

THE MINUTES OF MEETINGS
ON
THE MISSION FOR THE PREPARATORY SURVEY (PHASE 2)
ON
REHABILITATION OF KILLINOCHCHI WATER SUPPLY SCHEME
IN
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

In response to a request from the Government of the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "GoSL"), the Government of Japan decided to conduct a preparatory Survey (Phase 2) on Rehabilitation of Killinochchi Water Supply Scheme (hereinafter referred to as "the Project").

JICA sent to Sri Lanka the Preparatory Survey Team (hereinafter referred to as "the JICA Mission") which is headed by Mr. Yoshiki Omura, Senior Advisor, JICA, and is scheduled to stay in the country from 8 May 2011 to 25 June 2011.

The JICA Mission held discussions with the officials concerned of GoSL and conducted a field survey at the survey area.

In the course of discussions and field survey, both parties confirmed the main items described in the attached sheets. The JICA Mission will proceed to further works and prepare the preparatory survey report.

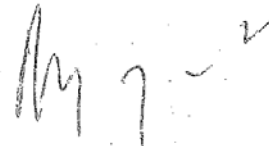
Colombo, 13 May 2011



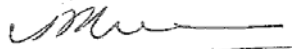
Mr. Yoshiki Omura
Leader
The Preparatory
Study Team
Japan International
Cooperation Agency
(JICA)



Mr. M P D U K Mapa Pathirana
Director General
Department of External Resources
Ministry of Finance and Planning



Mr. A. Abeygunasekara
Secretary
Ministry of Water Supply
and Drainage



Mr. Karunasena Hettiarachchi
Chairman
National Water Supply
and Drainage Board

ATTACHMENT

1. Objective of the Project

The Objective of the Project is the rehabilitation of the existing water supply scheme to bring it back to operational level.

2. Project Site

The site of the Project is located in Killinochchi as shown in **Annex-1**.

3. Responsible and Implementing Agency

3-1 The Responsible Organization is the Ministry of Water Supply and Drainage.

3-2 The Implementing Agency is the National Water Supply and Drainage Board (NWSDB).

The organization chart is shown in **Annex-2**.

4. Items requested by the Government of Sri Lanka

After discussions between the Sri Lanka side and the JICA Mission (hereinafter referred to as "the both sides"), the items described in **Annex-3** were finally requested by the Sri Lanka side.

The both sides confirmed that the appropriateness of the request would be examined in accordance with the further studies and analysis, and the final components of the Project would be decided by the Japanese side.

5. Japan's Grant Aid Scheme

5-1 GoSL understands the Japan's Grant Aid Scheme explained by the JICA Mission as described in **Annex 4**.

5-2 GoSL will take the necessary measures, as described in **Annex-5**, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

6. Schedule of the Survey

6-1 The consultant members of the JICA Mission will proceed to further studies in Sri Lanka until June 25, 2011.

6-2 JICA will prepare the survey report in English and dispatch a mission in order to explain its contents to GoSL around October 2011.

6-3 In case that the contents of the report are accepted in principal by GoSL, JICA will finalize the report and send it to the GoSL around December 2011.

6-4 GoSL understands that execution of the Preparatory Survey (hereinafter referred to as "the Survey") does not necessarily imply that the grant aid will be implemented.

7. Other Relevant Issues

In addition to the issues recorded in the previous minutes of meeting signed on 3 March 2011, the following were discussed and agreed:

7-1 Expansion Plan of A9 Road and Rehabilitation of Pipelines

Regarding the proposed transmission pipe and distribution pipe routes along the A9 road, the A9 road expansion project will be started before the commencement of the Project. Both sides recognized that the existing pipes will be located in the middle of expanded carriage way, which makes operation and maintenance of the pipes difficult, and there is a need of

relocation of pipeline to the road sides of the expanded A9 road. Also both sides recognized that the other existing transmission and distribution mains have the possibility of damages by bombardment during the conflict. Therefore both sides considered that it was preferable to install new pipeline for the transmission and distribution mains of the Project and leave the existing mains as they are. NWSDB agreed to install road crossing pipeline across the expanded A9 road at approximately 500m intervals.

7-2 Treatment of Wastewater of Hospitals

NWSDB explained that untreated wastewater is discharged by the Killinochchi District General Hospital directly to Dry Aru Tank, which was proposed as a water source for Killinochchi water supply scheme. NWSDB also explained that a nearby army camp is also discharging wastewater.

In view of water resource conservation, NWSDB proposed a plan to construct a wastewater treatment facility (stabilization pond system) for treating both wastewater from the hospital and the army camp.

The JICA Mission requested that the treatment facilities be made operable by the end of 2013 or the Project completion. NWSDB agreed to include this cost for the government budget of 2012 to meet the schedule.

NWSDB also explained that no wastewater from the Ayurvedic Hospital is drained to Dry Aru tank.

