



भारतीय राजमार्ग अभियन्ता अकादमी  
(सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार)  
**Indian Academy of Highway Engineers**  
(Ministry of Road Transport and Highways, Govt. of India)

F.No.IAHE/Trg/24/DPR(Consultants/2022-23

4<sup>th</sup> August, 2022

To,

**The Consultants working in highways**

**Subject: Mandatory Training Programme on Preparation of Detailed Project Reports (DPR) for Highway Projects for the personnel of Consultants working in highways – regarding.**

Sir,

Ministry of Road Transport and Highways (MoRTH) has directed Indian Academy of Highways Engineers (IAHE) to organize an especially structured training programme on 'Preparation of Detailed Project Reports (DPR) for Highway Projects' for the personnel of Consultants working on MoRTH, NHAI, NHIDCL, BRO and State PWDs National Highway projects as per approved module on self-financing basis for 6 days duration by IAHE at Noida (UP). The programme shall be made mandatory by suitable amendments to be made in the contract documents and circular issued for ongoing projects by MoRTH/NHAI.

2. The programme will be organized as a residential programme at IAHE to cover important aspects improving quality of DPR preparation, remove deficiencies generally found in DPRs, BOQs, estimates and scope of work and avoid variations (CoS), time & cost over runs, disputes, etc. so as to get projects executed timely. The evaluation of the participants shall be done before awarding certificates to the successful participants.

3. An amount of Rs.35,400 (Rs.30,000 + Rs.5,400 GST) shall be the fee per participant inclusive of GST would be payable in favour of Indian Academy of Highway Engineers (IAHE), Bank of India, Saving Bank Account 712212100000311, Sector-62 Branch, Noida-201309, IFSC Code: BKID0007122, GSTIN: 09AABAI2196K1ZD, PAN No AABAI2196K, in advance for the registration.

4. All the Consultants, Consultants and Concessionaires working on highway projects are requested to nominate their personnel for the programme which has been scheduled from **5<sup>th</sup> Sept to 10<sup>th</sup> Sept, 2022** (6 training day duration) at IAHE, Noida. Maximum intake per batch would be 40 participants. Registration may be done online at <https://forms.gle/vv7MXwHrsrJYRqiq8> and the same shall be confirmed on first come first served basis. A detailed course module is attached herewith for ready reference.

Yours faithfully,

(Dinesh Kumar Sharma)  
Joint Director

Encl: As above.

**Copy to:**

- |                                    |  |   |
|------------------------------------|--|---|
| 1. DG(RD)&SS, MoRTH                |  | <b>With request to write necessary directions to the Consultants, Concessionaire and Contractors working on various National Highway projects in the country.</b> |
| 2. Chairperson, NHAI               |  |   |
| 3. Managing Director, NHIDCL       |  |   |
| 4. DG, BRO                         |  |   |
| 5. Principal Secretary, State PWDs |  |   |

**Copy also to: PPS to Secretary, RT&H**

कृपया ध्यान दें: सभा पत्राचार कबल नदशक का पदनाम द्वारा सबाधत कए जाए । / Please note: All correspondence should be addressed to the Director by

ए-5, इंस्टीट्यूशनल एरिया, सेक्टर-62, नोएडा (यूपी) - 201 301 (भारत) / A-5, Institutional Area, Sector-62, Noida (UP) - 201 301 (India)

दूरभाष / Telephone/ 0120-2975331/2, ईमेल / Email: [director-iahe@gov.in](mailto:director-iahe@gov.in) / वेबसाइट: [iahe.org.in](http://iahe.org.in)

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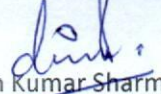
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3. Managing Director, NHIDCL
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With request to write necessary directions to the Consultants, Concessionaire and Contractors working on various National Highway projects in the country.

