
付属資料 3: S/W 及び M/M(事前調査)

SCOPE OF WORK
FOR
THE FEASIBILITY STUDY
ON
THE DEVELOPMENT OF DEDICATED MULTIMODAL HIGH AXLE
LOAD FREIGHT CORRIDOR WITH COMPUTERISED CONTROL
FOR DELHI-MUMBAI AND DELHI-HOWRAH
IN
INDIA

AGREED UPON BETWEEN
MINISTRY OF RAILWAYS
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

DELHI, 3rd February, 2006



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I. INTRODUCTION

In response to a request from the Government of India (hereinafter referred to as "GOI"), the Government of Japan (hereinafter referred to as "GOJ") in accordance with the relevant laws and regulation in force in Japan, has decided to conduct "The Feasibility Study on the Development of High-Axle Load Multimodal Dedicated Freight Corridors with Computerised Control for Delhi-Mumbai and Delhi-Howrah rail routes in India" (herein referred to as "the Study")

Accordingly, the Japan International Cooperation Agency (herein after referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the GOJ will undertake the Study in close cooperation with the authorities concerned of the GOI.

The Ministry of Railways (hereinafter referred to as "MOR") shall act as counterpart agency to the JICA Team and also act as the coordinating body with other relevant organizations for the smooth implementation of the Study, on behalf of the GOI.

The present document sets forth the Scope of Work with regard to the Study.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are:

- (1) to explore the feasibility of the development of the new dedicated high-axle load multimodal freight corridors on the Western (Delhi-Mumbai) and Eastern (Delhi-Howrah) rail routes with computerized control to the year of 2021-22,
- (2) to assess the feasibility of selected freight railway development project in the Study, and
- (3) to share Japanese experience in railway development through the implementation of the Study.

III. STUDY AREA

The Study shall survey the Western (Mumbai-Delhi) and Eastern (Delhi-Howrah) corridors on the "Golden Quadrilateral" in India shown in Appendix 1.

IV. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study shall cover the following items:

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<Task 0: Base-line survey for railway transport capacity development>

1. Present situation and issues to be tackled in transport sector of India
 - (1) Present situation and issues in transport sector of India
 - (2) Present situation and issues on physical distribution of transport network in India
 - (3) Role of railways in transport sector of India
 - (4) Issues to be tackled in freight transportation by Indian Railways
2. Present condition of the existing corridors
 - (1) Socio-economic conditions
 - (2) Freight and passenger transport characteristics (including all transportation modes)
 - (3) Railways infrastructure and facilities (engineering works, track, signaling and communication facility, OHE & electrical installations, rolling stock, terminals, etc)
 - (4) Railways operation (personnel, organization and train operation practices, etc)
 - (5) Financial Situation of Indian Railways
 - (6) Maintenance mechanism, organization and construction for fixed and moving infrastructure
3. Base-line survey for railway transport capacity development on existing corridors
 - (1) Impact of the implemented projects for existing corridors
 - (2) Relations with other on-going projects
 - (3) Demand forecast on the freight and passenger traffic till the year of 2021-22
 - (4) Social impact of investment in the project
 - (5) Present operation and maintenance plan
 - (6) Study for handling system and management such as en-route and other freight terminal

<Task 1: Justification of the construction of the new freight corridor>

1. Route alignment profile and plan
2. Design standard for civil engineering structures
3. Technologies related to railway transport control system
4. Technologies related to freight rolling stock, signaling and operation
5. Study of alternatives including following;
 - (a) construction of the new freight corridors
 - (b) improvement of the existing lines
 - (c) construction of the new corridors designed for the passenger service, in so far as it facilitates JICA to justify the construction of Dedicated Freight Corridors within the ambit of the Joint Statement of both the Prime Ministers.
 - (d) present status
6. Preliminary design and construction plan of each alternative
7. Estimated total project cost of each alternative



8. Environmental and social impact of each alternative(The study for environmental and social considerations with the TOR (draft) attached as Appendix 2)
9. Evaluation of alternatives (economic, financial analysis (profitability analysis), environmental / social aspect, sustainability, etc)
10. Implementation plan of the selected project (implementation schedule, finance, procurement, implementing organization, utilization of Japanese technology, etc)

<Task 2: Feasibility study on the Dedicated Freight Corridor Project>

1. Supplementary engineering survey(s) for the project
2. Supplementary demand forecast for the project
3. Preliminary engineering design of facilities and equipment
4. Operation and maintenance plan
5. Management and organization plan
6. Environmental / social impact and mitigation measures (The TOR of this study will be decided in the course of the Study)
7. Cost estimation
8. Economic and financial analyses
9. Implementation plan (implementation schedule, finance, procurement, implementing organization, utilization of Japanese technology, etc)
10. Overall evaluation
11. Conclusion and recommendation

V. PROJECT SCHEDULE

The Study will be carried out within a Eighteen (18) months period in accordance with the attached tentative schedule as shown in Appendix 3.

VI. REPORTS

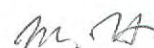
JICA shall prepare and submit the following reports in English to the GOI.

