



MINISTRY OF RAILWAYS (PROJECT IMPLEMENTATION UNIT)

PREQUALIFICATION OF PROJECT MANAGEMENT CONSULTANTS (PMC) for

Up-gradation of existing Main Line – 1 of Pakistan Railways

Consequent upon approval of the CPEC project of “Up-gradation of existing Main Line-1 (ML-1)” of Pakistan Railways by the Government of Pakistan, Team Leader / Project Implementation Unit (PIU), ML-1 Project, Pakistan Railways intends to Pre-qualify Project Management Consultants (PMC) for providing services of Design Review and Construction Supervision of EPC contractor.

Project includes up-gradation & construction of railway track, signalling and other allied structures on different sections of ML-1 extending from Karachi to Peshawar. The project will be executed in three packages.

Leading national / international consulting Firms, Joint Ventures having relevant experience in the field of Project Management, Design Review and Construction Supervision of up-gradation / construction of railway projects are invited to participate.

Prospective participants are required to submit their proposals on prescribed format available in Prequalification Documents which can be downloaded from Pakistan Railways’ website (www.pakrail.gov.pk) or PPRA’s website (www.ppra.org.pk).

Prequalification Documents are required to be submitted on or before 25th November, 2020 not later than 2:00 p.m (PST) on the address mentioned below. Prequalification Documents will be opened at 2:30 p.m on last date of submission and venue as below, in the presence of representatives of firms who choose to bear witness.

A Pre-proposal conference will be held at 11:00 a.m (PST) on 5th November, 2020 at Conference Room No.1, Pakistan Railways Headquarters’ Office, Empress Road, Lahore, Pakistan. Any further information can be obtained from the under signed during office hours.

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Email: pd.cpec@pakrail.gov.pk

Tender No. PIU/CPEC/Prequalification dated: 08th October, 2020

**PROJECT IMPLEMENTATION UNIT/CPEC
PAKISTAN RAILWAYS**



Expression of Interest (EOI)

FOR PREQUALIFICATION OF FIRMS/CONSORTIA

FOR

**Project Management Consultancy Services
For**

Up-Gradation of Main Line-1 (ML-1) of Pakistan Railways

October, 2020

Team Leader/Project Director
Project Implementation Unit (CPEC)
3-Mayo Gardens, Sunderdas Road Lahore
PH: (0092) 42 36286405 to 07
email: pd.cpec@pakrail.gov.pk

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1. INTRODUCTION

1.1. Project Information

The Main Line-1 (ML-1) of Pakistan Railways is passenger-freight shared railway line and is also a main corridor for North-South transportation. The infrastructure of ML-1 has become aged and obsolete being in operation for a long time. The tracks at most of locations are in dilapidated condition and the track geometry has deformed in several areas.

ML -1 extends from Kiamari (Karachi) in the south of Pakistan to Peshawar in the northwest, covering about 1681 kilometres and passing through Hyderabad, Rohri (Sukkur), Multan, Lahore and Rawalpindi stations. The entire railway track on ML -1 is broad gauge (1,676 mm).

Pakistan Railway has planned to upgrade infrastructure of ML-1 under China Pakistan Economic Corridor (CPEC) framework including track, bridges, tunnels, buildings, signalling, telecommunication, track maintenance system, rolling stock maintenance and overhauling facilities, establishment of Dry Port near Havelian, etc. besides dualization of track between Peshawar and Shahdara.

Relevant forum of Government of Pakistan i.e., Executive Committee of National Economic Council (ECNEC) has already approved the project on 5th August, 2020 at an estimated cost of USD 6.806 Billion. The Project has been planned to be executed in three packages.

Package-1

- (a) Estimated cost: US\$ 2,705 million
- (b) Expected commencement: January, 2021
- (c) Planned completion period: 5 years

Segments included:

- (i) Nawabshah - Rohri Section (183 km)
- (ii) Multan – Lahore Section (339 km)
- (iii) Lahore - Lalamusa Section (132 km)
- (iv) Kaluwal – Pindora Section (52 km)
- (v) Pakistan Railway Academy, Walton

Package-2

- (a) Estimate cost: US\$ 2,675 million
- (b) Expected commencement: July, 2022
- (c) Planned completion period: 7 years

Segments included:

- (i) Keamari - Hyderabad Section (183 km)
- (ii) Hyderabad - Multan Section (566 km) (excluding Nawabshah-Rohri)

Package-3

- (a) Estimated cost: US\$ 1,425 million
- (b) Expected commencement: July, 2023
- (c) Planned completion period: 4 years

Segments included:

- (i) Lalamusa – Rawalpindi Section (105 km) (excluding Kaluwal – Pindora)
- (ii) Rawalpindi – Peshawar Section (174 km)
- (iii) Establishment of Dry port near Havelian

Tenders for execution of Package-1 has been planned to be advertised during October 2020. There will be more than one tender for Package-1. The Employer shall be at liberty to issue RFP for various components of each Package separately or jointly (by grouping some components) and award the Contracts accordingly.

Brief of the project is enclosed as **Appendix-A**.

1.2. Objective of the Expression of Interest (EOI)

The objective of EOI is to pre-qualify professional consulting firms / JV of firms for Project Management, design review and construction supervision of up-gradation / construction of ML-1 Project to be executed under EPC mode. The Pre-qualified firms will be eligible for issuance of Request for Proposal (RFP) for final selection. Pre-qualified firms / JV shall provide services of Project Management, resident construction supervision and review of design submitted by EPC contractor.

1.3. Scope of Consultancy Services

The broad scope of consultancy services shall be Project Management Consultancy services including resident construction supervision and review of design submitted by the EPC contractor. Detailed scope of services and Terms of Reference (TORs) shall be provided along with the RFP to be issued to the Pre-qualified firms. Final selection shall be made on Quality and Cost (80:20) basis, through submission of Technical and Financial Proposals by the firms to whom RFP will be issued.

2. DEFINITIONS

2.1. Applicant

The Firm or Joint Venture (JV) of firms applying for the Expression of Interest (EOI) for Project Management Consultancy Services for Up-gradation of Main Line -1 (ML-1) of Pakistan Railways.

2.2. Employer

Project Implementation Unit/CPEC, Pakistan Railways.

2.3. Project

Up-gradation of Pakistan Railways' existing Main Line (ML-1) and establishment of a Dry Port near Havelian

2.4. Application

The Expression of Interest (EOI) documents as submitted by the Applicant

2.5. Request for Proposal (RFP)

RFP refers to the Technical and Financial Proposals that shall be issued to the Applicant(s), which shall be declared prequalified through this EOI to participate in the selection process.

2.6. Contract Agreement

Contract Agreement refers to the agreement, which shall be signed with successful Applicant(s), based on the RFP.

2.7. Similar Project

Similar Project means consultancy services for design or review of design or construction supervision of minimum track length of 300 kms (150 Kms of route length of double line will be considered equivalent to 300 Kms of track length), involving up-gradation / overhauling of existing railway track or of laying new track. This condition is applicable to two mandatory projects required for pre-qualification. In case of additional projects (more than two), track length equal to or more than 100 Km (50 Kms of route length of double line) will be accepted as similar project. One project of 600 kms (or more) will be considered equivalent to two 300 kms project.

