NO.

BASIC DESIGN STUDY REPORT

ON

THE PROJECT FOR IMPROVEMENT OF

FIRE FIGHTING EQUIPMENT AND MAINTENANCE

WORKSHOP

IN

MONGOLIA

FEBRUARY 2002

JAPAN INTERNATIONAL COOPERATION AGENCY

FIRE PROTECTION EQUIPMENT AND SAFETY CENTER OF JAPAN

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PREFACE

In response to a request from the Government of Mongolia, the Government of Japan decided to conduct a basic design study on the project for improvement of fire fighting equipment and maintenance workshop in Mongolia and entrusted the study to the Japan International Cooperation Agency(JICA).

JICA sent to Mongolia a study team from August 18 to September 12, 2001.

The team held discussions with the officials concerned of the Government of Mongolia, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Mongolia in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Mongolia for their close cooperation extended to the teams.

February 2002

Takao Kawakami
President
Japan International Cooperation Agency

Letter of Transmittal

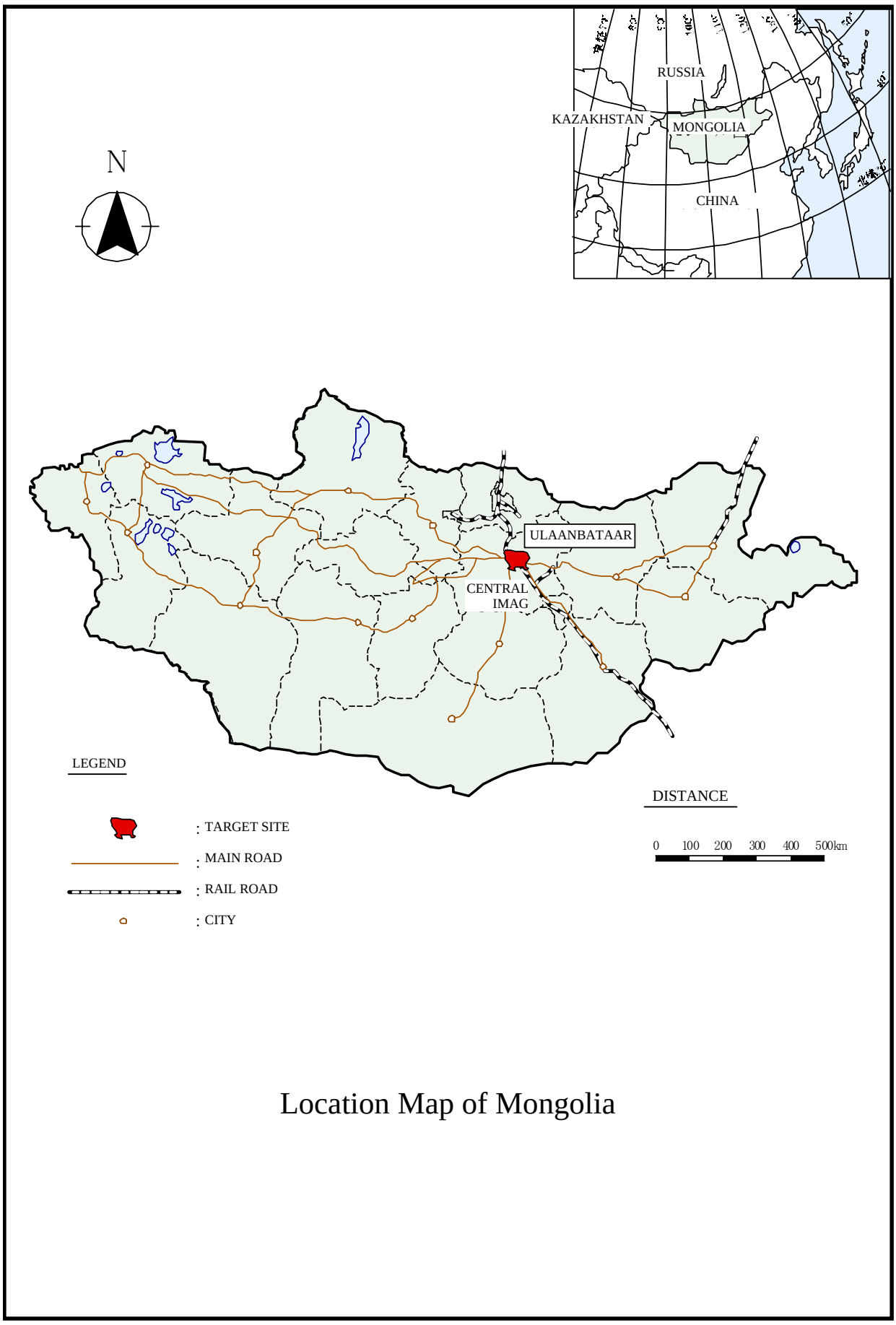
We are pleased to submit to you the basic design study report on the project for improvement of fire fighting equipment and maintenance workshop in Mongolia.

