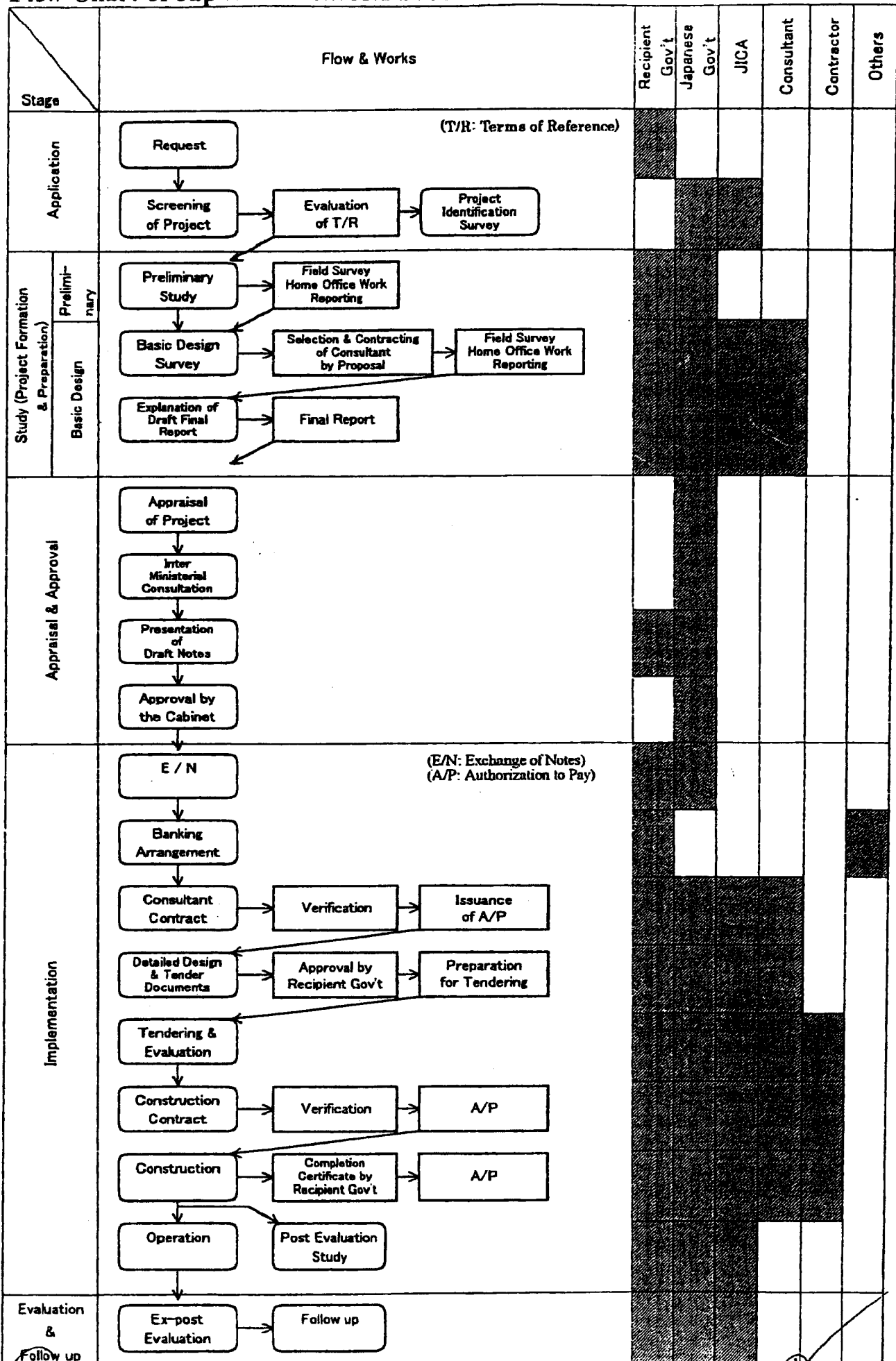
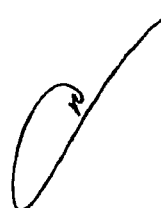


Flow Chart of Japan's Grant Aid Procedures



Necessary measures to be taken by the Government of the Philippines on condition that Japan's Grant Aid is extended.

