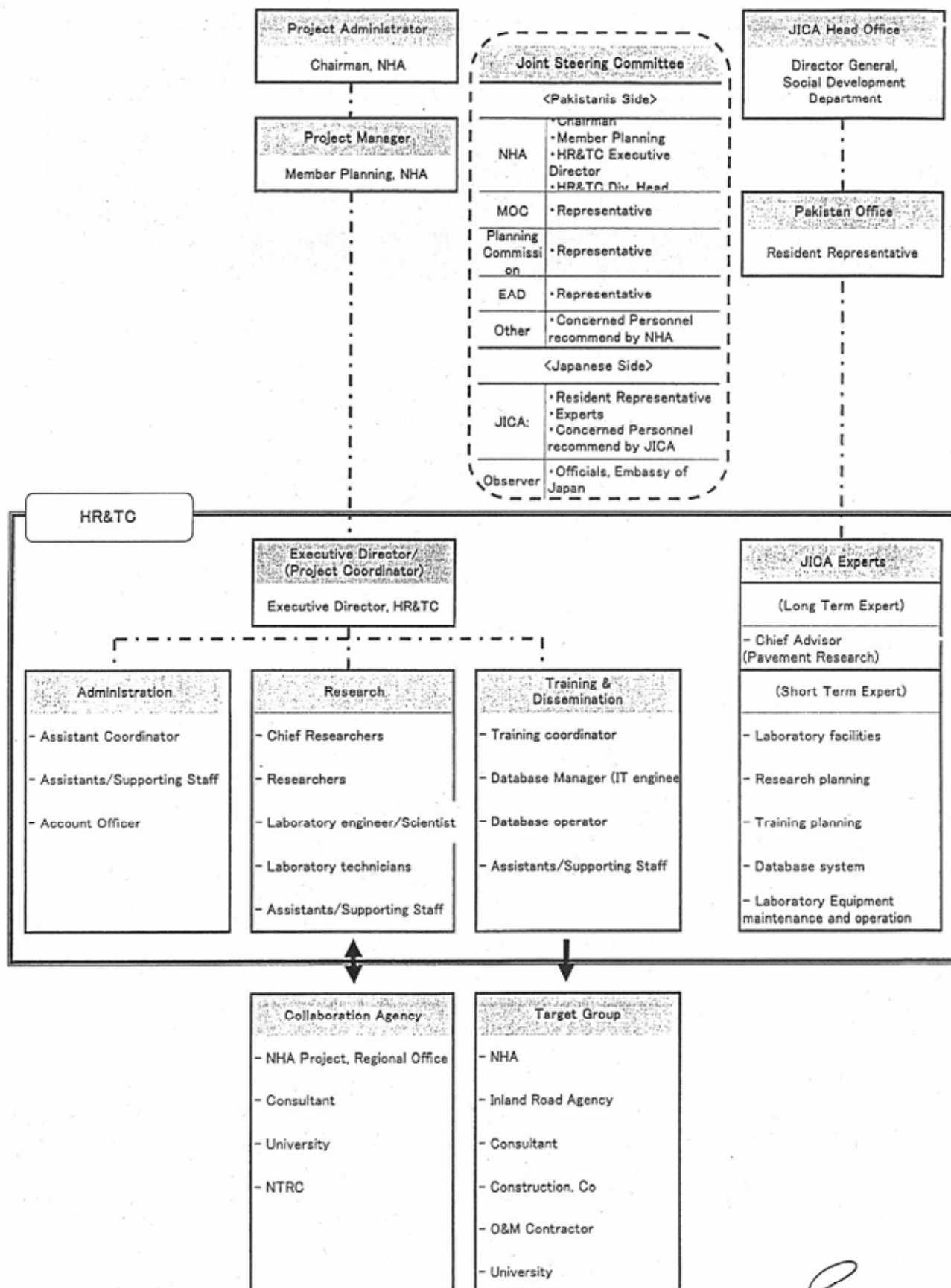


Organization Chart of the HR&TC Technical Cooperation Project (Tentative)