This study was conducted by Fire Protection Equipment & Safety Center of Japan, under a contract to JICA, during the period from August 2001 to February 2002. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Mongolia and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

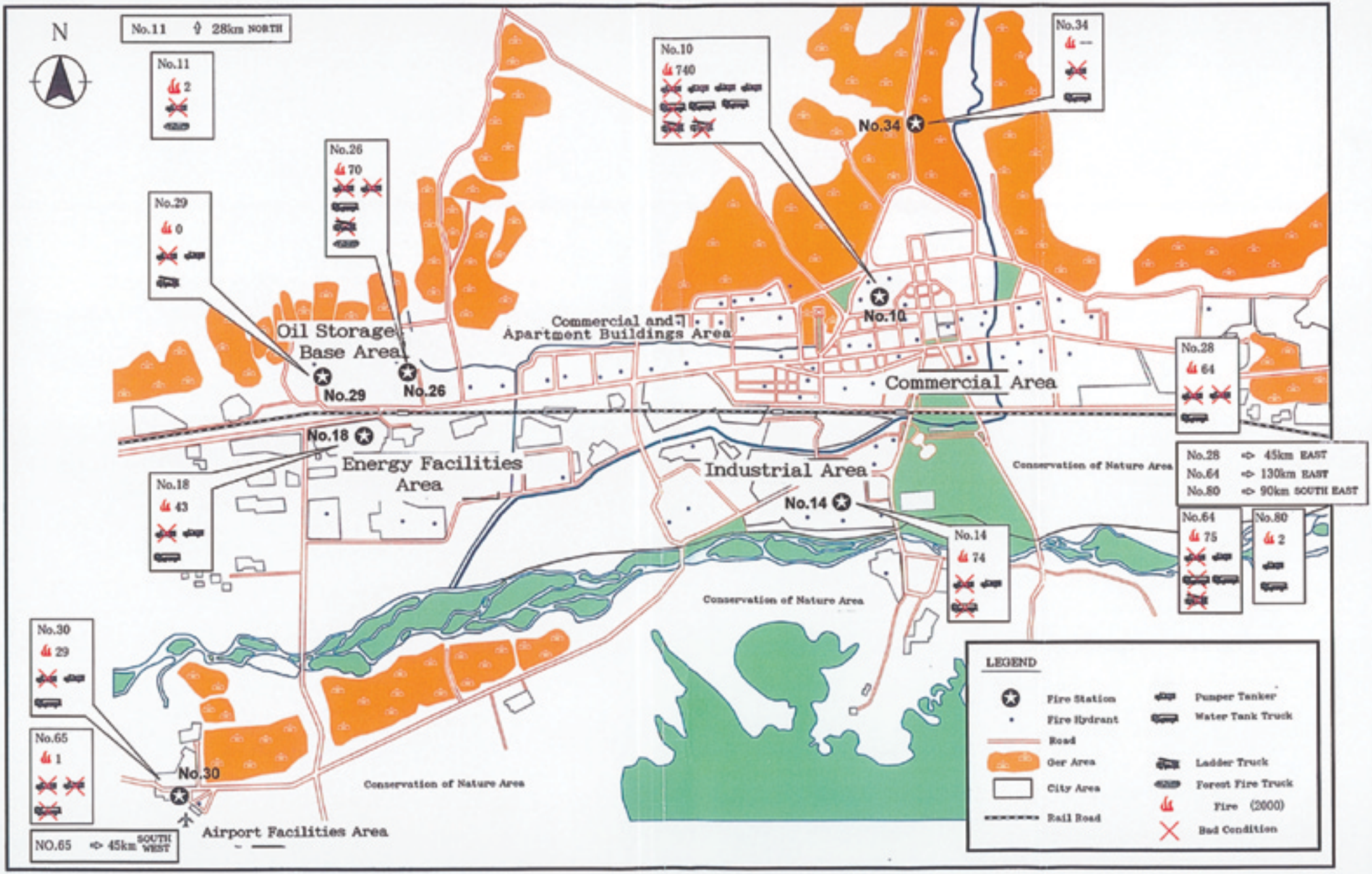
Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Ken Saito
Project manager,
Basic design study team on the project for improvement of fire fighting equipment and maintenance workshop in Mongolia.
Fire Protection Equipment & Safety Center of Japan



Location Map of Mongolia



PROJECT AREA (ULAANBATAAR CITY)

SUMMARY

SUMMARY

Mongolia is an inland country located between Russia and China with the population of about 2.4 million. Owing to large-scale transition from the social system carried out in 1990, the country continues to experience difficulties in implementing minimum public administration service required for civil life.

