APPENDIX P

MINUTES OF DISCUSSIONS FOR TECHNICAL MEETINGS

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P.1 First Technical Meeting

MINUTES OF DISCUSSIONS
IN THE TECHNICAL MEETING
OF THE FEASIBILITY STUDY ON IMPROVEMENT OF THE WATER SUPPLY
SYSTEM IN AL-BASRAH CITY AND ITS SURROUNDINGS

The JICA Study Team for the Feasibility Study on Improvement of the Water Supply System in Al-Basrah City and its Surroundings had technical meetings on 13th and 15th September in Amman with representatives of Ministry of Municipality Public Works, Council of the Basrah Governorate and Basrah Water Directorate.

As a result of discussions, both parties agreed with the main items described on the attached sheet.

Amman, 16 September 2006

16/09/2006

Mr. Maytham Jarallah
Head of Implementation Department
Ministry of Municipality and Public Works

Mr. Akira Takechi
Leader
JICA Study Team

Mr. Abd-Al Mun'em Khayoun Lazim
Director
Water Directorate of Al Basrah Governorate
Ministry of Municipality and Public Works

Witnessed:

Mr. Muhammed S. Al-Abady
Chairman of the Basrah Governorate Council

Dr. Hamed Al-Thalmi
Member of Basrah Governorate Council

ATTACHMENT

1. On the first day (13 September) the Study Team presented an additional explanation of the Water Supply Plan for Central Basrah (WSPCB) proposed in Interim Report. Major points explained are as follows:

   - Clarification of relation between Mini MP and WSPCB.
   - Change of the demand estimation base from the Ministry of Planning to Mini MP.
   - Shifting of water intake point for WTP in Basrah to near Al Hartha.

   The Iraqi side accepted the WSPCB with the above explanations and proposed to add an option to reduce TDS because there is a strong need to improve TDS in Basrah water supply, too. The Study Team accepted the proposal, admitting the need of TDS improvement in the complete water supply plan for Basrah, and proposed to revise the WSPCB to include the TDS reduction option. Then both sides agreed to have a meeting to discuss candidates of the priority project based on the revised WSPCB on 15 September.

2. At 15 September meeting, the Study Team presented the revised WSPCB. Both sides discussed the candidates of the priority project and agreed as follows:

   2.1 Both sides agreed with the revised WSPCB shown in Figure-1 of which capacity/size are as shown in Stage-5 in Table-1 as a base of discussion of the priority project.

   2.2 Both sides agreed that size of the revised WSPCB was too large, in general, considering ordinary size of Japanese yen loan projects and would require phasing in its implementation.

   2.3 Therefore, implementation priority was discussed and the implementation priority shown Table-2 was agreed by the both sides.

   2.4 The phasing of the revised WPSCB was discussed and both sides agreed that 3

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options, Stage-1, Stage-2 and Stage 2-4 in Table-1, would be studied as candidates for the Priority Project, and it would be finalized taking into consideration of the budget allocation.

2.5 Both sides agreed that the cost estimates used in the study were preliminary and that the estimates would be reviewed and revised at a later stage.

3. The Study Team informed that the next meeting would be held late October.

16/09/2003

Attendees List

No.	Name	Position	Organization
1	Maytham Jarall	Head of implementation department. MMPW	General Directorate of Water
2	Luai. M. Ali	Head of design department. MMPW	General Directorate of Water
3	Muhammed S. Al-Abady	Chairman of the Basrah Council	Basrah Governorate Council
4	Dr. Hamed Al-Thalmi	Member of Basrah Council	Basrah Governorate Council
5	Abd-Al Mun'em Khayoun Lazim	Director	Water Directorate of Al Basrah Governorate
6	Yuzurio Susumu	Head Iraq unit Jordan Office	JICA
7	Ahmad Allawi	Engineer	JICA Baghdad Office
8	Yuri Kurihara	Intern	JICA Jordan Office
9	Akira Takechi	JICA Study Team Member	JICA Study Team
10	Nobuhiro oshima	JICA Study Team Member	JICA Study Team
11	Wally Weeks	JICA Study Team Member	JICA Study Team
12	Jabbar H. Abdullah	JICA Study Team Member	JICA Study Team
13	Hirotaka Sato	JICA Study Team Member	JICA Study Team
14	Shiro Jimbo	JICA Study Team Member	JICA Study Team
15	Toshio Kawagoe	JICA Study Team Member	JICA Study Team
16	Masashi Kawamura	JICA Study Team Member	JICA Study Team
17	Qasim Maaitah	Engineer Snafee Co.	Snafee
18	Moh'd Muita	Manager Snafee Co.	Snafee

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Figure-1 Components of Water Supply Plan for Central Basrah (WSPCB)