3. INVITATION FOR PRE-QUALIFICATION

- (1) The Team Leader/Project Director, Project Implementation Unit, (CPEC) Pakistan Railways, Lahore, Pakistan invites Expression of Interest (EOI) for pre-qualification of Consultancy Firms / Joint Ventures (JV) to appoint as Project Management Consultant during execution of the project of 'Up-gradation of Pakistan Railways' existing Main Line (ML-1) and establishment of a Dry Port near Havelian' under the CPEC framework.
- (2) Pre-qualification is open to local (Pakistani) and foreign consulting Firms or Joint Ventures of firms who (for local firms only) are registered with Pakistan Engineering Council (PEC) having requisite technical and managerial experience of providing consultancy services for up-gradation of existing railway track or construction of new lines. Foreign firms shall be registered with respective regulatory body of their country. Foreign firm(s), in case it/they win the contract solely or as a JV partner, shall have to get itself / themselves registered with PEC, as per bye-laws in vogue.
- (3) A complete set of Expression of Interest (EOI) documents for pre-qualification can be obtained during office hours from the under mentioned address on submission of written application or can be downloaded from website www.pakrail.gov.pk and www.ppra.org.pk.
- (4) Expression of Interest (EOI) for pre-qualification duly filled in and attached with required documents must be submitted in sealed envelope by hand or through courier at under mentioned address not later than 2020 till 2:00 p.m and be clearly marked 'Expression of Interest (EOI)' for pre-qualification for Project Management Consultancy services for Up-gradation of Pakistan Railways' existing Main Line (ML-1) and establishment of a Dry Port near Havelian.
- (5) Applications received late shall not be entertained.

Team Leader / Project Director
PIU, ML-1 Project, Pakistan Railways
3-Mayo Gardens, Sunderdas Road, Lahore
Ph: +92-42-99206056 & 99206054 Fax: +92-42-36286303
Email: pd.cpec@pakrail.gov.pk

4. INSTRUCTIONS TO THE APPLICANTS

4.1. Submission of Applications

- (1) Applications for pre-qualification (one original and 2 copies) must be received in sealed envelope to be delivered either by hand or through courier service to: -

Team Leader/Project Director, Project Implementation Unit (CPEC),
3-Mayo Gardens, Sunderdas Road Lahore, Pakistan
Ph: +92-42-99206056 & 99206054
Fax: +92-42-36286303
Not later than 25th November, 2020 till 2:00 p.m

- (2) Applications shall be clearly marked “Application for Expression of Interest for pre-qualification for Project Management Consultancy services for Up-gradation of Pakistan Railways’ existing Main Line (ML-1) and establishment of a Dry Port near Havelian”.
- (3) The name and mailing address of the Applicant should be clearly marked on left hand side of the envelope.
- (4) The Applications should be in English language. Information in any other language shall be accompanied by its translation in English. Employer reserves the right for not qualifying any firm in case of non-compliance of this requirement.
- (5) Applicants must respond to all the questions and provide complete information as advised in this document. Lack of essential information may result in dis-qualification. However, the Employer may, at its discretion, request submission of any missing documents or additional documents.
- (6) A Pre-proposal conference shall be held to sort out teething issues with the interested parties. All the prospective Applicants are requested to attend. However, attending Pre-proposal meeting is not a mandatory requirement. The venue and time for the pre – proposal conference is as under:

Conference Hall No.1
Pakistan Railways Headquarters Office
Empress Road, Lahore, Pakistan
Ph: +92-42-99206056 & 99206054 Fax: +92-42-36286303
Email: pd.cpec@pakrail.gov.pk
Date:5th November, 2020, Time: 11:00 a.m

- (7) The Application should fully comply with the Instructions to Applicants, Forms, and Appendices etc. Non-compliance may lead to rejection of Applicant’s EOI for pre-qualification.

- (8) The Employer, if desired, may call specific pre-qualification of applicants for any peculiar nature of work. In this case, already pre-qualified firms shall be required to apply for pre-qualification again.

4.2. Pre-Qualification Criteria

4.2.1. General

Pre-qualification shall be based on the criterion given in succeeding paras regarding Applicant's experience, financial soundness and personnel capabilities as demonstrated by the Applicant's response in the Forms attached to this document. The Employer reserves the right to waive minor deviations, if these do not materially affect the capability of an Applicant to provide consultancy services. The experience and resources of any firm as sub-consultant shall not be taken into account in determining the Applicant's score as per qualifying criteria. However, experience of any applicant as Joint Venture partner or Consortium partner shall be considered. The broad criteria for pre-qualification shall be as under: -

Sr. No.	Category	Weightage/Marks
1.	Experience of Firm	
	i. Completed Similar Projects	50
	ii. Similar Projects in Hand	10
2.	Personnel Capabilities	40
	Total Marks:	100

4.2.1.1. Minimum Score required for pre-qualification

Pre-qualification status shall be decided on the basis of Pass/Fail. The Applicant must secure at least 50% Marks in each category to prequalify. The minimum overall score needed by an Applicant for prequalification is 70.

4.2.2. Mandatory Requirements

4.2.2.1. Experience of Firm

As a mandatory requirement, the firm or any of the firm in case of JV must have completed minimum two Similar Projects as defined in definitions. One of the mandatory project should be a 'Signaling Project' or a Similar Project having signaling portion. Signaling Project means a project of installation of signaling system on railway track.

4.2.2.2. Average Annual Turnover

Average Annual Turnover of a firm / JV of last three years must be minimum 5.00 million US \$ (Form 7, Company Financial Information).

4.2.3. Experience of Firms

For completed projects, maximum five (05) Similar Projects shall be graded for awarding score.

4.2.3.1. Scoring Procedure

Maximum score	=	60
For completed projects	=	50
For projects in hand	=	10

For five (5) completed Similar Projects (including Mandatory Project) shall be awarded scores in accordance with following criteria:

Two Projects	-	50 %
Three Projects	-	70 %
Four Projects	-	85 %
Five Projects	-	100 %

For in-hand Similar Projects, maximum two (02) Similar Projects shall be awarded scores in accordance with following criteria:

One Project	-	50 %
Two Projects	-	100 %

4.2.3.2. Completion Certificate of Projects

The Applicant must provide completion certificate, duly issued by the client, as a proof of completion of Similar Projects. In the absence of such certificate, these projects shall not be considered for evaluation. Certificate of substantial completion shall also be acceptable.

4.2.3.3. Award Letter for in hand projects

The Applicant must provide Award Letter or Contract Agreement for in hand Similar Projects. In the absence of Award Letter or Contract Agreement, score will not be awarded.

4.2.4. Personnel Capabilities

- (1) The Applicant must have in his employment, suitably qualified personnel to fill the key management and specialist positions which shall meet the specified criteria of experience provided in the relevant tables given below.
- (2) The information provided in relevant Forms to this document shall be used for evaluation.

EOI for Prequalification

- (3) List of professionals to be considered for evaluation, along with maximum score assigned to each professional, shall be in accordance with Table-1 given below.
- (4) Minimum qualification, overall experience and relevant experience shall be in accordance with Table-2 given below. Any professional not fulfilling the minimum requirement as stated in Table-2, shall not be considered for evaluation.
- (5) Similar Project has been defined under definitions for the purpose of comparison of the projects completed by the Consulting firm and assignment under consideration. For various professionals, similar assignment or relevant experience shall be as per their respective field of specialization.

Table-1

S. No	Description	Max Score
1	Project Manager	5
2	Deputy Project Manager	4
3	Project Planning, Scheduling Professional/ Expert	3
4	Track / Permanent Way Expert	3
5	Railway Bridge Expert	3
6	Structure Engineer	3
7	Railway Signaling & Telecom Expert	3
8	Train Operation Expert	3
9	Electrical Engineer	2
10	Mechanical Engineer (Locomotive / Carriage & Wagon Expert)	3
11	Geotechnical Engineer	2
12	Hydrology / Hydraulic Design Expert	2
13	Survey Expert	2
14	Contract Expert	2
	Total	40

Scores for professionals shall be awarded as under:

- i. For the professionals where relevant higher qualification has been mentioned in Table-2 the criteria shall be as under:

Minimum Qualification – 90%

Relevant Higher Qualification – 100%

- ii. For the professionals where relevant higher qualification has not been mentioned in Table-2 the criteria shall be as under:

Minimum Qualification – 100%

Table-2

S. No	Position	Min Qualification	Relevant Higher Qualification	Overall Experience (Years)	Min Relevant Experience (Years)
1	Project Manager	B.Sc. Engineering	M.Sc Railway or Transportation Engineering or Master in Business Administration (MBA) or Masters in Engineering Management / Construction Management or equivalent.	20	10
2	Deputy Project Manager	B.Sc. Engineering	M.Sc. Railway or Transportation Engineering	15	7
3	Project Planning, Scheduling Professional/ Expert	B.Sc. Civil Engineering with Diploma/ Certification in Project Planning	Masters in Project Management or MBA	10	5
4	Track / Permanent Way Expert	B.Sc. Civil Engineering	M.Sc. in Railway or Transportation Engineering	15	10
5	Railway Bridge Expert	M.Sc. Structural Engineering	M.Sc in Bridge Engineering or equivalent	15	10
6	Structure Engineer	M.Sc. Structural Engineering	--	10	5
7	Railway Signaling &	B.Sc.	Masters in	10	5

Table-2

S. No	Position	Min Qualification	Relevant Higher Qualification	Overall Experience (Years)	Min Relevant Experience (Years)
	Telecom Expert	Electrical / Electronics, Signaling /Telecommunication Engineering	Electrical, Telecommunication or Railway Signaling Systems		
8	Train Operation Expert	Any graduation with min 10 years experience in Railway train operation	Masters in Transportation Engineering	15	10
9	Electrical Engineer	B.Sc. Electrical Engineering	Masters in Electrical Engineering	15	10
10	Mechanical Engineer (Locomotive / Carriage & Wagon Expert)	B.Sc. Mechanical Engineering	Masters in Mechanical Engineering	15	10
11	Geotechnical Engineer	M.Sc. Geotechnical / Geological Engineering / M. Sc Geology	--	15	10
12	Hydrology / Hydraulic Design Expert	M.Sc. Hydrology/Water Resources Engineering./ Hydraulics Engineering	--	15	10
13	Survey Expert	B.Sc. Civil Engineering	Masters in Engineering Surveying	15	10
14	Contract Expert	B. Sc. Engineering	Masters in Contract Management	20	10

Note: Relevant Degree has been quoted for the guidance of the bidders. However, bidders can quote any other relevant degree as per norms of their country that would be considered for acceptance.

4.2.4.1. Mandatory Requirement for key professionals

- (1) Minimum Qualification, overall experience and relevant experience are mandatory.
- (2) The firm must have preferably on its payroll or in any firm in JV or association with leading firm the following professionals, fluent in **both English & Chinese** language (Reading, Writing & Speaking). The firm not fulfilling said requirement shall not be considered for pre-qualification.
 - a) Deputy Project Manager
 - b) Contract Manager
 - c) Any two professionals, other than Deputy Project Manager and Contract Manager.

Alternatively,

The Firm/JV must have well experienced (minimum 5 years' experience) at least four Chinese-English translators having Bachelor degree in Civil Engineering

- (3) In addition to providing detailed CV / Bio Data of each professional, in accordance with the format provided in this document, the Applicant must provide following for each professional. In case, these documents are missing for any professional, such professional shall not be considered for evaluation.
 - a) Appointment Letter issued to the professional or Agreement executed with the professional without mentioning or defacing the salary.

4.2.5. Joint Venture (JV)

Joint Venture must comply with the following requirements: -

- a) Following are minimum qualification requirements: -
 - i) The joint venture must collectively satisfy the overall qualification criteria / score and mandatory requirements.
 - ii) The lead partner must have completed at-least two Similar Projects. Out of these two Similar Projects, one project of 100 kms shall be acceptable.

iii) All the Pakistani firms in case applying as single entity or as lead partner of JV then it / they must have valid licence of Pakistan Engineering Council in any one of the following categories:

- i. 1214 (Railway & Railway Bridges)
- ii. 1201 (Buildings)
- iii. 1215 (Tunnels, Transportation System Services)

If Pakistani firm is not applying as single entity or as a lead partner, then its application to PEC for registration / renewal will be considered for pre-qualification on production of valid proof of having submitted such application to PEC. However, such firm will have to provide valid PEC Registration before signing of contract.

- iv) One firm can submit only one Application or can be a part of only one JV. Submission of more than one Applications or participation in more than one JVs shall render both Firm and JVs disqualified.
- v) In a JV, minimum 30% share must be of local/Pakistani firms as provided in PEC regulations.
- b) Contract shall be signed by all the partners in the JV so as to legally bind all partners, jointly and severally, and the Application shall be submitted with a copy of the JV agreement providing the joint and several liabilities.
- c) Replacement of any firm in any qualified JV, for any reason whatsoever, shall necessarily be with the approval of the Employer. Replacement shall be allowed only if the total score obtained by the JV is not reduced and continued to fulfil the mandatory requirements set for prequalification.
- d) Addition of any firm as associate or sub-consultant / contractor in any qualified JV is allowed subject to the approval of the Employer.
- e) The prequalification of a JV does not prequalify any of its partners (other than lead partner) individually. In case of dissolution of a JV, for continuation of prequalification only lead partner along with other partners (still part of JV, if any) shall be considered subject to fulfilment of prequalification criteria. Request of any JV partner (other than lead partner) to be considered for

prequalification individually (or by making JV with other firms) shall not be entertained.

4.3. Conflict of Interest

- (1) Government of Pakistan policy requires that Consultants provide professional, objective and impartial advice, and at all times hold the Employer's interests paramount, strictly avoid conflicts with other assignments or their own corporate interests and act without any consideration for future work.
- (2) A Firm that has been engaged by the Employer to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation.
- (3) Consultants have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Employer, or that may reasonably be perceived as having this effect. RFP will be issued to only those firms/JV's who are not affected by the conflict of interest.
- (4) This Project of Up-gradation of ML-1 has been planned to be implemented in three Packages, namely Package-I, Package-II and Package-III. The Employer shall be at liberty to issue RFP for each of the component separately or jointly (by grouping some components) and award the contracts accordingly.

4.4. Updating Prequalification Information

Applicant may be required to update the information of experience, personnel and any other information used for prequalification at the time of submitting their RFP, to confirm their continued compliance with the qualification criteria and verification of the information provided at the time of prequalification. RFP submitted by the Applicant shall be rejected, if the Applicant's qualification thresholds are no longer met at the time of bidding.

4.5. Participation in the Request for Proposal (RFP)

Firms / JV that have been prequalified under this procedure shall only be issued RFP to participate in the selection process.

4.6. Ownership of Prequalification Document

All documents submitted by the Applicant in response of this invitation to prequalification shall become the property of the Employer. However, intellectual proprietary rights of the information contained in the application shall remain vested to the Applicant.

4.7. Misconduct

If an Applicant or any person on its behalf makes any attempt to canvass, solicit or approach any of the officials of the Employer in any matter relating to or arising out of this Application, its Application shall be liable for rejection besides taking other action(s) including debarring the Applicant in accordance with prevailing policies of Government of Pakistan and Pakistan Railways.

4.8. Debarment Status

As a prerequisite to participate in the prequalification process, the Applicant should not have been suspended or debarred by Government of Pakistan, Pakistan Engineering Council, Pakistan Procurement Regulatory Authority (PPRA), Pakistan Railways, any organization of Government of Pakistan or any agency in Pakistan or the country in which the Applicant's company is incorporated from participating in such public sector projects. A certificate to this effect shall be provided the Firms in case of single entity or all JV Partners in case of JV along with the pre-qualification Application.

4.9. Full Compliance

The Application shall comply fully in accordance with the 'Instructions to Applicants', Forms, Appendices etc. Non-compliance may render the Applicant disqualified.

4.10. Amendment in Pre-Qualification Documents

- (1) At any time, prior to deadline for submission of Applications, the Employer may amend the pre-qualification document by issuing addenda.
- (2) Any addendum issued shall be part of the prequalification documents and shall be uploaded on the websites (www.pakrail.gov.pk, www.ppra.org.pk) to be downloaded by the prospective Applicants.

- (3) To give prospective Applicants reasonable time to take an addendum into account in preparing their Applications, the Employer may, at its discretion, extend the deadline for submission of Applications.

4.11. Annulment of Pre-qualifications and Recalling of Application

- (1) At any time during the pre-qualification process or after pre-qualification, the Employer can annul the pre-qualification and may recall the Applications. In such a case, the Employer shall not be liable for any expenses/claims of the Applicants who have submitted Applications for pre-qualifications or has been pre-qualified.
- (2) The Employer, if desired, may recall prequalification, without annulling the already qualified firms with a view to increase the competition. In such cases, already prequalified firms shall not be required to resubmit their Applications and shall stand prequalified.