7-3 UXO disposal

NWSDB submitted "Current Status of Mine Action Map for Kandavalai DS Division as of April 27, 2011", which indicated that the project area was of low risk with respect to landmines. In this regard, the JICA Mission requested and NWSDB agreed to arrange the Technical Survey (TS) at least within the premises of Killinochchi Water Treatment Plant by October 2011.

Also during the previous survey, the JICA Mission recognized risks of unexploded ordnance (UXO) in addition to landmines. The JICA Mission requested and NWSDB agreed to conduct the following activities during the project period:

- i) With assistance of UN Mine Action Office, NWSDB shall organize a seminar on landmines and UXOs about current situations and how to deal with them when UXOs are discovered prior to the commencement of the construction works.
- ii) NWSDB shall facilitate Technical Survey (TS) of all the routes of transmission and distribution mains for UXO by November 2011. If any landmines/UXOs were found, NWSDB immediately reports to the UN Mine Action Office for disposal.
- iii) NWSDB shall report to the UN Mine Action Office and clear the landmines/UXOs, if found during the construction works.

7-4 Treatment of color and turbidity

In the previous field survey, NWSDB showed its concern of color, turbidity, Manganese and algae and requested the countermeasures. The Mission proposed introduction of up-flow roughing filtration as pre-treatment. NWSDB agreed the proposal.

7-5 Pipe material

In the previous field survey, NWSDB requested to utilize High-density Polyethylene (PE) pipes instead of PVC pipes for distribution network. After the previous field survey a comparative study was conducted about pipe material and, both sides agreed to utilize PVC pipes for the distribution network for the Project.

Both sides also agreed that for transmission mains, PE pipe will be used except for exposed sections, where Ductile Iron pipes are applied, and for house connections, PE pipes of 15mm and/or 20mm diameters will be used.

7-6 Installation of individual house connections

In the previous survey, NWSDB requested new 1500 individual connections under the Project. The JICA mission proposed that the Japanese side will provide pipe material and water meters for 1500 connections for NWSDB's installation work if NWSDB submitted justification of such quantity acceptable to JICA. NWSDB agreed to install 2000 connections including said 1500 connections for immediate maximization of benefit within one year after completion of the Project.

7-7 Proposed intake pit

NWSDB requested to locate the proposed intake pit off the existing intake pit and the JICA Mission agreed. Both sides agreed to study providing devices for minimizing inflow of algae into the proposed intake pit.

7-8 Soft component

NWDSB requested to include soft component comprising O&M training and preparing O/M manuals as follows:

- i) O&M of treatment plant
- ii) O&M of distribution system
- iii) Training of Electrical & Mechanical works
- iv) PE service connection work
- v) Water quality analysis

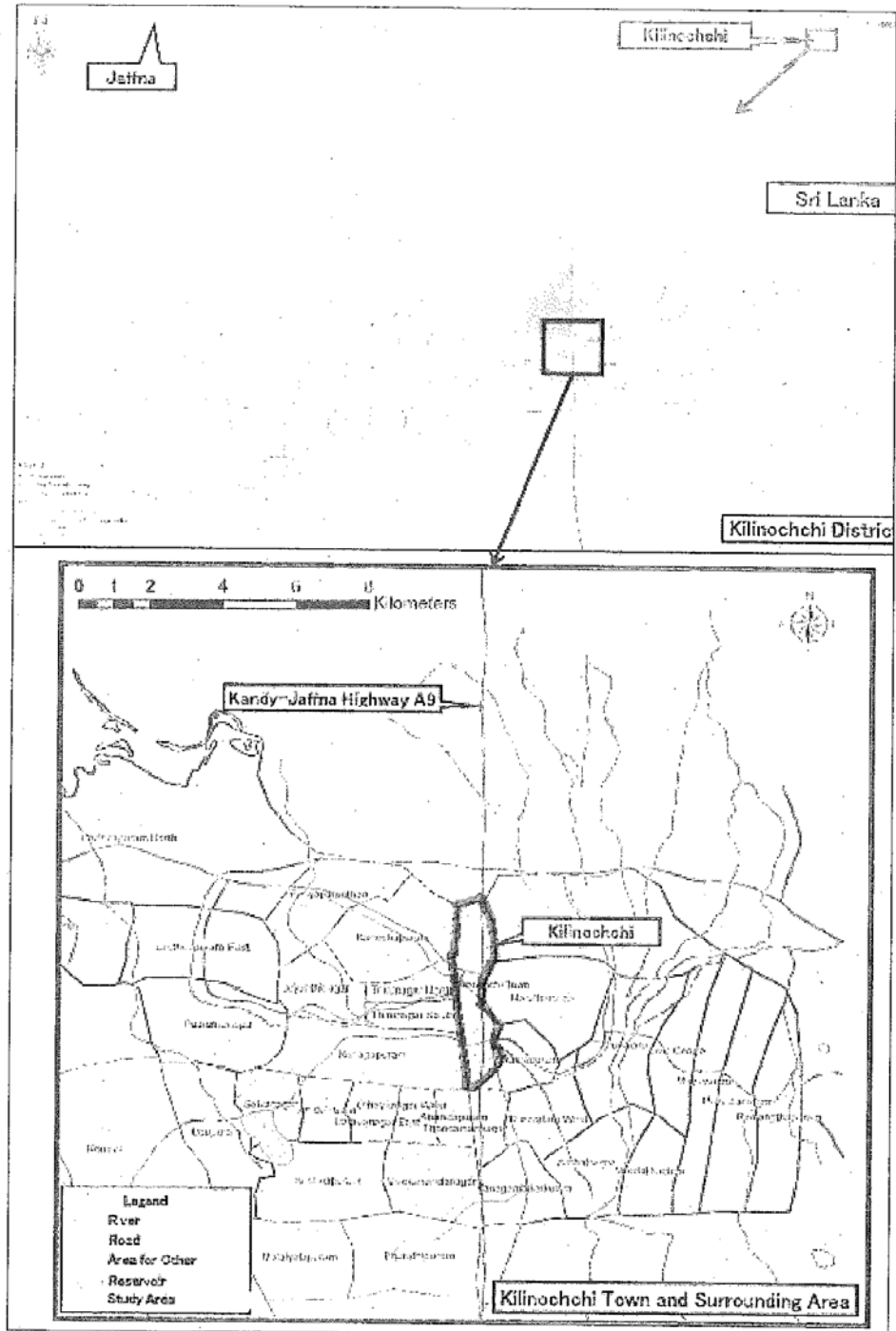
NWSDB emphasized that Killinochchi Water Supply Scheme requires manpower of 20 employees, who are mostly new recruits within the NWSDB approved cadre. The JICA Mission recognized the need of such training.