1. To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the work.
2. To bear commissions to the Japanese bank to execute the banking services based upon the banking arrangement.
3. To ensure prompt unloading and customs clearance at port of disembarkation in the Philippines and facilitate internal transportation therein of the products purchased under the Grant.
4. To ensure the customs clearance at the port, inland transportation from the port to each site, and to bear the cost for bonded storage at the port.
5. To exempt Japanese nationals from custom duties, internal taxes and other fiscal levies which may be imposed in the Philippines with respect to the supply of the products and services under the verified contracts. And to take necessary measures for such tax exemption.
6. To accord Japanese nationals, whose services may be required in connection with the supply of products and services under the verified contracts, such facilities as may be necessary for their entry into the Philippines and stay therein for the performance of their work.
7. To use and maintain properly and effectively all the equipment purchased and facilities constructed under the Grant.
8. To bear all the expenses other than those covered by the Grant, necessary for the execution of the Project.
9. To provide necessary data and information for the project.
10. To assign exclusive counterpart engineers and technicians for the Project.



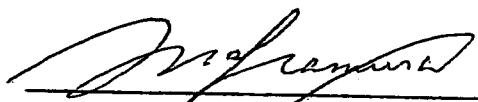
**MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR REHABILITATION OF THE FLOOD CONTROL
OPERATION AND WARNING SYSTEM IN METRO MANILA
IN THE REPUBLIC OF THE PHILIPPINES
(EXPLANATION ON DRAFT REPORT)**

In September 1999, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Project for Rehabilitation of the Flood Control Operation and Warning System in Metro Manila (hereinafter referred to as "the Project") to the Government of the Philippines (hereinafter referred to as "the GOP"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and consult the GOP on the components of the draft report, JICA sent to the Philippines the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Akira Nakamura, from February 23 to March 9, 2000.

As a result of discussions, both parties confirmed the main items described in the attached sheets.

Manila, March 2, 2000



Akira Nakamura
Leader
Draft Report Explanation Team
Japan International Cooperation Agency



Teodoro T. Encarnacion
Undersecretary
Department of Public Works
and Highway



ATTACHMENT

1. Components of the Draft Report

The Government of the Philippines agreed and accepted in principle the components of the draft report as explained by the Team.

2. Japan's Grant Aid Scheme

The Philippine side understands the Japan's Grant Aid Scheme described in Annex-1 of the Minutes of Discussions signed by both parties on March 3, 2000 and the necessary measures to be taken by the GOP as explained by the Team and described in Annex-2.

3. Final Report Submission Schedule

Based on the result of discussions of the draft report, JICA will complete the final report and send it to the GOP by April 2000.

4. Other Relevant Issues

4.1 In response to the request of DPWH for the allocation of proper frequencies to emergency radio communication system, National Telecommunications Commission (NTC) agreed to allocate the following four (4) frequencies for the Project. In this regard, DPWH will obtain official approval from NTC before March 8, 2000.

<u>Transmit (Tx)</u>	<u>Receive (Rx)</u>
409.100 MHz	414.100 MHz
409.125 MHz	414.125 MHz
409.700 MHz	414.700 MHz
409.850 MHz	414.850 MHz

4.2 It is confirmed that DPWH will provide sufficient counterpart budget for fiscal year 2000 and 2001 to cover the cost of works. With regard to the annual budget for EFCOS office, DPWH agreed to allocate 20 million pesos from the year 2002 as a required amount for the operation and maintenance.

- 4.3 DPWH and other relevant agencies will take all necessary measures to acquire the approval of Investment Coordinating Committee (ICC) by the end of April 2000.
- 4.4 DPWH will take necessary measures to obtain Environmental Compliance Certificate (ECC) from DENR at the earliest time possible.
- 4.5 As a result of discussion with DPWH, it is concluded that the emergency radio equipment needs to be deployed in 38 stations (refer to Annex-3).
- 4.6 DPWH will call a meeting with LGUs and project-related agencies to discuss the sharing of responsibilities for the operation and maintenance of the radio equipment. At the conclusion of the meeting, DPWH is requested to prepare a Memorandum of Agreement (MOA) with each of following LGUs and agencies concerned by the end of March 2000.
- LGUs: Rodriguez, San Mateo, Marikina City, Pasig City, Taguig, Pateros, Cainta, Taytay, Angono, Mandaluyong City, Makati City, Quezon City, San Juan, Manila
- Agencies: LLDA, NDCC/OCD, MMDA
- 4.7 DPWH made a request to the Team for technical guidance services under Japan's Grant Aid in terms of operation and management of the updated EFCOS system. The concept of the technical guidance services is described in Annex-4.
- 4.8 Due to the complaint of homeowners in the vicinity of Antipolo Repeater Station against raising the existing antenna, DPWH and the Team discussed to find an alternative measure and concluded that an open space can be provided by cutting trees to a certain height in order to facilitate telecommunication. This work is to be undertaken by EFCOS as part of its periodical maintenance work.
- 4.9 With regard to land acquisition for the proposed location of Aries rainfall gauging station, DPWH agreed to obtain an agreement from the legal landowner before the end of March 2000.
- 4.10 DPWH made a request to the Team for counterpart training in Japan in the fields of hydrology and telecommunications.