Letter of Application

[On Letterhead paper of the Applicant (Lead partner in case of JV) including full postal address, telephone no., fax no., and e-mail address]

Date:.....

To:

The Team Leader/Project Director, Project Implementation Unit (PIU) CPEC,
3-Mayo Gardens, Sunderdas Road Lahore, Pakistan

Subject: **Project Management Consultancy Services for Up-gradation of Pakistan Railways’ existing Main Line (ML-1) and establishment of a Dry Port near Havelian under China Pakistan Economic Corridor (CPEC)**

Dear Sir,

1. Being duly authorized to represent and act on behalf of..... (hereinafter “the Applicant”), and having reviewed and fully understood all the prequalification information provided, the undersigned hereby applies to be considered to be prequalified as a Consultant for the subject assignment.
2. Attached to this letter are copies of original documents defining¹:
 - (a) the Applicant's legal status;
 - (b) the principal place of business; and
 - (c) the place of incorporation (for Applicants who are corporations); or the place of registration and the nationality of the owners (for Applicants who are in partnerships or individually owned firms).
 - (d) J.V agreement (*if applicable*)
3. The Employer and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents and all the information submitted in connection with this Application, and to seek clarification from our bankers and clients regarding any financial and technical aspects. This Letter of Application will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information, to provide such information deemed necessary and requested by yourselves or the authorized representative to verify statements and information provided in this Application, or with regard to the resources, experience, and competence of the Applicant.
4. The Employer and its authorized representatives may contact the following focal persons for further information², if needed.

1 *For applications by Joint Venture, all the information requested in the prequalification documents is to be provided separately for each partner of the Joint Venture. The lead partner should be clearly identified. Each partner in the Joint Venture shall sign the letter of Application.*

2 *Application by Joint ventures should provide information on a separate sheet for each party to the Application.*

S.No	Name and Designation	Telephone (office & cell)	Email
1			
2			
3			
4			

5. This application is made with full understanding that:
- (a) Issuance of RFP to prequalified Applicants may subject to verification of all the information submitted for prequalification.
 - (b) Employer reserves the right to:
 - (i) amend the pre-qualification documents during pre-qualification process and these amendments shall be binding upon the Applicants;
 - (ii) annul the process of pre-qualification for which no liability will be accrued on the part of the Employer

Applicants who are not applying as joint venture should delete para 6&7 and initial the deletions.

6. Appended to this Application, we give details of the participation of each party, including personnel / resource contribution and profit/loss agreements, to the Joint Venture or association. We also specify in terms of the percentage of the value of the contract, and the responsibilities for providing consultancy services.
7. We confirm that in the event that we submit RFP, that RFP as well as any resulting contract will be.
 - (a) signed by all the partners in JV so as to legally bind all partners, jointly and severally; and
 - (b) submitted with a Joint Venture agreement providing the joint and several liabilities of all partners in the event the contract is awarded to us.
8. The undersigned declare that the statements made and the information provided in the duly completed application is complete, true, and correct in all respect.

Signed	Signed
Name	Name
For and on behalf of (name of Applicant or lead partner of a joint venture)	For and on behalf of (name and signature of other partners of the joint venture)

Signed	Signed
Name	Name
For & on behalf of (Name & signature of other partners of Joint Venture)	For & on behalf of (Name & signature of other partners of Joint Venture)
Signed	Signed
Name	Name
Name	Name

Application Form A-1: General Information

All individual firms and each partner of a Joint Venture applying for prequalification are requested to complete the information in this form. Information regarding Nationality is also required to be provided for foreign owners or Applicants who are forming part of the Joint Ventures as required under the PEC Byelaws as a Partnership/Joint Venture.

1.	Name of Firm	
2.	Head Office Address	
3.	Telephone	Contact Person: Name: Title:
4.	Fax	Telex
5.	Place of Incorporation/Registration	Year of incorporation/registration
<i>NATIONALITY OF OWNERS</i>		
<i>NAME</i>		<i>NATIONALITY</i>
1.		
2.		
3.		
4.		
5.		

Application Form A-2: Joint Venture Summary

Names of all Partners of a Joint Venture	Percentage share (in terms of financial share) for this project	Broad specialization / area of services to be provided
1. Lead Partner		
2. Partner		
3. Partner		
4. Partner		
5. Partner		
6. Partner		

Application Form A-2A: Detail of Company Tree

- (1) Name of Mother Company:
- (2) Total Number & Names of Sister Companies:
- (3) Total Number & Names of Subsidiary Companies:
- (4) Financial Share & Area of Specialization

Member of Company Tree	Percentage share (in terms of financial share) for this project	Broad specialization / area of services to be provided
Mother Company		
Sister Company No.1		
Sister Company No.2		
.....		
Subsidiary Company No. 1		
Subsidiary Company No. 2		
.....		

Detail of Company Tree

Details of all members of Company tree including Mother Company, Sister Companies and Subsidiary Companies are to be provided separately on following format

1.	Name of Firm	
2.	Head Office Address	
3.	Telephone	Contact Person:Name:Title:
4.	Fax	Telex
5.	Place of Incorporation/Registration	Year of incorporation/registration
<i>NATIONALITY OF OWNERS</i>		
	<i>NAME</i>	<i>NATIONALITY</i>
1.		
2.		
3.		
4.		
5.		

Application Form A-3: Consultant's Organization

Please provide the following information for your firm/entity and each JV partner for this project.

1. Firm's Background and Achievements (minimum two pages)
2. Organogram.
3. List of professional Staff with Qualification and Experience.
4. List of Similar Projects completed
5. List of Similar Projects in hand

(In case of JV Please, provide above information for each JV partner)

Application Form A-4: Consultant's Specific Experience
(completed assignments only)

[Using the format below, provide information on each assignment for which your firm, and each associate for this assignment, was legally contracted as a corporate entity or as one of the major companies within an association, for carrying out consulting services **similar to the ones requested under this Assignment.**]

Name of Firm who executed the assignment	
Assignment name:	Value of the Project (in Pak Rs or US\$):
Country: Location within country:	Duration of assignment (months):
Name of Client:	
Start date (month/year): Completion date (month/year):	Value of consultancy services provided by your firm under the agreement (in Pak Rs or US\$):
Name of associated Consultants, if any:	Percentage of input provided by associated Consultants:
Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):	
Narrative description of Project:	
Description of actual services provided by your staff within the assignment:	

Note: Completion / substantial completion certificate issued by the Client must be attached. In the absence of said certificate, the project shall not be considered for evaluation.

Application Form A-5: Consultant's Specific Experience
(in hand assignments only)

[Using the format below, provide information on each in hand assignment for which your firm was legally contracted as a corporate entity or as one of the major companies within an association, for carrying out consulting services **similar to the ones requested under this Assignment.**]

Name of firm executed the assignment	
Assignment name:	Value of the Project (in Pak Rs or US\$):
Country: Location within country:	Duration of assignment (months):
Name of Client:	
Start date (month/year): Completion period (month/year):	Value of consultancy services provided by your firm under the agreement (in Pak Rs or US\$):
Name of associated Consultants, if any:	Percentage of input to be provided by associated Consultants:
Name of senior professional staff of your firm deployed and functions to be performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):	
Narrative description of Project:	
Description of services to provide by your staff within the assignment:	

Note: Documentary proof like Award Letter or Contract Agreement must be attached. In the absence of said documents, the project shall not be considered for evaluation.