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**Indian Academy of Highway Engineers**  
(Ministry of Road Transport and Highways, Govt. of India)

## Mandatory Training Programme on Preparation of Detailed Project Reports (DPR) for Highway Projects for the personnel of Consultants

Day 1		
Time Period	Description of Topic	Tentative Faculty
09:30-11:00	<b>Overview of DPR preparation</b> <ul style="list-style-type: none"> <li>❖ Scope</li> <li>❖ Key Personnel in DPR Consultancy Team</li> <li>❖ Stages in Project Preparation</li> <li>❖ Activities in DPR Preparation</li> <li>❖ Client's role and supervision in preparation of DPR</li> </ul>	
11.30-13.00	<b>Modern Topography Survey</b> <ul style="list-style-type: none"> <li>❖ Scope of Surveying in Highway Project</li> <li>❖ Accuracy</li> <li>❖ DGPS Survey, Total Station, Auto Level</li> <li>❖ Introduction to LiDAR, Drone Photogrammetry</li> </ul>	
14:00-15:30	<b>Traffic Studies, Traffic demand estimation and Realistic Forecasting</b> <ul style="list-style-type: none"> <li>❖ Traffic Volume, Turning Movement, OD, Cargo/Commodity Movements, Axle Load Surveys, Speed &amp; Delay, NMTs, Logistic Park Terminals, Traffic demand estimation/growth rate assessment, population growth rate, elasticity of transport demand, socio-economic development plan, land use studies, Diverted/Generated/Induced Traffic, Level of Service, etc.</li> </ul>	
16.00-17.30	<b>Geometrical Design of Highways</b> <ul style="list-style-type: none"> <li>❖ Design Standards, Design Speed, Row, Lane Width, Median &amp; Shoulder Types &amp; Width, Roadway Width, Crossfall, Super Elevation, Sight Distance, Gradients, Lateral and Vertical Clearances, Design of Horizontal, Circular, Transition Curves, Design of vertical Curve, Access Control, Median Opening, Service Road- Acceleration &amp; Deceleration Lanes, etc.</li> </ul>	
Day 2		
09:30-11:00	<b>Pavement Condition Survey, Material Survey, Geo Technical Survey</b> <ul style="list-style-type: none"> <li>❖ Pavement composition &amp; Condition (Cracking, Rutting, Ravelling, Pothole, Edge Breaking etc.), Shoulder Condition, Pavement Roughness- BI &amp; IRI, Structural Evaluation FWD Test, Subgrade Characteristics &amp; Strength, Borrow area selection based on soil properties, quantity &amp; availability and clearance issues, Identification of Quarry for sand &amp; stone based on material properties, quantity availability and clearance issues, use of alternative materials viz. flyash, slag, recycled materials &amp; waste materials, Bituminous mix design and concrete mix design, Geo Technical Investigations &amp; Sub-Soil Exploration</li> </ul>	