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List of Counterpart Personnel (Tentative)

Profession	2007				2008				2009				2010				2011				Remarks
	I	II	III	VI	I	II	III	VI	I	II	III	VI	I	II	III	VI	I	II	III	VI	
Administration																					
Project Administrator																					NHA Chairman
Project Manager																					NHA Member Planning
Executive Director																					Concurrent with Chief Researcher
Research																					
Chief Researcher																					Concurrent with Executive Director
Researchers,																					NH IP concern
Laboratory Engineer																					
Laboratory Technicians																					NH IP concern
Mechanicians																					
Training/Dissemination																					
Training coordinator																					
Training assistant																					
IT engineer																					
IT operators																					
Public Relation Officer																					

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List of Equipment (Provisional)

1. Pavement Laboratory Equipment

- 1) Soil test
- 2) Aggregate test
- 3) Asphalt test
- 4) Cement Concrete
- 5) Field test
- 6) Truck test

2. Database Systems (Hardware)

- 1) Network equipment
- 2) Servers
- 3) Client PCs

5. Visual Equipment

- 1) Multi media projector

Note:

- * More specific equipment list will be prepared and attached into R/D along with the equipment list for NHIP Pavement research study.
- * Contents, specifications and quantity of the equipment will be prepared during the Technical Cooperation with collaboration of the Experts and Counterparts and finalized through mutual consultations within the allocated budget of the Japanese fiscal year.

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RECORD OF DISCUSSIONS
BETWEEN JAPAN INTERNATIONAL COOPERATION AGENCY AND
AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE ISLAMIC REPUBLIC OF PAKISTAN
ON JAPANESE TECHNICAL COOPERATION
FOR
HIGHWAY RESEARCH AND TRAINING CENTRE
(DRAFT)

The Japan International Cooperation Agency (hereinafter referred to as "JICA"), through its Resident Representative of JICA Pakistan Office, exchanged the views and had a series of discussion with the related Pakistan authorities with respect to desirable measures to be taken by JICA and the Government of Pakistan (hereinafter referred to as "GOP") for the successful implementation of the Technical Cooperation for HR&TC (hereinafter referred to as "the Technical Cooperation").

As a result of discussion, and in accordance with the provisions of the Agreement on Technical Cooperation between the Government of Japan and the GOP signed in Islamabad on April 30th 2005 (hereinafter referred to as "the Agreement"), JICA and the related Pakistani authorities agreed to the matters referred to in the document attached hereto.

Islamabad, 2006

Mr. Takao Kaibara
 Resident Representative
 Pakistan Office
 Japan International Cooperation Agency

Mr. Maj. Gen. Farrukh Javed
 Chairman
 National Highway Authority
 Government of Pakistan

Mr. Firdas Alam
 Joint Secretary
 Ministry of communications
 Government of Pakistan

Ms. Najma Siddiqi
 Joint Secretary
 Economic Affairs Division
 Ministry of Economic Affairs and Statistics
 Government of Pakistan

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND GOP

1. GOP will implement project for the Establishment of Highway Research and Training Centre (hereinafter referred to as "the Project") of NHA, and at the initial stage of the Project, GOP will implements it in cooperation with JICA as a Technical Cooperation Project (hereinafter referred to as "the Technical Cooperation").
2. The Technical Cooperation will be implemented within the time framework given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provisions of Article III of the Agreement, JICA will take, at its own expense, the following measures according to the normal procedures of its technical cooperation scheme.

1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II. The provision of Article V of the Agreement will be applied to the experts.

2. PROVISION OF MACHINERY AND EQUIPMENT

JICA will provide machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Technical Cooperation listed in Annex III. The provision of Article VII of the Agreement will be applied to the Equipment.