Application Form A-6: CV / Bio Data and Experience of Professionals

1. **Name of Firm** [*on which payroll said professional is*]: _____

2. **Name of Staff:** _____

3. **Title of field of expertise:** _____

4. **Date of Birth:** _____ **Nationality:** _____

5. **Education:**

Degree	Major/Minor	Institution	Date (MM/YYYY)

6. **Membership of Professional Associations:** _____

7. **Other Training** [*Indicate significant training only*]: _____ **Other**

8. **Languages** [Specify Reading (R), Writing (W), Speaking (S) and *indicate proficiency: Good (G), Fair (F), or Poor (P) in speaking, reading, and writing*]:

S. No	Language	Capabilities			Proficiency (G, F or P)
		R	W	S	
1	English				
2	Chinese				
3					
4					

9. **Employment Record** [*Starting with present position, list in reverse order every employment held by staff member since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.*]:

<i>Employer</i>	<i>Position</i>	<i>From (MM/YYYY)</i>	<i>To (MM/YYYY)</i>

10. Work Undertaken that best illustrates relevant experience

[Among the assignments in which the staff has been involved, indicate the following information for those assignments that best illustrate staff capability to handle the tasks listed under point 11.]

- 1) Name of assignment or project: _____
 Year: _____
 Location: _____
 Client: _____
 Main project features: _____
 Positions held: _____
 Activities performed: _____

- 2) Name of assignment or project: _____
 Year: _____
 Location: _____
 Client: _____
 Main project features: _____
 Positions held: _____
 Activities performed: _____

<p>3) Name of assignment or project: _____ Year: _____ Location: _____ Client: _____ Main project features: _____ Positions held: _____ Activities performed: _____</p>
<p>4) Name of assignment or project: _____ Year: _____ Location: _____ Client: _____ Main project features: _____ Positions held: _____ Activities performed: _____</p>
<p>5) Name of assignment or project: _____ Year: _____ Location: _____ Client: _____ Main project features: _____ Positions held: _____ Activities performed: _____</p>

11. Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

[Signature of staff member or authorized representative] Date: _____
Day/Month/Year

Full name of authorized representative: _____

(Note: Unsigned CVs shall not be considered for evaluation)

Application Form A-7

Financial Information

Name of Firm:
Audited Balance Sheet along with Annual Turnover of the Firm for the last 3 years:

**APPENDIX-A:
BRIEF ON THE PROJECT**

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1. Introduction

The Governments of the People’s Republic of China and the Islamic Republic of Pakistan reached a consensus for planning and development of China-Pakistan Economic Corridor (CPEC) which was formalized through a Memorandum of Understanding (MOU) signed at Beijing on 5th July, 2013 and the decisions made at the meetings of Joint Working Group in January, 2014. The Up-gradation of Main Line-1 (ML-1) and construction of New Dry port at Havelian (Baldher) was declared as High Priority Early Harvest Projects (EHPs) during the 2nd Joint Co-operation Committee (JCC) meeting held in Beijing on 19-02-2014.

ML-1 starts from Karachi and passes through Kotri/Hyderabad, Rohri, Multan, Lahore and Rawalpindi and terminates at Peshawar.

The whole project envisages the up-gradation of ML-1, establishment of a dry port near Havelian Railway Station; up gradation of Pakistan Railway Academy Walton, Lahore; passenger facilities development of important railway stations, including Karachi, Hyderabad and Rohri in Sindh province; Multan, Lahore and Rawalpindi in Punjab province; Nowshehra and Peshawar in Khyber Pakhtunkhwa province.

2. Objectives of the Projects

Presently, Pakistan Railways is lifting around 4% of the freight traffic of the country. However, the Government of Pakistan intends to increase this volume to at least up to 20% by 2025. Pakistan Vision 2025 aims to build necessary logistics facilities to support GDP growth and in this regard it intends to up-grade and modernize Pakistan Railways Network. PR has been a financial burden on the national exchequer and Vision 2025 envisions the PR to become a financially and socially viable organization. This is a vital component of seven pillars of Vision 2025 “Modernizing Transportation Infrastructure & Greater Regional Connectivity” so as to ensure reduction in transportation costs, safety in mobility, effective connectivity between rural areas and markets /urban centres, inter-provincial high-speed connectivity, integrated road/rail networks between economic hubs (including air, sea and dry ports) and also high capacity transportation corridors connecting major regional trading partners.

To achieve the GoP’s objective, a major up-gradation of the railway system has been planned, including increasing speed of passenger and freight trains, doubling of tracks of the main line sections, and increasing line capacity so as to facilitate rail linkages to Central Asian States,

China, and other neighboring countries.

3. Current Status of ML-1

The Pakistan Railways network is an important part of the transport sector and it has been facilitating the movement of people and goods. Pakistan Railways infrastructure is more than a century old and has outlived its useful life. Some of the structures are on the verge of collapse and are a threat to safety of train operations. Most of the track components viz. rails, sleepers, fastenings, turnouts, ballast, bridges/culverts and sub-grades as well as signalling & telecommunication systems have exhausted their life.

The original track which was built in late 19th century and early 20th century had been designed for low speeds and lesser axle loads which do not commensurate with the present day loading patterns and desired speeds. Temporary Engineering Restrictions on account of unserviceable track components and old age bridges consume excessive time, almost 3 hours on ML-I and in some places the designed speed is restricted to just 50 Km/h. To facilitate the growing economy of Pakistan and to meet the demands for lesser transit time for passenger and freight trains, up-gradation of the system is essentially required.

4. Brief scope of the Project

ML-1 of PR network is a main transport corridor of Pakistan. The existing Karachi - Multan - Lahore - Shahdara section (1,271 km) and Chaklala - Golra section (18 km) are double-track railway. The Shahdara -Chaklala section (277 km) and Golra - Peshawar section (160 km) are single-track railway. Following is the scope and benefits of Up-gradation of ML-1

- a. Speed of passenger trains to increase from 65/110 km/h to 160 km/h
- b. Speed of the freight trains to increase to 120km/h
- c. New track to be of 25-ton axle load against existing 22.86 permissible axle load
- d. Freight trains trailing load to be increased from 2400 to 3400 tons
- e. Same track to be used by passenger as well as freight trains
- f. Addition of new tracks of about 814 kilometres, resulting in doubling of entire track from Karachi to Peshawar
- g. Existing 3,466 kilometres track will be up graded
- h. Grade separation to ensure safety of train operations and result in elimination of manned and un manned level crossings
- i. Fencing for track isolation

5. Execution of the Project

This project is planned to be executed through EPC Mode. The Project has been planned to be implemented in three Packages, namely Package-I, Package-II and Package-III. Detail of each package is mentioned in the table below:

5.1.Package-1

Package-1 has been planned to be initiated in January, 2021 with total completion period of five (05) years and will be completed by December, 2025. Package-1 includes following sections:

Sr. No.	Description	Length (Km)
1	Nawabshah-Rohri Section (183 km)	183
2	Multan-Lahore Section (339 km)	339
3	Lahore - Lalamusa Section (132 km)	132
4	Kaluwal – Pindora Section (52 km)	52
5	Up-gradation of Walton Railway Academy	-
	Total	706

5.2.Package-2

The work on Package-2 has been planned to commence after eighteen (18) months of the initiation of the work of Package-1. This Package has been planned to be started in July, 2022 with total completion period of seven (07) years and will be completed by December, 2029.

Sr. No.	Description	Length (Km)
1	Kiamari-Hyderabad Section (182 km)	182
2	Hyderabad – Multan (566 km) excluding work already done on Nawabshah – Rohri section (183km)	566
	Total	748

5.3.Package-3

The work on Package-3 has been planned to commence after twelve (12) months of the initiation of the work of Package-2. This Package has been planned to be started in July, 2023 with total completion period of almost four (04) years and is expected to be completed by December, 2027.

Sr. No.	Description	Length (Km)
1	Lalamusa - Rawalpindi Section	105

	(105 km)	
2	Rawalpindi-Peshawar Section including Nowshera-Peshawar (174 km)	174
3	Establishment of dry port near Havelian	-
	Total	279

6. Summarized Technical Parameters

Summarized Technical parameters are based upon preliminary design, however, actual construction will be carried out in accordance with the detailed design to be prepared by EPC contractor which will be based on Preliminary Design. All the relevant details have been dealt in the Preliminary Design and will be used as precursor of the detailed design to be prepared by the EPC Contractor.

