPDG.

**6. January 19, 1999 to December 26, 2002**
***Assistant Engineer (BCS RHD)***, Road Design & Safety Circle (formerly Roads and Environment Circle), Roads and Highways Department (RHD), Bangladesh Government. "Sarak Bhaban", Ramna, Dhaka 1000, Bangladesh. www.rhd.gov.bd
- Analyzed accident data and reviewed traffic safety reports of various projects using MAAP and other softwares.
- Actively took part in the review of RHD Codes and the development of national guidelines for road design, signs/marking, safety, environment and settlement
- Supervised and inspected civil construction and maintenance works of roads, bridges, drainage structures and traffic control systems.

**7. February 28, 1998 to January 18, 1999**
***Assistant Engineer (BCS PWD),*** Survey Division, Public Works Department (PWD), Bangladesh Government. "Purto Bhaban", Ramna, Dhaka 1000, Bangladesh. www.pwd.gov.bd
- Supervised engineering survey of different civil engineering projects across the country.
- Successfully completed a four-month long "Foundation Training" for the government cadre service employees, which was focused on detailed governmental policy, regulations, laws, ethics, legislative process, management, accounting, issues related to sustainable developments, etc.

**8. January 2, 1994 to February 27, 1998**
***Upazila Engineer/Assistant Engineer (PSC LGED),*** Local Government Engineering Department (LGED), Bangladesh Government. "LGED Bhaban", Agargaon, Dhaka 1216, Bangladesh. www.lged.gov.bd
- As the Upazila Engineer of two Upazilas, worked as the Head of the Local Government Engineering Section at the Upazila level.
- Prepared project proposals, estimates, developed bid documents and selected contractors.
- Supervised construction and maintenance works of rural roads, bridges, drainage structures, public buildings, primary schools, bio-gas plants and growth centers.

## RECENT MAJOR CONSULTANCY EXPERIENCES

**March 1, 2019 to June 30, 2019**
***Consultant,* USAID**
**Project Description:**
Area- Greater Jashore and Barisal area;
Budget- US$50 Million;
Components- 100km Roads, 10 Market Centers, 10 Collection Centers, & 1,000 ha irrigation/drainage-improved land.
**Responsibilities:** Worked as a lead Civil Engineer for the final evaluation of the ***BAIDP (Bangladesh Agricultural Infrastructure Development Program) of USAID***, US Government.

**July 23, 2014 to October 31, 2017**
***Short-term Consultant (STC),* The World Bank**
**Project Description:**
Name- *RTIP-II (Second Rural Transport Improvement Project);*
Area- 26 districts;
Project Budget- US$417 Million;
Components- Construction of 820km roads (149 contracts), Maintenance of 4,428km roads (464 contracts), Construction of total 3,413m length of bridges (34 contracts), Construction of 33 Growth Center Markets, Dredging of 3 (44km) Waterways, 3 Road Safety components and 27 institutional capacity building components.

**Responsibilities:**
- Worked as a key World Bank Task Team member (Transportation Engineering) of the ***RTIP-II*** and closely worked with LGED and project consultants regarding timely accomplishment of all those components.
- Worked closely with BUET on developing and finalizing the new Road Design Manual as well as the new Rural Road Safety Manual of LGED, on behalf of the World Bank.

**April 1, 2014 to December 31, 2015 (Bureau Veritas)**
***Consultant, Bureau Veritas (Bangladesh) Private Ltd.***
**Responsibilities:**
- Worked as the Lead Structural Assessor of buildings of Garments Industry, as part of Accord and Alliance requirements.

**June 16, 2008 to June 30, 2011**
***Co-Principal Investigator (Consultant),*** Michigan State University, USA
**Project Description:**
"Implementation of Superpave Binder and Asphalt Mix Specifications to Improve Pavement performance in Pakistan Project" under the Joint USA - Pakistan Science and Technology Cooperative Program conducted jointly by the Michigan State University, USA and the University of Engineering and Technology, Lahore, Pakistan. Budget: US$ 600,000. www.msu.edu
**Responsibilities:**
- Developed detailed training program on advanced asphalt binder and mix testing, and pavement materials characterizations, and provided technical advice.
- Worked on data analysis and technology transfer.