7-9 Elevated tower

NWSDB requested that the distribution system should have a single water tower comprising the existing capacity of 1,450m³ depending on the distribution model and soil condition.

END

PROJECT SITES MAP



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ORGANIZATION CHART

Annex-2

Organization Structure of the
National Water Supply & Drainage Board

Chairman & Board of Directors		DGM (IA)	
		Secretary	AGM (T&C) AGM (Co-ordination)
General Manager		DGM (P&A)	AGM (Personnel) AGM (Administration)
		DGM (Commercial)	AGM (Financial Accounts) AGM (Budgetary Control) AGM (Logistics & Projects) AGM (Revenue & Payments) AGM (Western)
	Addl. GM (Western)	DGM (Western - South)	AGM Dev. (Western - South) AGM (NRW)
		DGM (Western - Central)	AGM (O&M) Western - Central AGM Dev. (Western - Central)
	Addl. GM (Southern/ Eastern)	DGM (Western - North)	AGM Dev. (Western - North) AGM (Production)
		DGM (Sabaragamuwa & Uva)	AGM (Southern/ Eastern) AGM Dev. (Sabaragamuwa) AGM (Uva)
	Addl. GM (Northern/ Central)	DGM (East)	AGM Dev. (East)
		DGM (Southern)	AGM Dev. (Southern)
	Addl. GM (Corporate Services)	DGM (Central)	AGM Dev. (Central)
		DGM (North - Western)	AGM Dev. (North - Western)
	Addl. GM (Sewerage)	DGM (North - Central)	AGM Dev. (North - Central)
		DGM (North)	AGM Dev. (North)
	Addl. GM (Water Supply Projects)	DGM (M&E Services)	AGM (Northern/ Central) AGM (M&E Services)
		DGM (IT)	AGM (IT - Information & Services) AGM (IT - Application Development) AGM (Supplies) AGM (MDT)
	Addl. GM (Policy & Planning)	PDs	AGM (Sewerage Operations) AGM (Sewerage Projects) AGM (P&D Sewerage)
		PDs DGM (Project Co-ordination)	AGM (Japanese Projects) AGM (P&D N/C)
		DGM (P&D)	AGM (P&D Western) AGM (P&D MAE) AGM (P&D Documentation) AGM (P&D S/E) AGM (Construction)
		DGM (Dev.)	AGM (Surface Water Resources) AGM (GW Resources & Invecl.)
		DGM (CP)	AGM (MIS) AGM (Policy & Strategy) AGM (Research & Development) AGM (Rural Water Supply)

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Items requested by the Sri Lankan side

No.	Description
①	Intake and catchment protection
②	Supply and installation of LL & HL pumps & generators
③	Rehabilitation of existing 3000cu.m per day capacity water treatment plant, clear water sump, HL pump house and installation of transmission main
④	Construction of 1000 cu.m water tower in Killinochchi Town
⑤	Construction of 450 cu.m water tower at Paranthan
⑥	Rehabilitation of 300mm dia Raw water main
⑦	Supply and laying of 300 mm dia treated water transmission mains
⑧	Supply and laying of 225-90 mm dia 40km uPVC distribution system
⑨	Supply & installation of gas chlorinators
⑩	Construction of quarters, office building & stores
⑪	Vehicles for Operation and Maintenance works (Crew Cab 1 unit, Pick up truck 1 unit)
⑫	O&M Equipment (under-pressure tapping machine 2 units, personal computer 2 units, printer 2 units, LCD projector 1 unit) and laboratory equipment (colorimeter (temperature, turbidity and color) 1 unit, microscope 1 unit, Electrical Conductivity meters 2 units, pH meters 2 units and Residual chlorine meter 2 units)
⑬	Soft (Non-Physical) Components: Capacity building training program