6.1. Section Specific Parameters

6.1.1. Kaluwal-Pindora

6.1.1.1. Alignment

The Kaluwal-Pindora Section is located in Punjab province. It starts from Dina Station in the south and runs toward northwest via Sohawa to Gujar Khan and the length of section is 53.9km which shall be reduced after up-gradation to 44.74 Km, 6.74 km existing line will be reconstructed and 25.19 km double-track on new alignment. The main line of Dina – Gujar Khan Section is 44.74 km long and includes 36 curves (18.59 km in total length or 41.56% of the total route length).

An additional second line will be added to the Kaluwal-Pindora. Continuous welded rails with welded turnout will be laid in section

Ruling grade will be 10‰, whereas, the grade will be maintained by sections using the existing line. The maximum grade will be compensated as per Standard.

The designed travel speed of passenger train will be 120km/h, the minimum curve radius shall be 800m.

The bridges and culverts were built mainly for flood discharge. Survey and investigation indicate that there are 113 bridges and culverts. After up-gradation and construction of new track, total bridges and culverts on this

section will be 138.

6.1.1.2. Station and Yard

There are 8 existing stations in this section, with average inter-station distance of 7.36 km, maximum inter-station distance of 9.66 km (Sohawa Station ~ Missa Keswal Station) and minimum inter-station distance of 4.94 km (Bakrala Station ~ Tarki Station). In this up-gradation, 5 of these 8 existing stations will be closed and 3 will be retained. The Sohawa station among these three retained stations will be up-graded and relocated on the right side of the existing station with a new double main line to be realigned.

The stations shall have 4 receiving-departure tracks (including main line) and the effective length of each receiving-departure track is 700m.

The station site should be arranged on a flat slope. In difficult conditions, the gradient shall not exceed 1.0‰.

6.1.1.3. Water Supply and Drainage

This section has three water supply stations i.e., Dina, Sohawa and Gujar Khan. Sohawa and Gujar Khan Stations will be provided with one additional deep groundwater well and overhead water tank.

The sewage will be treated by septic tank and discharged into nearby station drainage ditch.

6.1.2. Lalamusa – Rawalpindi

6.1.2.1. Alignment

The Lalamusa - Rawalpindi Section is located in Punjab Province. It starts from Lalamusa urban area in the south, extends toward northwest, passes through Kharian and crosses over the Jhelum River, and then continues to extend northwestward, passes through Gujar Khan, Mandra Junction and Sihala, and ends at Rawalpindi urban area.

This section is to be upgraded from Lalamusa - Rawalpindi (Kaluwal - Pindora Excluded), with the maximum design speed of 120km/h. Sections K1354+000~K1401+700 and K1455+800~K1506+900 will be built with continuous welded rails with welded turnouts.

After the reconstruction, the main line of Lalamusa (excluded) - Dina (included) and Gujar Khan (excluded) - Chaklala (included) is 98.43 km long

and includes 64 curves (26.56 km or 26.99 % of the total length). Ruling grade will be 10‰, whereas, the grade will be maintained by sections using the existing line. The maximum grade will be compensated as per Standard.

The designed travel speed of passenger train will be 120km/h, the minimum curve radius shall be 800m.

The bridges and culverts were built mainly for flood discharge. Survey and investigation indicate that there are 182 bridges and culverts. After up-gradation and construction of new track, total bridges and culverts on this section will be 224.

6.1.2.2. Station and Yard

The whole section has 15 existing stations, out of which 6 have been closed and 9 will be up-graded. At medium and small stations, considering the requirements of passenger and freight trains to meet and pass, the two arrival-departure tracks in addition to the main lines will be upgraded and the effective length of each of such track will not be shorter than 700m.

Station yard shall be better arranged on the flat slope, the gradient in effective length scope of arrival-departure tracks shall not be more than 2.50‰ and in throat area should not be more than 10.0‰.

6.1.2.3. Water Supply and Drainage

This section has 8 water supply stations. 5 stations shall be furnished with one additional deep groundwater well and 8 reinforced concrete support water tank.

The sewage will be treated by septic tank and discharged into nearby station drainage ditch.

6.1.3. Nawabshah-Rohri

6.1.3.1. Alignment

This section of ML-1 is located in North of Sindh Province and runs through district of Nawabshah, Kahirpur and Sukkur. Bucheri, Daur, Bandhi, Padidan, Bhiria Road, Lakha Road and Mehrabpur are northwardly stations and Setharja, Gambat, Khairpur and Rohri are northeastwardly stations and constitute an n important part of ML-1.

Up-gradation of Nawabshah – Rohri section is with the maximum design speed of 160km/h. Rohri Station will be built with ballasted track and jointed rail. Other sections in K296+300 - K482+800 will be built with continuous welded rails with welded turnouts.

The existing line alignment in this section is in relatively good condition, mainly being straight. The curve accounts for 8.23% of the total alignment length of this section. However 3 curves, having radius less than 1600m will be eased out.

Ruling grade will be 5%. Longer grade section as far as possible are adopted while preliminary design of this section.

The designed travel speed of passenger train will be 160km/h, the minimum curve radius shall be 1600m.

The bridges and culverts were built mainly for flood discharge. Survey and investigation indicate that there are 209 bridges and culverts which will be covered in the scope of design.

6.1.3.2. Station & Yard

This Section is 186.86 km long from Nawabshah Station northward to North Block Hut Block Post, with 18 existing stations including 16 train stations and 2 block posts of South Block Hut and North Block Hut. In this Project, 14 station yards will be upgraded and 4 station yards will be closed.

At a general station, the effective length of each of the two receiving-departure tracks close to the main line shall be extended to 700m.

6.1.3.3. Water Supply and Drainage

Water supply facilities of 5 stations, namely Bucheri, Padidan, Mehrabpur, Gambat and Khairpur are connected to the existing water supply pipe networks of station areas. Each of the eight water supply stations, namely Nawabshah, Daur, Bandhi, Bhiria Road, Lakha Road, Setharja and Rohri, are provided with one new underground deep well. In reconstruction, 12 stations (Nawabshah, Bucheri, Daur, Bandhi, Padidan, Bhiria Road, Lakha Road, Mehrabpur, Setharja, Gambat, Khairpur and Rohri) are provided with septic tank and sewage will be discharged near after sewage treatment.

6.1.4. Peshawar-Newshehra

6.1.4.1. Alignment

This line starts from Peshawar Cantt passing through Peshawar City, Nasar Pur, Taru Jabba, Pabbi, Pir Piai, Khushal Kot and Nowshera. The second line shall be constructed with the same level of the existing line. The small radius curves shall be reconstructed by double-track detouring or individual reconstruction of small radius curve.

The second line to be constructed and the existing track to be reconstructed for higher speed of 120km/h, so a heavy ballast track shall be designed, and continuously welded track with welded turnouts shall be laid on the entire main line.

Ruling grade will be 5%. Longer grade section as far as possible are adopted while preliminary design of this section.

The designed travel speed of passenger train will be 120km/h, the minimum curve radius shall be 800m.

6.1.4.2. Station & Yard

There will be 5 stations to be left and up-graded. The clear stabling length of the 2 loops next to main line shall be extended to 700m. Additional one to three loop lines can be appropriately up-graded for large stations according to the transportation demands, with clear standing length extended to 700m.

The station site should be designed on a flat slope. In a difficult situation, the gradient of such slope shall not exceed 1.0%. In an extremely difficult situation, the present conditions will be maintained.

6.1.4.3. Water Supply and Drainage

There are 8 existing domestic water supply stations, which are respectively located in the section, Peshawar - Nowshera. On train watering stations i.e. Peshawar and Nowshera new water wells will be provided. The newly added sewage and waste water in the station area are pre-treated by septic tanks, or other structures, which are connected to the existing drainage system of the station or discharged into nearby municipal pipelines or nearby drain ditches

6.1.5. Multan-Lahore

6.1.5.1. Alignment

Multan~Lahore Section is located in Punjab province. As an important part of

the ML-1 Line, it starts from Multan urban area in the south, extends toward the northeast, passes through Khanewal, Sahiwal, Raiwind and ends at Lahore urban area.