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11.30-13.00	<b>Hydraulic &amp; Hydrological Investigations &amp; Studies</b> <ul style="list-style-type: none"> <li>❖ Hydrological studies, Topography, River &amp; Catchment Area studies, Storm &amp; Rainfall Characteristics, Vegetation and deposits, Collection of LWL, HFL, LTL, HTL, observed maximum depth of scour, history of hydraulic functioning of existing bridge, Flood Discharge, Area Velocity Method, Unit Hydrograph Method, Linear Waterway, HFL, Afflux, Scour depth and Model Study</li> </ul>	
14.00-17.30	<b>General Guidelines for Bridge Design</b> <ul style="list-style-type: none"> <li>❖ Types of Bridges and Bridge Components, Bridge Siting, Decision on Span arrangement and Preparation of GAD</li> <li>❖ Bridge Loading, Material Characteristics &amp; design values, Function &amp; Behaviour of different components under different loadings</li> <li>❖ Design Principles of different components such as Foundation, Substructures, different types of Superstructures, Bearing etc.</li> </ul>	
<b>Day 3</b>		
09.30-13.00	<b>Design of Flexible Pavement</b> <ul style="list-style-type: none"> <li>❖ Types of pavements, Load Distribution, Conventional &amp; Pavement with Stabilized Base, Full Depth Asphalt Pavement, Pavement Design Approaches, Empirical, Mechanistic &amp; Mechanistic-Empirical, Factor Affecting Pavement Design, Traffic and Loading (Axle Load, Repetition of load, Tyre Pressure/ Contact pressure, Vehicle Speed), Environment (Temperature, Precipitation/ Rainfall) considerations, Failure/Performance Criteria, Reliability/Economic Assessment (Life Cycle Cost), Perpetual/ Long-life Pavements, Design Traffic Estimation as per IRC:37-2018, Design of overlays, Pavement Analysis using IITPAVE, Hands-on on IITPAVE app.</li> </ul>	
14.00-17.00	<b>Design of Rigid Pavement</b> <ul style="list-style-type: none"> <li>❖ Design of rigid pavement (IRC:58)</li> <li>❖ Design of CRCP (IRC:118)</li> <li>❖ Hands-on on IITPAVE Software</li> <li>❖ Design of conventional, thin white topping, ultrathin white topping and composite pavements</li> </ul>	
<b>Day 4</b>		
09.30-13.00	<b>Road Safety Engineering &amp; Other Measures</b> <ul style="list-style-type: none"> <li>❖ Safe System Approach</li> <li>❖ Elements &amp; Design Principles of At-Grade Intersections and Grade Separated Intersections</li> <li>❖ Road Safety Engineering Measures- Road Signs, Road Markings, Delineators, RPM, Crash Barriers, Traffic Calming Measures etc.</li> <li>❖ Bus Bays, Truck Lay Bye. Highway Lighting</li> <li>❖ Way Side Amenities</li> </ul>	



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14:00-15:30	<b>Preconstruction activities and Clearances (Land Acquisition, Shifting of Utilities)</b> <ul style="list-style-type: none"> <li>❖ Guiding Principles for Land Acquisition</li> <li>❖ Preparation of Land Plan, Schedule and Draft Notifications under RFCTLARR</li> <li>❖ Shifting of utilities and estimates</li> </ul>	
16:00-17:30	<b>Environmental and Social issues and Project Clearances</b> <ul style="list-style-type: none"> <li>❖ Environmental Impact Assessment Study and Preparation of Environmental Management Plan</li> <li>❖ Guidelines for Environmental Clearance, Wild Life Clearance, CRZ Clearance, Guidelines for Forest Land Diversion</li> <li>❖ Social screening, PAP, R&amp;R plan and Compensation</li> </ul>	
<b>Day 5</b>		
09:30-13:00	<b>New Technologies and Materials for Highways</b> <ul style="list-style-type: none"> <li>❖ High Modulus Asphalt (Him) Mixes for Durable Highways</li> <li>❖ FRP bars for Bridges and CRCP</li> <li>❖ Ultra-High Performance and Fiber Reinforced Concrete</li> </ul>	
14:00-17:00	<b>Project Costing, Economic and Financial Analysis</b> <ul style="list-style-type: none"> <li>❖ Quantity Calculation, Rate Analysis and Cost Estimation</li> <li>❖ Objective of Economic and Financial Analysis</li> <li>❖ Economic Analysis using HDM-IV</li> <li>❖ Financial Analysis, Financial structuring and Modelling</li> </ul>	
<b>Day 6</b>		
09:30-13:00	<b>Gati-Shakti</b> <ul style="list-style-type: none"> <li>❖ Planning for DPR preparation for proposed road alignment through National Master Plan Platform</li> <li>❖ Demonstration of National Portal (PM Gati Shakti Integrated Master Plan) &amp; Ministry of Road Transport and Highways Portal</li> </ul>	
14:00-15:30	<b>Participants evaluation (Written/oral test)</b>	
16:00-17:30	<b>Feedback, Concluding session and Distribution of Certificates to the successful participants</b>	

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