JAPAN'S GRANT AID SCHEME

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on the law and the decision of the Government of Japan (hereinafter referred to as "the GOJ"), JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

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

1. Grant Aid Procedures

The Japanese Grant Aid is conducted as follows-

- Preparatory Survey (hereinafter referred to as "the Survey")
 - The Survey conducted by JICA
- Appraisal & Approval
 - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Determination of Implementation
 - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as "the G/A")
 - Agreement concluded between JICA and a recipient country
- Implementation - Implementation of the Project on the basis of the G/A

2. Preparatory Survey**(1) Contents of the Survey**

The aim of the Survey is to provide a basic document necessary for the appraisal of the Project by JICA and the GOJ. The contents of the Survey are as follows:

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

The contents of the original request by the recipient country 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 the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures are 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 Survey, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

The Report on the Survey is reviewed by JICA, and after the appropriateness of the Project is confirmed, JICA recommends the GOJ to appraise the implementation of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a plea for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

The consultant firm(s) used for the Survey will be recommended by JICA to the recipient country to also work on the Project's implementation after the E/N and the G/A, in order to maintain technical consistency.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) 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 JICA. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex.

(6) "Proper Use"

The Government of the recipient country is required to maintain and use the facilities constructed and the 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.

(7) "Export and Re-export"

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

(8) 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 a bank in Japan (hereinafter referred to as "the Bank"). JICA 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 JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

(10) Social and Environmental Considerations

A recipient country must ensure the social and environmental considerations for the Project and must follow the environmental regulation of the recipient country and JICA socio-environmental guidelines.

(End) *i*

Major Undertakings to be taken by Each Government (Architecture)

* To be adjusted as appropriate for each project

NO	Items	To be covered by the Grant	To be covered by Recipient side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and/or elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		●
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame / panel (MDF) of the building		●
	b. The MDF and the extension after the frame / panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8.	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●

9 2

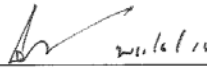
NO	Items	To be covered by the Grant	To be covered by Recipient side
9	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●)	(●)
10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
13	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)


9. 2

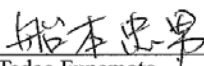
MINUTES OF THE MEETING ON 13TH JUNE 2011
ON
PREPARATORY STUDY
ON
REHABILITATION OF KILLINOCHCHI WATER SUPPLY SCHEME
IN
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

Agreed on 13th June 2011


Mr. D.S.D. Jayasiriwardene
Deputy General Manager
Planning & Design Section,
National Water Supply & Drainage Board

D.S.D. JAYASIRIWARDENE
Deputy General Manager
(Planning & Design)
N.W.S. & D.B.
Ratmalana.


Mr. Duleep Goonewardene
Deputy General Manager
North,
National Water Supply & Drainage Board
Eng. Duleep Goonewardene
Deputy General Manager (North)
National Water Supply & Drainage Board
Vavuniya.


Mr. Tadao Funamoto
Chief Consultants
JICA Study Team

MINUTES OF THE MEETING

- I. Date and Time : 13th June 2011, 13:30-
- II. Place : NWSDB Killinochchi OIC Site
- III. Present : As shown in the attached attendants list
- IV. Discussions

The meeting was chaired by Mr. D.S.D Jayasiriwardene; Deputy General Manager, Planning & Design Section NWSDB. In the meeting mainly two subjects were discussed and confirmed, i.e. 1) the water supply system demarcation between the components under the Japan's Aid rehabilitation and the components taken under NWSDB's own scheme, and 2) the demarcation between the components taken under the Japan's Aid rehabilitation scheme and components taken under 2KR scheme, and.

1. Water Supply System Demarcation between the Japan's Aid Rehabilitation Scheme and NWSDB's Own Scheme

- 1) JICA Study Team explained the Japan's Aid rehabilitation scheme proposal of water supply system as shown in **Annex-1**.
- 2) Regarding the 1,000 m³ water tower the location is planned to be not inside the WTP premises but in the Killinochchi Central College premises for two reasons; to keep the WTP site for future augmentation of the plant, and the rigid underground soil condition of the Killinochchi Central College site.
- 3) Along the A-9 Road NWSDB will implement the water pipe crossings (including PVC pipe and RC casing) prior to the Japan's Aid rehabilitation scheme at the locations where RDA, NWSDB and JICA Study Team agreed on 30th May 2011.
- 4) A typical A-9 Road water pipe crossing section is as shown in **Annex-2**. Basically water pipes will be installed along outside of the curb at 15m from the road centre except some stretches. The stretches where the widths of the road are less than 15m, water pipes shall be installed outside from the pavement which will be covered by current road renovation works. RDA will check the locations for those stretches and report to NWSDB and JICA Study Team if any consideration is required by 24th June 2011.
- 5) Regarding the water supply network the Japan's Aid rehabilitation scheme will cover approximately 40 km distribution system (excluding transmission) only spread over the area (preferable up to 110 mm diameter) as tentatively shown in **Annex-3-1** and **3-2**.
- 6) In addition to the above-mentioned network NWSDB will construct approximately 40 km water distribution pipelines also as shown in **Annex-3-1** and **3-2**.