**SELECTED PUBLICATIONS ON TRANSPORTATION**

- **Javed Bari**, Md. A., Md. M. I. Sadi, Md. H. Islam, and Faria Tabassum. "Evaluation of the Hatirjheel Water Taxi Service of Dhaka City – the Capital of Bangladesh". Accepted for publication in the European Journal of Engineering Research and Science, ISSN: 2506-8016, 2019.
- John Willsie, **Javed Bari** and Rafiq Sarker. "Evaluation Report: Final Performance Evaluation of the Bangladesh Agricultural Infrastructure Development Program (BAIDP)". USAID. June 2019.
- **Javed Bari**, S.N. Siddiquey, M. A. Hossain, K. M. S. Newaz, and M. Noshin. "Identification of Black Spots on the first 100 kilometers of the Dhaka-Sylhet Highway (National Highway #2, i.e. N2) of Bangladesh". Proceedings of the 5th International Conference on Engineering Research, Innovation and Education (ICERIE 2019). Shahjalal University of Science and Technology, Sylhet, Bangladesh, January 2019.
- **Javed Bari**, M. H. Sunny, S. K. Nag, S. H. Tushar and M. T. Haque. 2018. "Development of Sidewalk Condition Index (SCI) of Dhanmondi R/A, Gulshan & Bashundhara R/A of Dhaka City". International Journal of Traffic and Transportation Engineering, 2018, 7(3): 53-62. DOI: 10.5923/j.ijtte.20180703.02. 1200 Rosemead Blvd, STE D #105, Rosemead, CA, 91731, USA, July 2018.
- **Javed Bari** and Md. Sayeedur Rahman. "Impact Evaluation Study for the Iswardi Export Processing Zone, Phase-2". Project Final Report submitted to Implementation Monitoring and Evaluation Division, Sher-e-Bangla Nagar, Dhaka-1207, Ministry of Planning, Government of the People's Republic of Bangladesh. May 2018.
- Syed Waqar Haider, M. Waseem Mirza, Ashvini K. Thottempudi, **Javed Bari**, and Gilbert Y. Baladi. "Characterizing Temperature Susceptibility of Asphalt Binders Using Activation Energy for Flow". Journal of American Society of Civil Engineers (ASCE). Transportation & Development Institute (T&DI) Paper No. 10.1061/41167(398)48, USA, March 2011.
- Syed Waqar Haider, M. Waseem Mirza, Ashvini K. Thottempudi, **Javed Bari**, and Gilbert Y. Baladi. "Effect of Test Methods on Viscosity Temperature Susceptibility Characterization of Asphalt Binders for the Mechanistic-Empirical Pavement Design Guide". Journal of American Society of Civil Engineers (ASCE). Transportation & Development Institute (T&DI) Paper No. 10.1061/41167(398)47, USA, March 2011.
- **Javed Bari** and M.W. Witczak. "New Predictive Models for the Viscosity and Complex Shear Modulus of Asphalt Binders for Use with the Mechanistic-Empirical Pavement Design Guide". Transportation Research Record No. 2001, pp. 9-19. Transportation Research Board, National Research Council, Washington, DC, USA, 2007.
- **Javed Bari** and M.W. Witczak. "Development of a New Revised Version of the Witczak E* Predictive Model for Hot Mix Asphalt Mixtures." Proceedings of the Association of Asphalt Paving Technologists (AAPT), Savannah, Vol. No. 75, pp. 381-423. AAPT, White Bear Lake, MN, USA, 2006.
- **Javed Bari** and M.W. Witczak. "Evaluation of the Effect of Lime Modification on the Dynamic Modulus Stiffness of Hot-Mix Asphalt: Use with the New Mechanistic-Empirical Pavement Design Guide." Transportation Research Record No. 1929, pp. 10-19. Transportation Research Board, National Research Council, Washington, DC, USA, 2005.
- Dean T. Kashiwagi, **Javed Bari**, and Bevan Sullivan. "Application of Performance Based System in the Pavement Contracting". Associated Schools of Construction (ASC) Proceedings of the 39th Annual Conference, pp 303-314, Clemson, South Carolina, April 8-12, 2003. Nominated as ASC 2003 best paper.