The existing line is 337.03 km long and all the existing line in this section is double-track. The whole section will be upgraded to achieve a higher speed of 160 km/h and the line will be 337.03 km long upon the completion of the up-gradation.

Ruling grade will be 5‰. Longer grade section as far as possible are adopted while preliminary design of this section.

The designed travel speed of passenger train will be 160km/h, the minimum curve radius shall be 1600m.

The bridges and culverts were built mainly for flood discharge. Survey and investigation indicate that there are 291 bridges and culverts.

6.1.5.2. Station and Yard

There are 38 existing stations in this Section, 13 of which are closed by Pakistan Railways and 25 of which will be maintained.

At medium and small stations, considering the requirements of passenger and freight trains to meet and pass, the two receiving-departure tracks close to the main line will be upgraded and the effective length of each of such tracks will not be shorter than 700m. At large stations, 1 to 3 receiving-departure track(s) will be extra added to be upgraded according to the freight train operation and transportation demands, and the effective length of each of such tracks will not be less than 700m. But in case of difficulty to extend, the existing conditions can be maintained.

Station yard shall be better arranged on the flat slope, the grade shall not be more than 1.0‰ when the reconstruction is difficult, and the existing grade shall be maintained in case it is very difficult for reconstruction.

6.1.5.3. Water Supply and Drainage

In this section, new supply and drainage works are designed for 14 stations, including Multan Cantt, Riazabad, Khanewal, Mian Channu, Chichawatni, Sahiwal, Okara Cantt, Habibabad, Pattoki, Changa Manga, Kot Radha Kishan, Raiwind, Lahore Cantt and Lahore.

6.1.6. Lahore – Lalamusa

6.1.6.1. Alignment

The Lahore - Lalamusa Section is located in Punjab Province. As an important part of the ML-1, it starts from Lahore urban area in the south, extends toward northwest, passes through Gujranwala and Wazirabad, and crosses over the Chenab River, and then continues to extend north-westward, passes through Gujrat and ends at Lalamusa urban area. This section is to be up-graded with continuous welded rails with welded turnouts.

The existing line in this section has a total length of 129.5km, of which 6.05km is double track.

The whole section will be upgraded to achieve a higher speed of 160 km/h and for minimum radius of 1600m. Section, after up-gradation will be 129.47 km long upon the completion of the up-gradation. After the reconstruction, section includes 104 curves (34.95 km or 27 % of the total length). Existing Ruling Gradient i.e. 5‰ will be remain same after up-gradation. After up-gradation section will have 254 bridges and culverts.

6.1.6.2. Station and Yard

There are 16 existing stations in this section, 6 of which will be closed and 10 of which will be upgraded. At medium and small stations, considering the requirements of passenger and freight trains to meet and pass, the two receiving-departure tracks close to the main line will be upgraded and the effective length of each of such tracks will not be shorter than 700m. At large stations, 1 to 3 receiving-departure track(s) will be added according to the freight train operation and transportation demands, and the effective length of each of such tracks will not be less than 700m. Station yard shall be better arranged on the flat slope.

6.1.6.3. Water Supply and Drainage

In this section, new supply and drainage works are designed for 10 stations, including Badami Bagh, Shahdara Bagh, Kalashah Kaku, Muridke, Kamoke, Eminabad, Gujranwala, Gujranwala Cantt, Wazirabad and Gujrat. 10 water supply stations are provided with 1 reinforced concrete support water tank.

6.1.7. Kiamari-Hyderabad

6.1.7.1. Alignment

This Kiamari-Hyderabad section is located in Sindh Province. It starts from Kiamari in the south, extends toward the northeast, passes through Karachi City, Drigh Road and Malir to Landhi, Jumma Goth, Gaddar, Kotri and ends at Hyderabad, constituting an important part of ML-1 Line.

The main line of Kiamari (included) –Hyderabad (excluded) Section is 181.4km long and includes 334 curves (52.1km in total length or 29.18% of the total route length).

The section will be upgraded for 160Km/h, with minimum curve radius of 1600m and ruling gradient of 5‰ by using welded rails and turnouts. Longer grade section will be adopted for the longitudinal profile as far as possible.

As per field survey 155 bridges and culverts are in design scope.

6.1.7.2. Station & Yard

Kiamari (included) to Hyderabad (excluded), K0+000–K181+400 is with total route length of 181.4km. There are 22 existing stations and all of them are intermediate stations, with average inter-station distance of 8.63 km, maximum inter-station distance of 20.86 km (Meeting Station ~ Bholari Station) and minimum inter-station distance of 1.7 km (Keamari Station ~ Karachi East Wharf Station).

At a general station, the effective length of each of the two receiving-departure tracks close to the main line shall be extended to 700m.

6.1.7.3. Water Supply and Drainage

Each station of this section is furnished with one additional deep groundwater well and one reinforced concrete support water tank.

The designed sewage will be treated by septic tank and discharged into nearby station drainage ditch.

6.1.8. Establishment of Dry port near Havelian

6.1.8.1. Railway Port

It will be constructed near Havelian. Three arrival-departure tracks with an effective length of 700m will be increased on the station.

Two bundles of container loading and unloading tracks will be provided. Each bundle will be provided with One (01) broad-gauge track and One (01)

reserved standard-gauge track. The effective loading and unloading length at the initial stage will be 210m for 15 cars.

One warehouse track for packaged goods will be provided and the effective loading and unloading length at the initial stage will be 210m for 15 cars. One freight platform being 26.0m in both length and width and being 1.05m higher than the rail surface will also be provided. A warehouse being 18m in width will be provided as required.

The in-site roads and railway port entering and exiting road system, access control system and drainage system will be provided. The main in-site roads will be 15.0m and 7.0m in width. Size of large park lots will be 5×15m and that of small park lots will be 3×6m.

6.1.8.2. Highway Port

The area for commercial inspection and animal and plant inspection and quarantine is not included in this project for it involves laws and specific technical process and requirements. The operating area will be set on one elevation. Platform and warehouse will be reserved in the storage area. The container stock yard, transshipment yard and the area for machinery storage and maintenance facilities will be constructed in one time.

The main road of 14.0m and the ring road of 7.0m in width will be provided.

6.1.9. Nowshera-Rawalpindi

6.1.9.1. Alignment

This line starts from Nowshera passing through Jahangira Road, Khairabad Kund, Attock City, Sanjwal Cantt, Hasanabdal, Taxila Cantt, Golra Sharif, Nur, and Rawalpindi. The second line shall be constructed with the same level of the existing line. The small radius curve shall be reconstructed by double-track detouring or individual reconstruction of small radius curve. This section has 54 curves with a radius of less than 800m and with a transition curve length that cannot guarantee 120km/h speed. In this curve reconstruction, the transition curve length will be increased to 800m for speed 120km/h. The track will be up-graded with continuously welded rails and turnouts. After up-gradation, section will have 244 bridges and culverts.

6.1.9.2. Station and Yard

There will be 9 stations to be left and up-graded. At a general station, the effective length of each of the two receiving-departure tracks close to the main line shall be extended to 700m.

Station drainage system shall be systematically designed according to the local precipitation and station layout. Vertical slope at bottoms of drainage ditches shall not be less 2‰ in most condition. Areas between station tracks shall be generally provided with concrete rectangle ditch with covering plate, and the side ditches shall be made of mortar rubber or concrete in a trapezoid shape

6.1.9.3. Water Supply and Drainage

For this section in the existing ML-1 railway line in Pakistan, this design includes 9 stations and all are existing stations. On each watering station, which are Rawalpindi and Attock City, one new well will be built. There are 7 existing domestic water supply stations (NUR, Golra Sharif, Taxila Cantt, Hasanabdal, Sanjwal Cantt, Khairabad Kund, Jahangira Road), one tube well will be newly constructed for every station. The newly added sewage and waste water in the station area are pre-treated by septic tanks, or other structures, which are connected to the existing drainage system of the station or discharged into nearby municipal pipelines or nearby drain ditches.