- 7) As to the house connections the Japan's Aid rehabilitation scheme will provide fixing materials including pipes and water meters for both the Japan's Aid rehabilitation scheme distribution lines and NWSDB's own scheme lines.
- 8) NWSDB agreed the demarcation of the two components after the confirmation on site.

2. Demarcation between the Japan's Aid Rehabilitation Scheme and 2KR

- 1) JICA Study Team explained the Japan's Aid rehabilitation scheme proposal as follows,
 - The components which will be implemented under 2KR are as shown in **Annex-4-1**, and **4-2**.
 - Those will be implemented prior to the Japan's Aid rehabilitation scheme and there will no overlap between two schemes.
- 2) NWSDB agreed that a package plant will be installed separately from the existing water treatment plant.
- 3) Regarding to the rehabilitation of the administration building (including clear water reservoir and high lift pump house), NWSDB requested to implement prior to the commencement of the Japan's Aid rehabilitation scheme through 2KR.
- 4) JICA Study Team agreed that all of the civil works and architectural works including building utilities such as lighting, etc. for the administration building will be implemented by NWSDB under 2KR scheme.
- 5) The Japan's Aid rehabilitation scheme will take care of water treatment process mechanical and electric equipment works for the administration building.

3. Others

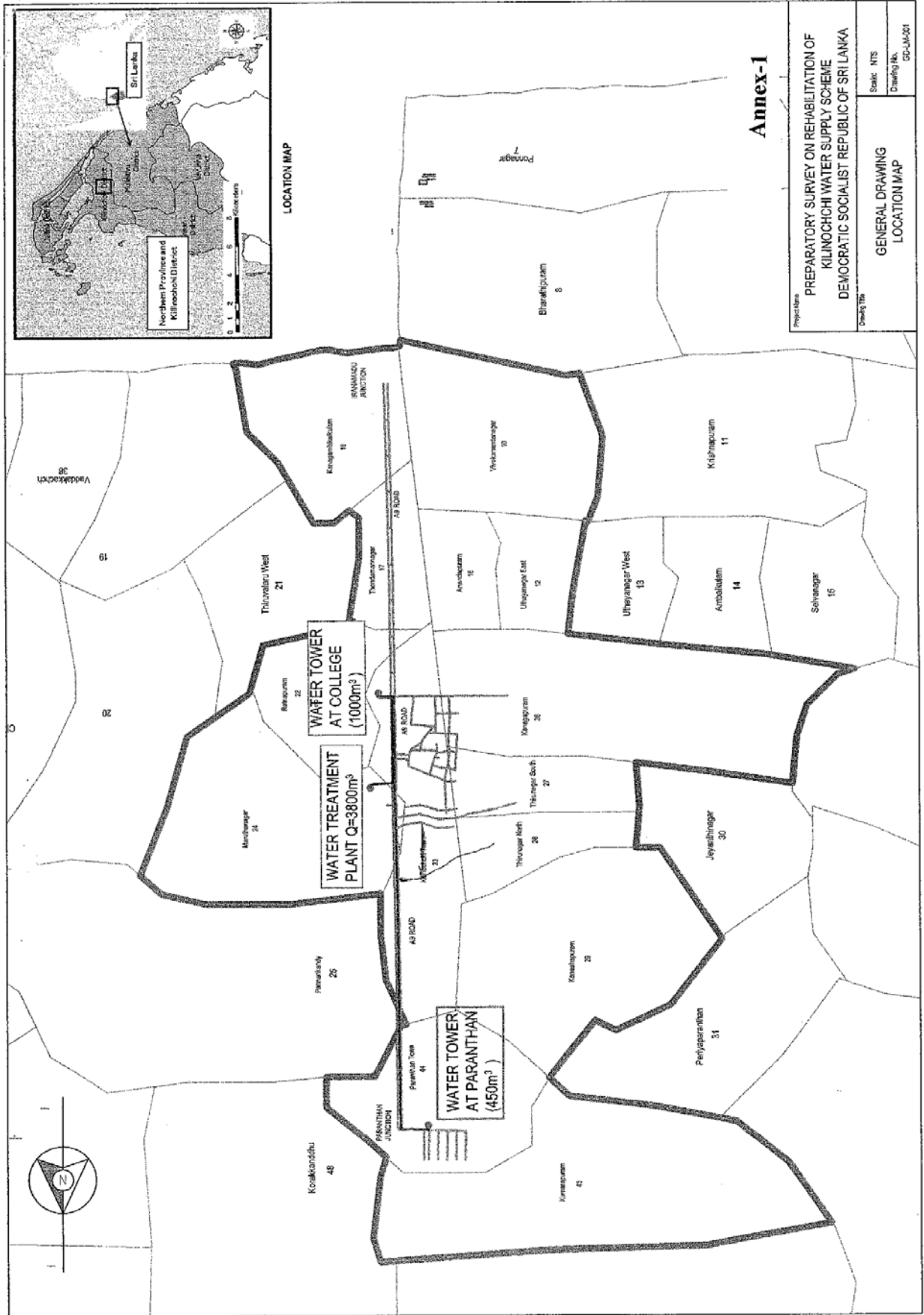
- 1) JICA Study Team requested based on the discussion with Mines Action office on 2nd June 2011 NWSDB will continually discuss and facilitate the Technical Survey (TS) for mines and UXOs of at the premises of WTP up to October 2011 and the TA for the entire pipeline routes which the Japan's Aid rehabilitation scheme covers up to November 2011.
- 2) Through discussion with NWSDB and JICA Study Team a draft of the equipment list procured under the Japan's Aid rehabilitation scheme has been tabulated as **Annex-5**.
- 3) JICA Study Team submitted draft conceptual design drawings for the Japan's Aid rehabilitation scheme on the site. NWSDB agreed to clarify the draft and inform their comment to the JICA Study Team by June 28 2011 in case it is needed to be modified.