The population of the capital city Ulaanbaatar and its suburbs has swollen to some 780,000 (as of 2000) as a result of rapid concentration of population that followed the transition to the market economy and continues to increase. The concurrent proliferation of densely populated areas without fire protection (the ger district) has also contributed to the increase in the number of annual fire incidents from 571 in 1995 to 1,100 in 2000. Possibility for massive fires of special types, as a result of changing industry organization, i.e. fires involving high rise buildings or hazardous substances, as well as fires in suburban forests or at grassland that threaten urban areas has also increased rapidly.

The Government of Mongolia (hereinafter referred to as “the GOM”) has designated the reform of social and legal system as one of the priority measures in the Action Programme 2000-2004 and has placed emphasis on "collaboration between the Fire Fighting Department of the central government and those of local governments," "strengthening of the law related to fire prevention," "improvement and expansion of the fire service strength" and "the enactment of fire regulations comparable to international standards" as fire service-related policies. In addition, the GOM has been seeking to improve and expand the fire fighting system at the Ulaanbaatar Fire Fighting Section (hereinafter referred to as “UBFS”) to protect the lives and assets of the citizens, natural environment and resources of Ulaanbaatar from fire damage, although the effort has so far failed to implement realistic measures for effective fire fighting activities due to its difficult fiscal situation.

Under these circumstances, the Fire Defence Agency of the Ministry of Justice and Home Affairs, which is the authority in charge of fire fighting and disaster prevention activities in general, and UBFS, which is under the jurisdiction of the Agency and is put in charge of fire fighting in Ulaanbaatar, are faced with the tasks set forth below.

- Inability to respond to rapidly-increasing incidents of fire as fire fighting activities are limited by decline in number of operable vehicles with the aging of fire fighting vehicles.

- Inability to respond to urban fires (e.g. fires involving high rise buildings or hazardous substances) as well as forest and grassland fires that occur frequently in the suburbs due to lack of useful equipments.
- Smooth operation of equipment and comprehensive fire fighting activities are limited due to ill-equipped radio communication facilities, resulting in inability to offer prompt response.
- Inability to realise the preparedness for mobilising vehicles and equipment that are minimally required in the event of fire as a result of not being able to perform sufficient maintenance of vehicles and equipment owing to financial difficulty.
- Inability to reflect the fire investigation results in fire prevention measures as a result of not being able to conduct sufficient investigation of fire cases due to lack of laboratory equipment.

To deal with this situation, the GOM has requested the Government of Japan to offer grant aid in provision of fire fighting-related equipment and their maintenance equipment with regard to the fire fighting system that comprises a part of public services required for securing the safety of the people.

Following the decision by the Government of Japan to implement the basic design study, the Japan International Cooperation Agency (JICA) sent its basic design study team to Mongolia from August 19 to September 12 of 2001. The study team held discussions with the Fire Defence Agency of the Ministry of Justice and Home Affairs, which is the implementing body on the Mongolian side and UBFS, which is in charge of operation and maintenance after the plan has been implemented, to discuss and confirm the content of the request while visiting UBFS Headquarters and 13 fire stations under the jurisdiction of UBFS to conduct a study and collect required data. In addition, a study on procurement situation was performed on Korean, Europian and American fire fighting vehicle manufacturers with regard to equipment procurement in view of making the procurement of vehicles specialising in fire fighting from a third country.

The study team then examined the content/scale that is required and is optimal for implementing the plan, calculated the estimated project cost and compiled it in the form of basic design. Based on this design, JICA sent an study team for explaining the outline of basic design from December 5 to December 12, 2001 to explain and discuss the outline of basic design. As a result, a basic agreement was reached with the GOM.

The basic design study offers basic design on content and scale of the project that is required and optimal for achieving the results of cooperation while proposing the content, scheme and points of concern of the activities that will have to be performed by Mongolia in achieving the results and goals of the project, while formulating the range and content of the plan to be implemented through Japan's grant aid.

The content of the plan proposed under this project is as shown below.