3. TRAINING OF PAKISTANI PERSONNEL IN JAPAN

JICA will receive the Pakistani personnel connected with the Technical Cooperation for technical training in Japan.

III. MEASURES TO BE TAKEN BY GOP

1. GOP will take necessary measures to ensure the self-reliant and self-sustainable operation of the Project during and after the period of Japanese technical cooperation, through full and active involvement in the Technical Cooperation by all related authorities, beneficiary groups and institutions.




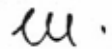
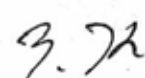

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2. GOP will ensure that the technologies and knowledge acquired by the Pakistani nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of the Islamic Republic of Pakistan.
3. In accordance with Article V of the Agreement, GOP will grant privileges, exemptions and benefits to the Japanese experts mentioned in II-1 and their families.
4. In accordance with Article VII of the Agreement, GOP will take the measures necessary to receive and use the Equipment mentioned in II-2 and equipment, machinery and materials carried in by the Japanese experts mentioned in II-1.
5. GOP will take necessary measures to ensure that the knowledge and experience acquired by the Pakistani personnel from technical training in Japan will be utilized effectively in the course of the Project.
6. In accordance with Article V of the Agreement, GOP will provide the services of Pakistani counterpart as technical personnel and administrative personnel as listed in Annex IV.
7. In accordance with Article V of the Agreement, GOP will provide the buildings and facilities as listed in Annex V.
8. In accordance with the laws and regulations in force in the Islamic Republic of Pakistan, GOP will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Technical Cooperation.
9. In accordance with the laws and regulations in force in the Islamic Republic of Pakistan, GOP will take necessary measures to meet the running expenses necessary for the implementation of the Technical Cooperation.

IV. ADMINISTRATION OF THE TECHNICAL COOPERATION

1. Chairman of NHA as the Administrator of the Technical Cooperation, will bear overall responsibility for the administration of the Technical Cooperation.
2. Member planning of NHA, as the Manager of the Technical Cooperation, will be responsible for the managerial and coordination matters of the Technical Cooperation.

3. The Japanese Chief Adviser will provide necessary recommendations and advice to the Administrator and Manager of the Technical Cooperation on any matters pertaining to the implementation of the Technical Cooperation.
4. The Japanese experts will give necessary technical guidance and advice to Pakistani counterpart personnel on technical matters pertaining to the implementation of the Technical Cooperation.
5. For the effective and successful implementation of the Technical Cooperation, a Joint Steering Committee will be established whose functions and composition are described in Annex VI.

V. JOINT EVALUATION

Evaluation of the Technical Cooperation will be conducted jointly by JICA and the Pakistani authorities concerned, in the middle and during the last six months of the cooperation term in order to evaluate the level of achievement and monitor the process of the Technical Cooperation.

VI. CLAIMS AGAINST JAPANESE EXPERTS

In accordance with the provision of Article VI of the Agreement, GOP undertakes to bear claims, if any arises, against the Japanese experts engaged in the Technical Cooperation resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Islamic Republic of Pakistan except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and GOP on any major issues arising from, or in connection with this Attached Document.

VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE TECHNICAL COOPERATION

For the purpose of promoting support for the Technical Cooperation among the people of the Islamic Republic of Pakistan, GOP will take appropriate measures to make the Technical Cooperation widely known to the people of the Islamic Republic of Pakistan.