Attachment: List of Participants

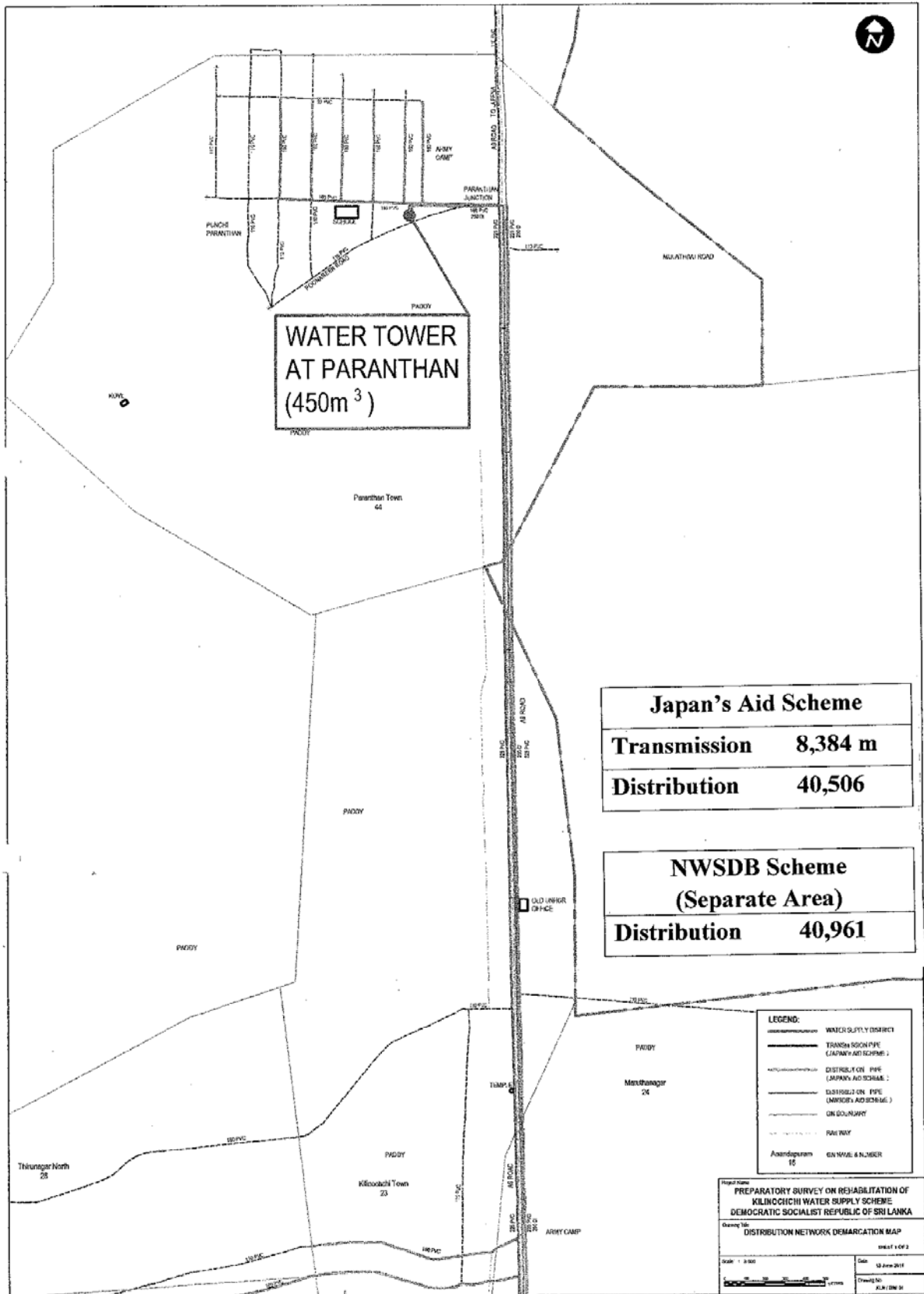
Mr. D.S.D Jayasiriwardene	NWSDB Planning & Design Section	Deputy General Manager
Mr. Duleep Goonewardene	NWSDB North	Deputy General Manager
Mr. B. L. Gunarathne	NWSDB Planning & Design Section	Assistant General Manager
Mr. R.B. Thavendrakumar	NWSDB NR-Jaffna	Regional Manager
Mr. R. Suveenthan	NWSDB NR-Jaffna	Engineer
Mr. K. Ravichandran	NWSDB NR-Jaffna	Engineer
Mr. R. M. Gamini	RDA	Project Director
Mr. C. Vatharakumar	RDA	Project Engineer
Mr. P. Chandrasiri	CECB	Resident Engineer
Mr. P. G. D. L. Gunawardara	CECD	Site Engineer
Mr. Tadao Funamoto	JICA Study Team	Chief Consultant
Mr. Toru Yagi	JICA Study Team	Water Treatment Specialist
Mr. Daisuke Yashiro	JICA Study Team	Water Pipeline Specialist