6.1.10. Hyderabad – Multan (excluding Nawabshah-Rohri)

6.1.10.1. Alignment

The Hyderabad-Reti Section is located in Sindh province; the Reti-Multan Section is located in Punjab Province. As an important part of the ML-1, it starts from Hyderabad urban area in the south, extends toward northeast, passes through Oderolal, Tando Adam, Shahdadpur, Daharki, Rahimyar Khan, Khan Pur, Bahawal Pur, Lodhran and ends in Multan urban area.

The existing lines are of 564.81 km length, among which the length of the route in Sindh Province is 229.88 km, and the length of the route in Punjab Province is 334.92 km. Hyderabad- Multan section is with existing double-track.

Only 8.10% of its total length is curved, totally 122 curves, with an overall length of 45.76 km.

The line has 41 curves (17.71 km) with a curve radius less than 1,600m. The

minimum curve radius is 510 m and the minimum circular curve length is 140.35 m.

The Hyderabad – Multan (Nawabshah - Rohri Excluded) Section has 81(28.04 km) curves with a curve radius greater than 1,600m. Based on up-gradation, reconstruction is conducted on sections with the curve radius greater than 1,600m but transition curve length failed to meet the requirements, totally 76 curves (25.08 km) will be reconstructed, so as to meet the speed of 160km/h.

Ruling grade will be 5‰ and the grade will be maintained by sections using the existing lines. There are 576 bridges and culverts are in design scope.

6.1.10.2. Station and Yard

This section has 49 existing stations, among which, 14 have been closed by Pakistan Railways, and 35 stations are in operation, 31 stations are to be up-graded and 3 stations, namely Palijani Station, Jalal Mari Station and Lundo Station will be closed in the project. The newly built Chani Goth Station will be relocated. There will be 32 stations in total after completion of up-gradation.

Hyderabad (included) to Nawabshah (excluded), K181+400–K296+100.38, with total route length of 114.57 km. There are 11 existing stations and all of them are intermediate stations. In terms of this design, 3 stations will be closed. At present, the existing Wahab Shah Station is closed and will be opened in this design.

Rohri (excluded) to Multan Cantt (excluded), K482+799.09–K844+626.217 and RK0+000–RK85+450, with a route length of 449.91 km. There are 38 existing stations and all of them are intermediate stations. In terms of this design, 14 stations will be closed. This preliminary design covers 23 up-graded stations and 1 new relocation-based station (namely Chani Goth Station).

At a general station, the effective length of each of the two receiving-departure tracks close to the main line shall be extended to 700m. Existing conditions of non-electric centralized interlocking area as well as facilities (including platform) in beyond up-gradation scope shall be maintained.

6.1.10.3. Water Supply and Drainage

Appendix-A

In this section, there would be 32 stations, i.e. Hyderabad, Allah Dino Sand, Detha, Oderolal, Wahab Shah, Tando Adam, Shahdadpur, Sarhari, Sangi, Pano Akil, Ghotki, Mirpur Mathelo, Daharki, Reti, Walhar, Machi Goth, Sadikabad, Rahimyar Khan, Kot Samaba, Khan Pur, Jetta Bhutta, Feroza, Liaquat Pur, Chani Goth, Dera Nawab Sahib, Mubarak pur, Samasatta, Bahawal Pur, Lodhran, Gilawala, Shujabad and Shersah.

All stations are designed to use the tube well. One water tower will be designed for Hyderabad and Khan Pur stations respectively. Other water supply stations will be provided with one reinforced concrete support water tank

6.2. Generalized Parameters

6.2.1. Track

Ballasted track will be adopted for this section according to heavy track standard. However, Locomotive overhaul track will be ballastless and adopted with jointed track. The speed limit of Diversion is 45km/h and it is ballasted track and adopted with jointed track. Rails on the main lines shall all be removed and no longer used for the main line. The newly added rails shall be 25m long fixed with 60E1 cross section and without bolt hole and be made of R350HT material according to the standard EN13674-1:2011. The new rails shall be welded into 500m long rails by flash welding at the rail welding base. At the transition of different types of rails, combination rails shall be used for connection. The rail cant will be 1:20.

Sleepers on the main lines shall all be removed and replaced with newly designed 2,750mm pre-stressed concrete sleepers. The sleeper removed shall be no longer used for the main line. Density of the sleeper shall be 1,667 Pcs/km and the section provided with guard rails shall use 2,750mm pre-stressed concrete bridge concrete sleepers, no wooden sleeper will be used on the bridges. All the bridges would be having a ballasted bed. All fasteners on the main lines shall be removed and replaced with the W14-PK fasteners. The fasteners removed shall be no longer used for the main line. For sections where track circuit is required, capacitance sleeper for track circuit will be provided at positions proposed by signal discipline. Iron part of fastenings used for the whole line will be subject to rust-proof treatment.

Soil subgrade is laid with double-layer ballast bed which consists of 30cm top ballast

and 20cm bottom ballast. Hard rock subgrade and bridge will be laid with 35cm single-layer ballast. All girder bridges will be built with a ballasted bed. Top surface of ballast shall be 3cm lower than rail-supporting surface of sleeper. Width of the top surface of the single-track ballast bed will be 3.55m. The width of double-track ballast bed shall be designed on basis of single line. The ballast shoulder piling height will be 15cm, and the side slope of ballast bed accounts for 1: 1.75.

6.2.2. Telecommunication

The services to be provided for ML-1 line communication system include CTC, LTE-R, dispatching communication, environmental/power monitoring and voice services. IP-based voice communication services for all nodes will be provided. Internal voice calls can be made by access points such as stations and operation centre along the ML-1 line. A voice integrated access device (IAD) will be deployed at all stations and operation centres using the IP voice switching centre (IPPBX) provided in the Peshawar, Rawalpindi, Lahore, Multan and Sukkur operation centres.

To meet the requirement of the project and to make reservation for the future services, optical fibre will be provided from Peshawar to Karachi. Analogue microwave system would completely be up-graded with IP digital microwave system which will be connected to operational centres of entire ML-1. Firma alarm system in workshops and telecom equipment centres. Up-gradation of telecom operational centres and exchange system of entire ML-1 and design of video surveillance system. LTE-R coverage of workshop and related maintenance sheds over the system and establishment of central telecom workshop.

6.2.3. Signal

The CBI system shall be installed having much less operating/response time as compared to other mechanical, electrical and electromechanical systems.

The Signaling and Train Control system shall be of following types:

- (1) Interlocking: Electronic Interlocking
- (2) Point Operation: Electrical
- (3) System of working – Automatic block Signaling along with CTC and ATP
- (4) Signals: Multiple Aspect Color Light Signals (MACLS)
- (5) Signal lighting: LED
- (6) Control Operation: Centralized Traffic Control System

- (7) Track vacancy detection: AFTC / Digital Axle counter
- (8) Isolation: The isolation equipment at all of running yard will be interlocked
- (9) Train Protection: ATP system shall be provided
- (10) Safety Standard: SIL 4 for Safety critical systems The Signaling and Train Control system and its Sub-system/Components will conform to international standards.

6.2.4. Electric Power

11/0.4kV substations, box-type substations, pole-mounted substations and diesel generators shall be arranged according to the load distribution to supply power. 11/0.4kV pole-mounted substations will be installed to power the wireless communication equipment and the emergency power supply will be provided from the built-in batteries of the equipment.

6.2.5. Passenger amenities and facilities.

At commercial stations, the length of platform shall not be less than 500m, wherever it is difficult to extend the platform, the length shall not be less than 300m. For non-commercial stations, the length of the existing platforms will be unchanged and the length of the rebuilt platforms will be same with the existing one. The width of rebuilt platforms at non-commercial stations will be 6m. For commercial stations, one pedestrian underpass will be added, and in such stations, the existing foot over bridge effected by the station reconstruction will be removed. For non-commercial stations, if the existing foot over bridge is affected by the station up-gradation, it would be rebuilt, and pedestrian underpasses will be not added.