4.11 DPWH will take legal measures to exempt Japanese nationals from custom duties, internal taxes and other fiscal levies which may be imposed in the Philippines with respect to the supply of products and services under the verified contracts.



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JAPAN'S GRANT AID SCHEME

1. GRANT AID PROCEDURES

- 1) Japan's Grant Aid Program is executed through the following procedures.

Application (Request made by a recipient country)

Study (Basic Design Study conducted by JICA)

Appraisal & Approval (Appraisal by the Government of Japan and Approval by Cabinet)

Determination of Implementation (The Notes exchanged between the Governments of Japan and the recipient country)

- 2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the governments of Japan and the recipient country.

Finally, for implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. BASIC DESIGN STUDY

- 1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study")

conducted by JICA on a requested project (hereinafter referred to as “the Project”) is to provide the basic document necessary for the appraisal of the project by the Japanese Government. The contents of the Study are as follows:

- a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project’s implementation.
- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project
- e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the project is confirmed considering the guidelines of Japan’s Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measure is necessary to ensure its self-reliance in the implementation of the project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA select (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is (are) recommended by JICA to the recipient country to also work on the Project’s implementation after the Exchange of Notes, in order to maintain technical consistency.

3. JAPAN'S GRANT AID SCHEME

1) What is Grant Aid?

The Grant Aid program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under the principals in accordance with the relevant laws and regulations of Japan. Grant Aid is not in a form of donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consulting firm(s) and (a) contractor(s) and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport, or those of the recipient country, are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of products or services of a third country.

However, the prime contractors, namely, consulting, constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality, or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to taxpayers of Japan.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake necessary measures as follows:

- (1) To secure land necessary for the sites of the project and to clear, level and reclaim the land prior to commencement of the construction;
- (2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites;
- (3) To secure buildings prior to the procurement in case of installation of equipment;
- (4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid;
- (5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts;
- (6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work;
- (7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

(9) Banking Arrangements (B/A)

- a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay issued by the Government of the recipient country or its designated authority.

**Necessary measures to be taken by the Government of the Philippines
on condition that Japan's Grant Aid is extended.**

1. To secure land necessary for the sites of the Project and to clear, level, fence and reclaim the land prior to commencement of the work.
2. To bear commissions to the Japanese bank to execute the banking services based upon the banking arrangement.
3. To ensure prompt unloading and customs clearance at port of disembarkation in the Philippines and facilitate internal transportation therein of the products purchased under the Grant.
4. To ensure the customs clearance at the port, inland transportation from the port to each site, and to bear the cost for bonded storage at the port.
5. To exempt Japanese nationals from custom duties, internal taxes and other fiscal levies which may be imposed in the Philippines with respect to the supply of the products and services under the verified contracts. And to take necessary measures for such tax exemption.
6. To accord Japanese nationals, whose services may be required in connection with the supply of products and services under the verified contracts, such facilities as may be necessary for their entry into the Philippines and stay therein for the performance of their work.
7. To use and maintain properly and effectively all the equipment purchased and facilities constructed under the Grant.
8. To bear all the expenses other than those covered by the Grant, necessary for the execution of the Project.
9. To provide necessary data and information for the Project.
10. To assign counterpart engineers and technicians for the Project.

LIST OF EMERGENCY RADIO STATIONS (38 STATIONS)

1 Department of Public Works and Highways (DPWH) (21)

- (1) Central Office (Flood Forecasting Office)
- (2) National Capital Region (NCR) Office
- (3) Rosario Master Control Station, EFCOS Project

7 Engineering District Offices of NCR

- (4) North Manila Engineering District
- (5) South Manila Engineering District
- (6) Quezon City Engineering District
- (7) First Metro Manila Engineering District
- (8) Second Metro Manila Engineering District
- (9) Third Metro Manila Engineering District
- (10) Quezon City Sub-Engineering District

11 Pumping Stations of NCR

- (11) Binondo
- (12) Quiapo
- (13) Aviles
- (14) Valencia
- (15) Paco
- (16) Pandacan
- (17) Escolta
- (18) Sta. Clara
- (19) Makati
- (20) San Andres
- (21) Balete

2 Local Governments Units (14)

- (1) Marikina City
- (2) Pasig City
- (3) Makati City
- (4) Mandaluyong City
- (5) San Juan City
- (6) Quezon City
- (7) Manila City
- (8) Rodriguez (Montalban)
- (9) San Mateo
- (10) Taguig
- (11) Pateros
- (12) Cainta
- (13) Taytay
- (14) Angono

3 Related Organizations (3)

- (1) Laguna Lake Development Authority (LLDA)
- (2) National Disaster Coordinating Council (NDCC) / Office of Civil Defense (OCD)
- (3) Metro Manila Development Authority (MMDA)

**CONCEPT OF TECHNICAL GUIDANCE SERVICES UNDER JAPAN'S GRANT
AID FOR THE PROJECT FOR REHABILITATION OF THE FLOOD CONTROL
OPERATION AND WARNING SYSTEM IN METRO MANILA**

1. Objective

The present EFCOS system was established for the collection of precipitation and water level by telemetry system and the calculation of discharge for the gate operation. However, it takes too much time because the data are inputted manually and as a result the system is unable to make flood forecasting.