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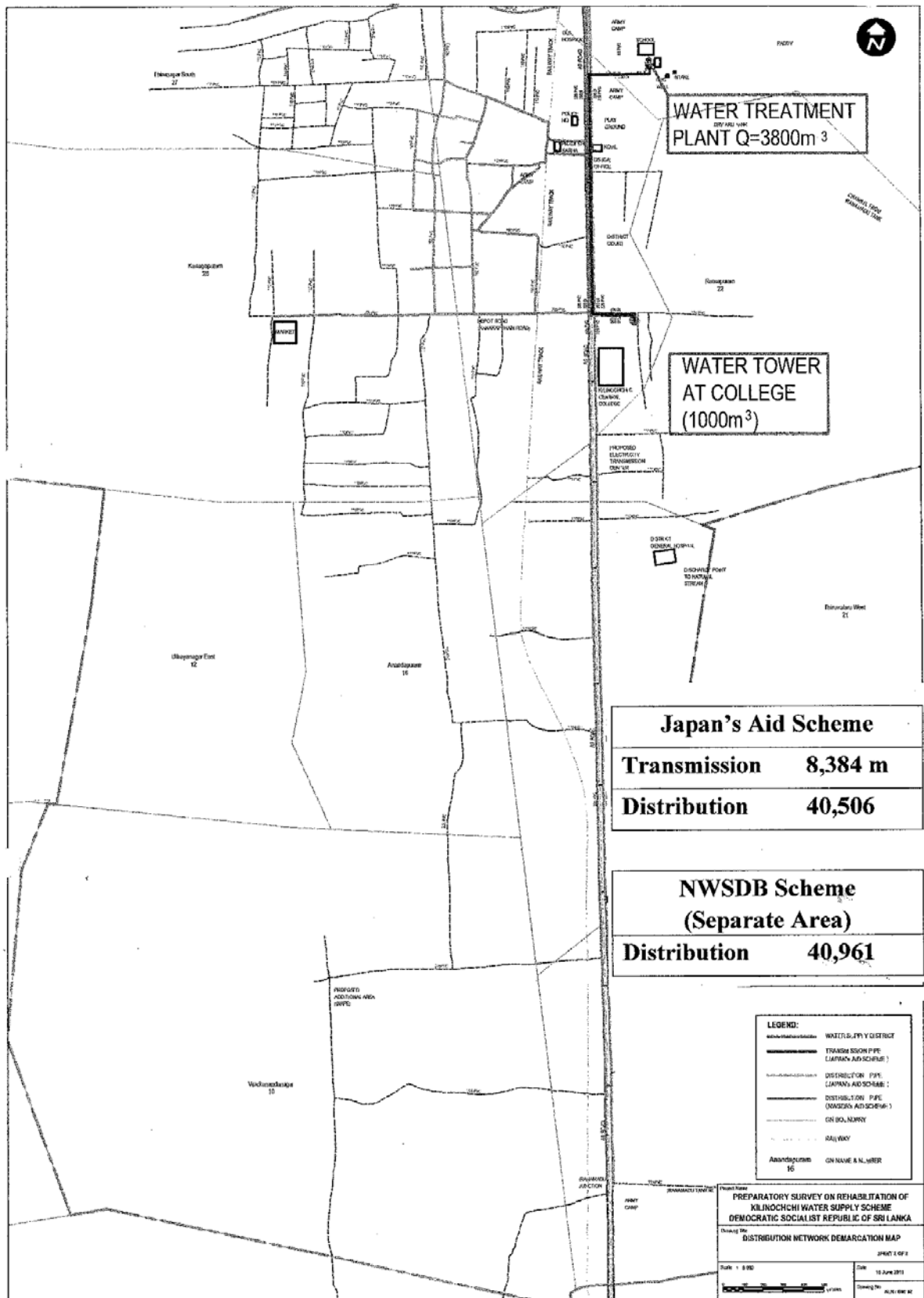
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Drawing No. GS-UM-001	Scale: NTS Drawing No.
GENERAL DRAWING LOCATION MAP	