Equipment name	Planned quantity	Quantity by placement	Purpose
Pumper Tanker(10,000L)	2 units	Fire Station No. 10: 1 unit Fire Station No. 26: 1 unit	Ordinary fire extinguishing in districts where fire fighting water sources are not available
Pumper Tanker(4,000L) (2WD)	2 units	Fire Station No. 14: 1 unit Fire Station No. 64: 1 unit	Ordinary fire extinguishing as leading Pumper Tanker
Pumper Tanker(4,000L) (4WD)	4 units	Fire Station No. 10: 1 unit Fire Station No. 26: 1 unit Fire Station No. 30: 1 unit Fire Station No. 34: 1 unit	Ordinary fire extinguishing in districts where roads have not been built
Water Tank Truck(8,000L)	6 units	Fire Station No. 10: 1 unit Fire Station No. 14: 1 unit Fire Station No. 26: 1 unit Fire Station No. 30: 1 unit Fire Station No. 34: 1 unit Fire Station No. 64: 1 unit	Supplying water to leading Pumper Tanker
Chemical Truck	1 unit	Fire Station No. 29: 1 unit	Extinguishing oil fires
Ladder truck(35m)	1 unit	Fire Station No. 10: 1 unit	Extinguishing fire and rescue at high rise buildings
Floodlight Car	1 unit	Fire Station No. 10: 1 unit	Supporting fire fighting activities
Fire Suits Set	98 sets	At respective fire stations	Fire fighting activities
Knapsack-Type Fire Fighting Water Bags	66 sets	UBFS Headquarters	Extinguishing forest and grassland fires
Headquarters Radio Set	1 set	UBFS Headquarters	Reception of message, recognition and command
Fire Station Radio Set	12 sets	At respective fire stations	Command and communication between headquarters, fire companies and fire stations
Mobile Radio Set	38 sets	On respective Fire Vehicles	Command and communication between fire companies, headquarters and fire stations
Portable Radio Set	67 sets	UBFS Headquarters and respective fire stations	Command and communication between fire companies
Repeater	2 sets	At respective existing relay stations	Amplification and relay of radio communication between headquarters and fire stations
Photo Development Set	1 set	UBFS Headquarters	Preparation of fire investigation data
Fire Investigation Tool Set	2 sets	UBFS Headquarters	Investigation of fire causes
Equipment for Maintenance	1 set	UBFS Headquarters	Maintenance of fire vehicles

This plan is intended for recovering the fire service strength of UBFS and securing fire service strength in ger districts where fire fighting means are being lost and in districts where the likelihood of large-scale fire occurrence is high, and involves procurement and installation of new fire fighting equipment to the existing fire fighting facilities. For this reason, the following direct effects can be obtained as a result of implementing this plan.

- Deployment of fire fighting vehicles adapted to the road conditions of urban areas, realities of water facility and type of fire will make it possible to reduce the arrival time to the site of fire, prevent spreading of fire and diminish the expansion of damage.

- Deployment of fire fighting vehicles adapted to urban fires at high rise buildings and hazardous substance storage facilities and forest/grassland fires that are likely develop into large-scale disasters will make it possible to reduce the expansion of damage caused by these fires.

- Improvement of fire service radio communication and command system will not only make it possible to dispatch promptly to the site of fire but enable prompt fire fighting activities according to the realities of the fire through operation of fire companies based on accurate information and command and through integrated fire fighting activities.

- Availability of equipment for investigating the cause of fire will make it possible to investigate the cause of fire promptly and accurately, and reflect the results to the fire prevention measures

- Acquisition of technical and financial basic knowledge from software components will make it possible to build the foundation for effective equipment operation and maintenance.

The abovementioned effects will develop and improve the system and capacity of fire fighting at UBFS and at the same time protect the natural environment and resources from fire damage. Hence this plan will contribute to the improvement of administrative services that are required for securing the safety of the residents of Ulaanbaatar and is determined to be an appropriate project to be implemented through Japan’s grant aid.

It is desirable to take the following measures for the sake of efficiency, effectiveness and long-term viability of this plan.

(1) Fire prevention and measures against fire spreading in the ger district is the top priority in advancing the fire and disaster prevention measures as overwhelming majority (some 50%) of fires in Ulaanbaatar start in the ger district and residential areas. In this connection, it is important to take fire prevention measures by keeping in mind the flammability of ger and launch concrete fire prevention educational activities for the residents. In concrete terms, establishment of fire prevention system in the software realm such as: 1) fostering of fire prevention organisations; 2) public relations activities for the residents (concerning initial fire fighting, rescue and aid, evacuation and assistance for fire company); and 3) guidance for fire prevention of buildings, is needed in addition to improvements in the hardware realm such as improvement of fire fighting water sources.

(2) A systematic training that anticipates various fire fighting activity patterns such as mastering of basic and applied operation techniques that have been accumulated through activity results are important for effective and efficient operation of the equipment deployed through this project. Moreover, it is necessary to implement measures for infallible operation including mastering of technique required in operation and maintenance for using the latest fire fighting equipment and resource efficiently over a long term. In this connection, it is desirable to conduct a fire fighting training in Japan for the purpose of improving the skills related to personnel mobilisation and maintenance.

CONTENTS

Appendices