IX. TERM OF COOPERATION




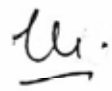

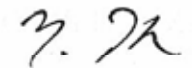
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The duration of the Technical Cooperation under this Attached Document will be five years and it will be divided into two phases

LIST OF ANNEXES

- | | |
|------------|--|
| ANNEX I | MASTER PLAN |
| ANNEX II | LIST OF JAPANESE EXPERTS |
| ANNEX III | MACHINERY AND EQUIPMENT |
| ANNEX IV | LIST OF PAKISTANI COUNTERPART AND ADMINISTRATIVE PERSONNEL |
| ANNEX V | LIST OF BUILDINGS AND FACILITIES |
| ANNEX VI | JOINT STEERING COMMITTEES |
| ANNEX VII | PROJECT DESIGN MATRIX (PDM)
*latest Version of PDM will be attached |
| ANNEX VIII | TENTATIVE PLAN OF OPERATIONS
*latest Version of PO will be attached |

ANNEX I

MASTER PLAN

1 Super Goal:

Durable, economical, safe and environment friendly Highways are built, maintained and operated efficiently

2 Overall Goal:

"Indigenous Standards" for highways suiting local conditions developed by HR&TC are applied for construction, maintenance and operations.

**Indigenous Standards" includes "Specification, Guideline and Manual" in addition to the standard.

3 Technical Cooperation Purpose:

Institutional framework and system of research and training for highway construction, maintenance and operations are developed

4 Technical Cooperation Outputs:

- 1) Research and Training facilities necessary for Pavement and related field are developed
- 2) Research reports and/or draft of "Indigenous Standards" in Pavement and related technology are developed
- 3) Output of Pavement and related fields research are disseminated to concerned personnel.
- 4) Researcher, Engineers and Technicians are trained for Pavement and related technology.

5 Technical Cooperation Activities

<Phase I>

- 1-1-1 Prepare master plan of HR&TC with tentative building layout
- 1-1-2 Prepare specification and TOR and coordinate design activities of Pavement and related research and training facilities
- 1-1-3 Advice for design and construction of HR&TC facilities for concerned NHA officials
- 1-1-4 Prepare equipment lists and specification
- 1-1-5 Procure and setup equipment.
- 2-1-1 Prepare master plan of HR&TC research activities
- 2-1-2 Prepare detail plan of Pavement research based on the master plan.
- 2-1-3 Conduct Pavement research based on the plan.
- 2-1-4 Prepare future plan for other related research (i.e. Traffic safety, Environment)



- 3-1-1 Prepare database system design and specification
- 3-1-2 Develop database system
- 3-1-3 Input accumulated information and research record
- 4-1-1 Prepare master plan of training program in HR&TC
- 4-1-2 Prepare training and seminar plan on Pavement technology
- 4-1-3 Develop training curriculum and texts
- 4-1-4 Conduct in-service training of HR&TC counterparts
- 4-1-5 Conduct training and/or seminar for concerned Researchers, Engineers and Technicians.

<Phase II>

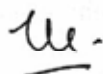
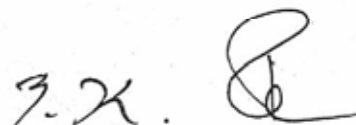
- 1-2-1 Study and prepare layout and specification of additional facilities necessary for Pavement and related research and training.
- 1-2-2 Advice for design and construction of HR&TC facilities for concerned NHA officials
- 2-2-1 Conduct Pavement research based on the plan.
- 2-2-2 Conduct Pavement related research based on the plan (i.e. Traffic safety, Environment)
- 2-2-3 Integrate research result and create research report
- 2-2-4 Develop "Indigenous Standards" drafts based on the research output.
- 3-2-1 Input data, record and literature of Pavement and related technology into database.
- 3-2-2 Provide accumulated information of Pavement and related technology by publication and/or Web-site.
- 3-2-3 Consult with NHA Officials on dissemination of research output to concerned personnel/organizations.
- 4-2-1 Develop training curriculum and text
- 4-2-2 Conduct in-service training of HR&TC counterparts
- 4-2-3 Conduct training and seminar for concerned Researchers, Engineers and Technicians.

*Detail plan of 2nd phase will be reviewed during 1st phase, based on the evaluation of the progress and achievements of 1st phase.

6 TECHNICAL COOPERATION SITE

National Highway Authority, Highway Research and Training Center, and National Highway in Pakistan

Note: In case the Master Plan needs to be modified, both sides will agree on and confirm such modifications in minutes of meeting.