## RECENT/ ONGOING RESEARCH PROJECTS

- "Characterization of common asphalt binders used by Roads and Highways Department of Bangladesh Government to develop a strategy to implement the Performance Grade (PG) Specifications in Bangladesh".
- "Characterization of Recycled Plastic-Modified Asphalt Binders for Using in Flexible Pavements of Bangladesh".
- "Analysis of Bus Management System of Dhaka City".
- Analysis of Roadway Infrastructure Management Using iRAP Protocols to Ensure Road Safety of Critical Intersections in Dhaka City."
- "An Evaluation of the Impact of Malibagh-Shantinagar Intersection of Moghbazar Mouchak Flyover".

## PROFESSIONAL RESEARCH EXPERIENCES

**2019:** Worked as the lead Civil Engineer for the final evaluation of the BAIDP (Bangladesh Agricultural Infrastructure Development Program) of USAID. **Project budget =** USD 50 million.

**2018:** Worked as the team Leader for assessing the Socio-Economic-Environmental Impact Evaluation of the Ishwardi Export Processing Zone (IEPZ), Pabna, Bangladesh. **Project budget** = BDT 830 million.

**2014 - 2017:** Working on researches along with the World Bank and LGED on Road Safety and Performance-Based Maintenance Contract (PBMC) in the RTIP-II project, being implemented by LGED in 26 districts of Bangladesh. **Project budget =** USD 417 million.

**2011 - 2013:** Advised/Mentored Civil Engineering students at IUBAT to accomplish their Practicum and researches. I also conducted some independent researches.

**2009 - 2011:** Technical Advisor of ADOT Research Project #SPR-674 "Engineering Properties of Recycled ARFC overlays". **Budget =** USD 50,000.

**2008 - 2011:** Champion and Researcher of ADOT Research Project #SPR-610 "Development of AASHTO DARWin-ME Software for the MEPDG". **Budget =** USD 50,000.

**2008 - 2010:** Technical Advisor of ADOT Research Project #SPR-631 "Evaluation of Warm Mix Technology for Use in Asphalt Rubber Asphalt Concrete Friction Courses". **Budget =** USD 150,000.

**2008 - 2010:** Champion and Researcher of ADOT Research Project #SPR-672 "Traffic Data Input System for ADOT". **Budget =** USD 100,000.

**2007 - 2010:** Champion and Technical Advisor of ADOT Research Project #SPR-606 "Calibration and Validation of MEPDG for the State of Arizona". **Budget =** USD 300,000.

**2007 - 2010:** Technical Advisor of ADOT Research Project #SPR-628 "Maintenance Strategies for the State of Arizona". **Budget =** USD 100,000.

**2008 - 2011:** Co-Principal Investigator of the project titled "Implementation of Superpave Binder and Asphalt Mix Specifications to Improve Pavement performance in Pakistan" under the Joint Pakistan-USA Science and Technology Cooperative Program being conducted jointly by the Michigan State University, USA and the University of Engineering and Technology, Lahore, Pakistan. **Budget =** USD 600,000.

**2003 - 2004:** Sole researcher of the ASU-NLA joint ventured research project "Development of a Master Curve (E*) Database for Lime Modified Asphaltic Mixtures". This project was funded by National Lime Association (NLA), USA. **Budget =** USD 50,000.

**2002 - 2006:** Main researcher of the ASU-ADOT joint ventured research project "Performance Evaluation of Asphalt Rubber Mixtures in Arizona". The project was funded by ADOT, USA. **Budget =** USD 50,000.

**2002:** Sole researcher of the research titled "Application of Performance Based System in the Pavement Contracting". This independent study was conducted at ASU in association with its School of Construction.

**2002:** Sole researcher of the research titled "Developed a standard procedure for achieving target air void content of gyratory HMA specimens (provisional protocol)". This independent study was conducted at ASU in conjunction with the NCHRP 9-19 Project.