In this project, the system employs the automatic data collection and dissemination system with special features such as emergency water level indication, shortening the data transmission interval to every 10 minutes at the start of rain, and transformation of data from analog to digital. With the above-mentioned improved system, faster data processing makes an effective flood forecasting possible. Therefore, the major objectives of the technical guidance is to mitigate flood damage with the comprehensive achievement of operational skills by the EFCOS staff that makes fast and effective flood warning and gate operation possible.

2. Direct Effect

The major functions of EFCOS involve the collection and transmission of hydrological data, and the management and operation of control gate for the Pasig Marikina river basin. The direct effects of the EFCOS would be the increase of collected data, improvement of data processing capability, accurate flood forecasting, prompt operation of control gate and dissemination of flood warning as long as the present organizational body of EFCOS is appropriate. In consideration of the present organizational body of EFCOS, it is possible to operate and maintain the equipment procured under the project as long as the present organizational body concentrates on the above mentioned system.

In accordance with the improvement of the system, the technical guidance service seems to be an indispensable component of the project to train the personnel assigned for the system. The direct effects of such technical guidance are considered as follows:

Effect of Management Aspects

- (1) Upgrading of administrative capability of EFCOS personnel makes efficient and continuous overall operation and maintenance possible.
- (2) During the breakdown or conditional disorder of the system, the problem can be settled with the full utilization of flexibility, which the organizational body initially

possesses.

- (3) The personnel of EFCOS would be proud of the position to execute their duties with the official recognition that EFCOS is playing an important role of flood information dissemination.

Effect of Technical Aspects

- (1) The correction and adjustment of subtle difference between observed values and calculated values is conducted by EFCOS with full comprehension of the hydrological and hydraulic model.
- (2) For the flood forecasting system operation, the trained personnel can conduct the modification and upgrading of the hydraulic model in the future.
- (3) Prompt information dissemination to objective organizations with self-operation of flood forecasting systems can be possible (establishment of information networks).

3. Activities

The technical guidance needs to be provided in two different fields: the management assistance service (overall system management and operation) and the engineering assistance service (hydrological analysis). The contents of activities in each field are as follows:

(1) Overall Management and Operation of the System

The present EFCOS system has been operated based on the Operation and Maintenance Manuals prepared in 1993. In the project, it is necessary to prepare an updated manual, which involves the overall maintenance and operation system of flood control and warning system. The new manual involves the following:

- (a) Clear description of the organizational body for the system management and responsibilities.
- (b) Manual of the methodology of flood forecasting and warning.
- (c) Gate Operation Manual of Mangahan Floodway and Napindan Weir.
- (d) Manual for system maintenance and operation.
- (e) Manual for emergency radio waves.

(2) Hydrological Analysis

- (a) Instructing the procedures of flood forecasting systems and overall operation systems such as parameter values. The operation system and/or output on screen display are modified as much as possible upon request; simultaneously,

the systems can be adjusted for easier use.

- (b) The explanatory document of model structures is prepared for the purpose of the model modification implemented by the Philippine side in the future. The explanatory document involves the explanation of final model parameters.
- (c) The modification and updating of the model with the present data collection system are necessary because of the increase of data collected from the new observation stations. This factor is quite important to accumulate data, and to operate and improve the flood forecasting system by the Philippine side. Therefore, technological transfer is indispensable for the systems to be effective.

4. Service Component and Output in Each Term

Since this project has a higher possibility to be implemented as a single-term project, all services must be accomplished in the same term. Although it is quite difficult to show the output in a numerical value, the project should be evaluated with the skills of personnel improved by the training for a certain period of time from the viewpoint of appropriate management and operation of the system and equipment.

Since the staff for EFCOS originally have the basic abilities of data transmission and computers, the staff can, mechanically and proficiently, analyze and cope with problems of system functions using instruction manuals. Since the manuals and explanatory documents play important roles for the system operation, these two items can be considered as outputs of the technical guidance service. The following table indicates the output of each scheme:

<u>Service Component</u>	<u>Output</u>
1. Overall System Management and Operation	: System maintenance and management manual
2. Hydrological Analysis	: Explanatory document of hydrological and hydraulic model