ANNEX II

LIST OF JAPANESE EXPERTS

1. Long-term experts: 1 person
 - Chief Advisor/ Organizational Designing and Research Planning (Phase I)
 - Chief Advisor/Road Pavement (Phase 2)

2. Short-term experts
(about 2~4 per year)
 - Laboratory facilities
 - Research planning
 - Training planning
 - Database system
 - Laboratory Equipment maintenance and operation

Notes: Field, number and term of assignment of long- and short-term experts will be decided through mutual consultation at the beginning of each Japanese fiscal year.

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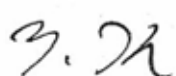

ANNEX III

MACHINERY AND EQUIPMENT

Machinery and equipment necessary for the implementation of the Technical Cooperation will be provided by the Government of Japan within budgetary limitations. The list of machinery will be prepared in the phase I of the Technical Cooperation, with collaboration of the Experts and counterparts.

Also, input of necessary machinery and equipment will be added through mutual consultation throughout the Technical Cooperation, though it is subject to JICA's budgetary constraint.

*Latest Version of Equipment List will be attached


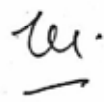


   

ANNEX IV

LIST OF PAKISTANI COUNTERPART AND ADMINISTRATIVE PERSONNEL

For the effective and successful implementation of the Technical Cooperation, following counterparts will be assigned.

1. Administrator of the Technical Cooperation:
Chairman, NHA
2. Manager of the Technical Cooperation:
Member Planning, NHA
3. Counterpart Staff:
NHA will assign following counterpart staff for the successful implementation of the Technical Cooperation
 - a) HR&TC Executive Director
 - b) Chief researcher
 - c) Researchers
 - d) Laboratory technicians
 - e) IT engineer
 - f) Training coordinator
4. Assistants/Supporting Staffs
5. Other personnel mutually agreed upon if necessary

ANNEX V

**LIST OF LAND, BUILDINGS AND FACILITIES NECESSARY FROM
PAKISTANI SIDE**

Until the completion of the building of the HR&TC, NHA will arrange substitute office and laboratory for implementation of the Technical Cooperation. The substitute office and laboratory will be equipped with the following facilities:

1. JICA Experts and Counterparts room
2. Administrative room
3. Space for pavement testing equipment
4. Electricity, telephone and water supply
5. Testing equipment
6. Vehicles
7. Meeting room
8. Store room

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ANNEX VI

JOINT STEERING COMMITTEE

1. Function

For the effective and successful implementation of the Technical Cooperation, the Joint Steering Committee will be established in order to make decisions relevant to the Technical Cooperation. The Joint Steering Committee will meet when necessary and at least once a year in order to fulfill the following functions:

- (1) To formulate annual work plan of the Technical Cooperation based on the Plan of Operations (P/O) and Work Breakdown Structure (WBS)
- (2) To review the results of the annual work plan and the progress of the Technical Cooperation
- (3) To exchange views and ideas on major issues those arise during the implementation period of the Technical Cooperation
- (4) To evaluate PDM during the course of the Technical Cooperation and suggest revision, if necessary.

2. Committee members

The committee will be composed of the chair and the members. The rules and guidelines for the management of the committee will be determined at the initial stage of the Technical Cooperation. The possible composition might be as follows:

(1) Chairperson:

Chairman, NHA

(2) Members on Pakistani side

Member Planning

HR&TC Executive Director

Representative of MOC

Representative of Planning Commission

Representative of EAD

Other personnel recommended by NHA

(3) Members on Japanese side

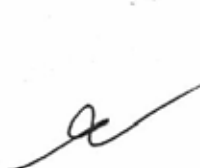
Resident Representative of Pakistan Office, JICA

JICA Experts


Officials, Embassy of Japan (Observer)

Other personnel recommended by JICA

The member list will be completed at the comment



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