**2001 - 2005:** Key researcher of Subtasks C4b, C4c, C4e and C5 included in Task C (Field Validation of the Simple Performance Test) of NCHRP 9-19 Project (Superpave Support and Performance Models Management). This multi-year U.S. National project funded by the National Cooperative Highway Research Program, USA. **Budget =** USD 250,000.

**2001 - 2003:** Key researcher of the development of the AASHTO test protocol TP 62-03, titled "Determining Dynamic Modulus of Hot-Mix Asphalt Concrete Mixtures". The research was conducted at ASU in conjunction with the NCHRP 9-19 Project. **Budget =** USD 50,000.

**2000 - 2006:** Key researcher of projects #2, #3, #5 and #7 of ADOT's large long-term research program #SPR-402 (Development of Performance Related Specifications for Asphalt Pavements in the State of Arizona). **Budget =** USD 200,000.

**2000 - 2004:** Sole researcher of the ASU-ADOT joint ventured research titled "ADOT Crumb Rubber Modified Asphalt Cements Characterization Project". This multi-year research was funded by ADOT, USA. **Budget =** USD 50,000.

## ADVANCED LAB TESTING EXPERIENCES

**August 2003 - April 2005:** Personally conducted and directed all lab testings included in the "Civil Engineering Materials", "Bituminous Materials" and "Pavement Design and Analysis" courses of Arizona State University. Tests include compressive, tensile and flexural strength of concrete, steel, aluminium and wood, mix design of PCC and AC, aggregate gradation, Marshall and SuperPave test, conventional and Superpave asphalt binder testing etc.

**January 2001 - April 2005:** Personally conducted all asphalt concrete Dynamic Modulus (E*) testing and many Repeated Load Permanent Deformation (Flow Number and Flow Time) testing, analyzed the test data and wrote technical papers for the following research projects: (i) Projects C4b, C4c, C4e and C5 of NCHRP 9-19 Research Program, (ii) ADOT-ASU Research Program, (iii) NLA-ASU Research Program, etc.

**January 2000 - December 2004:** Personally conducted all asphalt cement binder testing, analyzed data and wrote technical paper for "ADOT AC Binder Characterization Project" and "ADOT Crumb Rubber Modified Asphalt Cements Characterization Project".

**January 2000 - December 2004:** Calibrated and maintained numerous advanced testing machines including various universal testing machines (UTM) used for E*, IDT, Fn and Ft testing, Bending Beam Rheometer, Rotational Viscometer, etc.

## RESEARCH INTERESTS

- Pavement and geotechnical design and analysis
- Highway materials characterization
- Traffic and crash data analysis
- Civil and construction engineering materials
- Recycling of roadway materials
- Socio-economic-environmental evaluation of development projects.

## SELECTED TRAININGS TAKEN

Carbon Footprint of Pavements, Rural Infrastructure Maintenance, Pavement Preservation for High-Traffic-Volume Roadways, Asphalt Emulsions, Strategic Planning, Performance Measures, Operational Management, Budgeting Process, Incident Command System (ICS), Successful Management of Project Development Process, Project Reference, EIA Practitioner's Training, Environmental Audit, Environmental Laws, Foundation Training of Public Employees, etc.

## COMPUTER SKILLS

Highly proficient in using the following computer applications:
- Project Appraisal: HDM-4.
- Project Management: Microsoft Project, Primavera and Suretrack.
- Pavement Design: AASHTOWare (Mechanistic-Empirical Pavement Design Guide Software).
- Highway Geometric Design: InRoads.
- Pavement Management: ADOT PMS software
- Statistical Analysis: Statistica, Matlab, Minitab and Design Expert.
- Engineering Estimates: HeavyBid Express.
- Programming: FORTRAN and Visual Basic.
- MS Office: MS Word, PowerPoint, Access and Excel.
- CAD: Microstation and AutoCAD.
- GIS: ArcGIS.

## REFERENCES

**Dr. Md. Abdullah Al Mamun**
Superintending Engineer of Roads and Highways Department (RHD), and
Director of Bangladesh Road Research Laboratory (BRRL), Mirpur, Dhaka, Bangladesh
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