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|-----------------------------|------------------|
| 1. Inception Report: | Ten (10) copies, |
| 2. Progress Report 1 and 2: | Ten (10) copies, |
| 3. Interim Report 1 and 2: | Ten (10) copies |
| 4. Draft Final Report: | Ten (10) copies |

The written comments on the Draft Final Reports from the GOI shall be delivered within one (1) month after the receipt of the Draft Final Reports.

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| 5. Final Report: | Thirty (30) copies |
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Within one (1) month after the receipt of the comments on the Draft Final



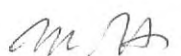
Reports.

VII. UNDERTAKING OF GOI

1. To facilitate smooth conduct of the Study, the GOI shall take the following necessary measures:
 - (1) to secure the security of the JICA Team;
 - (2) to permit the members of the JICA Team to enter, leave and sojourn in India for the duration of their assignment therein and exempt them from foreign registration requirements and consular fees;
 - (3) to exempt the members of the JICA Team from taxes, duties, fees and any other charges on equipment, machinery and other materials brought into and out of India for the conduct of the Study;
 - (4) to exempt the members of the JICA Team from income taxes and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the JICA Team for their services in connection with the implementation of the Study;
 - (5) to provide necessary facilities to the JICA Team for remittance as well as utilization of the funds introduced into India from Japan in connection with the implementation of the Study;
 - (6) to secure permission for the JICA Team to take the data and documents related to the Study, out of India; and
 - (7) to provide the medical services as needed. Its expenses will be chargeable on the members of the JICA Team.

2. The GOI shall bear claims, if any arises, against the members of the JICA Team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the JICA Team.

3. The MOR shall provide the JICA Team with the following, in cooperation with other organizations concerned:
 - (1) available data and information related to the Study, including non classified aerial photographs and maps;
 - (2) counterpart team ;
 - (3) credentials or identification cards; and



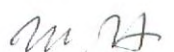
VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. to dispatch, at its own expense, the JICA Team to India; and
2. to pursue technology transfer to the Indian counterpart personnel in the course of the Study.

IX. OTHER CONCERNS

The MOR and JICA shall consult with each other in respect of any matter that may arise from or in connection with the Study.



Terms of Reference for Environmental and Social Considerations Study (Draft)

IV. Task 1 (8).

Environmental and social impact of each alternative

1. Present Environmental Conditions

- 1.1 Social environment
- 1.2 Natural environment
- 1.3 Pollution

2. Requirement on Project Description

(Alternative scenarios including “no project-option” should be presented and examined)

- 2.1 Construction
- 2.2 Requirement on railway facilities
- 2.3 Number of resettlement

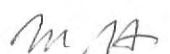
3. Description of Legislation Concerned

- 3.1 Environmental laws and regulations, guidelines
- 3.2 Environmental impact assessment
- 3.3 Environmental quality standard
- 3.4 Land acquisition and resettlement

4. Stakeholders Analysis and Holdings of Stakeholders’ Meetings (Hosted by MOR in collaboration with JICA)

- 4.1 Selection of Stakeholders’ such as related agencies in the level of state, University, NGOs
- 4.2 Holdings of Stakeholders’ Meetings
- 4.3 Recording of the minutes of Stakeholders’ Meetings
- 4.4 Information disclosure through medias such as newspaper, web site, public consultation and so on

5. Preparation of Terms of Reference (TOR) for the study on the environmental / social impact and mitigation measures



IV. Task 2 (6)

Environmental / social impact and mitigation measures

<The following items are examples of study contents. TOR will be decided in the course of the Study>

1. Evaluation of Potential Impacts

- 1.1 Survey, sampling and analysis of involuntary resettlement, noise and vibration
- 1.2 Site survey of surrounding ecosystems as well as flora, fauna and biodiversity
- 1.3 Selection of protection areas (environmentally sensitive places) and measures against adverse impacts
- 1.4 Impacts analysis of project implementation works and mitigation of adverse impacts

2. Environmental Management Plan

- 2.1 Preparation of an environmental management plan

3. Land Acquisition and Resettlement Plan

- 3.1 Preparation of a land acquisition plan
- 3.2 Preparation of a resettlement action plan
- 3.3 Preparation of a monitoring plan

4. Stakeholders Analysis and Holdings of Stakeholders' Meetings (Hosted by MOR in collaboration with JICA)

- 4.1 Selection of Stakeholders' such as related agencies in the level of state, university, NGOs and community
- 4.2 Holdings of Stakeholders' Meetings
- 4.3 Recording of the minutes of Stakeholders' Meetings
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Tentative Schedule

Duration (months)		Year 1											Year 2					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Work by JICA	Work in India		—————										—————					
	Work in Japan	—				—			—			—			—			—
	Reports		Ic/R		P/R1			It/R1			P/R2			It/R2			Df/R	F/R

Note: MOR will submit the RITES Study Report and all the relevant data/information to JICA Study Team December 2006.

Data and information available with RITES during the course of the final study shall also be made available to the JICA team

Abbreviation

Ic/R: Inception Report

P/R: Progress Report

It/R: Interim Report

Df/R: Draft Final Report

F/R: Final Report