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Annex-3-2



Japan's Aid Scheme	
Transmission	8,384 m
Distribution	40,506

NWSDB Scheme (Separate Area)	
Distribution	40,961

LEGEND:	
	WATER SUPPLY DISTRICT
	TRANSMISSION PIPE (JAPAN'S AID SCHEME)
	DISTRIBUTION PIPE (JAPAN'S AID SCHEME)
	DISTRIBUTION PIPE (NWSDB SCHEME)
	CANAL/NURVEY
	RAILWAY
	ON NAME & NUMBER

Project Name: PREPARATORY SURVEY ON REHABILITATION OF KILINOCHCHI WATER SUPPLY SCHEME
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 Drawing No: DISTRIBUTION NETWORK DEMARCATION MAP
 SHEET 1 OF 2
 Scale: 1:500
 Date: 10 June 2011
 Drawing By: [Signature]

D [Signature] [Signature]

The List of Equipment to be procured for O&M for Water Supply System

A. Vehicles for O&M Works

No.	Items	Quantity	Specifications	Remarks
1	Crew Cab	1 unit		NWSDB requested
2	Pick-up Truck	1 unit		NWSDB requested

B. O&M Equipment

No.	Items	Quantity	Specifications	Remarks
1	Under-pressure Tapping Machine	2 units	Install 3/4" or 1" corporation stops to 4" – 48" under pressure pipe	
2	Personal Computer	2 units	Desk Top 17" LD monitor, HD more than 300 GB, CPU more than 1.5 GHz memory more than 2GB	
3	LCD Projector	1 unit	Color 2,500 lm, USB connection	

C. Laboratory Instruments

No.	Items	Quantity	Measurement Range and Specifications	Remarks
1	Turbidity Meter	1 unit	0 to 800 NTU	
2	Colorimeter	1 unit	HACH DR2700 or Equivalent +10 reagents	
3	Micro Scope	1 unit	Desk Top Type	
4	Electrical Conductivity Meter	2 units	0.1 mS/m to 10 S/m	Temperature can also be measured (0 to 100°C)
5	pH Meter	2 units	pH 0.00 to 14.00	
6	Residual Chlorine Meter	2units	0 to 2.00 mg/L	
7	DO Meter	2 units	0 to 20.00 mg/L	
8	Refrigerator	1 unit	2 Door Type, 480 L Class	

D. Laboratory Equipment Package

No.	Items	Quantity	Dimensions and Specifications	Remarks
1	Laboratory Working Station	1 unit		

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Kilinochchi Water Supply Scheme - Description of Items coming under 2KR and JICA Grant
(16.06.2011)

S No	Item	Covered under 2KR	Covered under JICA Grant
1	Rehabilitation of Intake site and Low lift pump house	Package treatment plant and intake pipe line will be installed.	New Intake pit to be built with new set of pipes. The rehabilitated L/L Pump House can be used but modification to suit the new pump to be provided
2	Supply & Installation of Low lift Pump	L/L Pump to be installed to suit the package plant	L/L Pump to be installed to suit the whole Rehabilitation scheme
3	Power Supply	To be provided package treatment plant and administration building	Intake and treatment plant
4	Rehabilitation of High Lift Pump House	H/L Pump House will be rehabilitated to previous working condition	Modification to suit new H/L Pump to be provided
5	Rehabilitation of Ground Reservoir (Clear water)	To be rehabilitated to the previous working condition	Any additional capacity to be included
6	Laboratory Equipment	Temporary mini laboratory with basic equipments	Will be supplied
7	Vehicles	Provision for vehicles, water bowssers etc	NWSDB requested one pickup and one crew cab
8	Raw water main	New hume pipe will be laid in between Dry aru and existing Dug well	New raw water main to be installed with adequate capacity for future demand

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To be Implemented with 2KR

Item No	Description
1	Laying of Hume pipe in between Dry aru and Dug well.
2	Rehabilitation of High Lift Pump House, Ground Reservoir (Clear Water), Care taker quarters and Administration building.
3	Provision of Vehicles (Lorry) and water bowsers.
4	Establishment of Mini Laboratory with basic equipment.
5	Package Water Treatment Plant and required pumps
6	Supply of Pipes, Plastic tanks and Specials for O&M activities
7	Road Crossing Work for interconnection distribution system along A9 Road.
8	Supply of Tools, Dewatering Pumps and Equipment.
9	Establishing Small Workshop with necessary Equipment

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