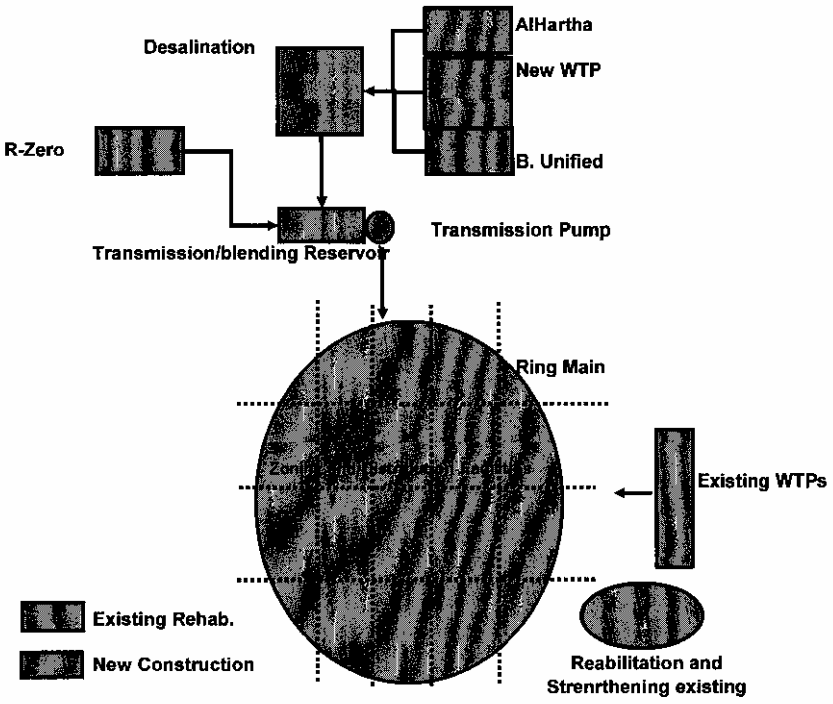

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Table-1 Capacity of Components of WSPCB (Stage5) and Candidates of Priority Project

		Final Goal	Candidates for Priority Project		
Components	unit	Stage 5	Stage 2-4	Stage 2	Stage 1
New water treatment plant	m3/day	499,000	240,000	184,000	0
RO plant	m3/day	362,000	130,000	0	0
PS for new WTP/RO	m3/day	362,000	130,000	184,000	0
Transmission pipe(WTP to TR)	km/mm	13.5/1600	13.5/1600	13.5/1600	0
Transmission reservoir (TR) Blending res.	m3	25,000	20,000	20,000	13,000
Transmission PS (TPS)	m3/day	608,000	485,000	485,000	301,000
Ring main		Yes	Yes	Yes	Yes
Main distribution facilities (13 zones)		Yes	No	No	No
Existing WTP		Not Used	Used	Used	Used
Rehabilitation of existing WTP		Yes	Yes	Yes	No
Rehabilitation of network		Yes	Yes	Yes	Yes
Benefits					
Water quality					
-TDS (mg/L)		600	898	1176	1035
-Other quality parameters		OK	Improved	Improved	Present
Water quantity (day average demand in 2015)		100%	100%	100%	70%
Water pressure		OK	OK	Improved	Not enough
Leakage		Improved	Improved	Improved	Improved

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Table-2 Implementation Priority

Priority	Components	Effects	Benefits to Customers			Remarks
			Equalization of water distribution	Increase of water quantity	Improvement water quality	
1	Ring Mains (may include zoning)	Enable distribution management	○	△	△	No water is distributed without transmission and distribution facilities. Therefore these componnts are essential.
	Transmission facilities	Essential for stable water input to distribution network				
	Rehab. of Network					
2	WTP	Increase water production capacity		○	△	WTP is required as pretreatment of desalination by RO. Water quality except TDS will be improved.
	Rehab. of Exiting WTP	Required to maintain existing water production capacity				Existing WTPs shall be used until certain point.Water quality except TDS will be improved.
3 or 4	Desalination	Improve TDS			○	TDS reduction is essential as far as SAA water is used as water source of WTP, in general. However, its priority can be placed after the quantity increasement if the customers' requirements are considered.
3 or 4	(Zoning) and Main Distribution Facilities	Enable higher distribution management and stable water distribution	○			Zoning enables higher distribution management and leakage control. Distribution facilities is required to accommodate hourly maximum demand and enough pressure

16/09/2003

P.2 Second Technical Meeting

MINUTES OF DISCUSSIONS
IN THE 2ND TECHNICAL MEETING
OF THE FEASIBILITY STUDY ON IMPROVEMENT OF THE WATER SUPPLY
SYSTEM IN AL-BASRAH CITY AND ITS SURROUNDINGS

The JICA Study Team for the Feasibility Study on Improvement of the Water Supply System in Al-Basrah City and its Surroundings had technical meetings on 5th and 6th November in Amman with representatives of Ministry of Municipality & Public Works, Council of the Basrah Governorate and Basrah Water Directorate under the presence of a representative of JBIC.

As a result of discussions, both parties agreed with the main items described on the attached sheet.

Amman, 7 November 2006

Mr. Ghazi Naji Majeed
Director General of Water
Ministry of Municipality and Public Works

Mr. Akira Takechi
Leader
JICA Study Team

07/11/2006

Mr. Maytham Jaralla
Head of Implementation Department
Ministry of Municipality and Public Works

Mr. Abd-Al Mun'em Khayoun Lazim
Director
Water Directorate of Al Basrah Governorate
Ministry of Municipality and Public Works

Witnessed:

Dr. Hamed Al-Thalmi
Member of Basrah Governorate Council

ATTACHMENT

1. The Study Team explained the contents of the Progress Report and the Iraqi Side requested to review the cost estimate in the report. The Study Team agreed with it and a meeting for review of the said cost estimation was set at 9:00 AM of 7 November at the Study Team's office in Gardenia Hotel.

2. JBIC explained the outlines of JBIC loan including consequent procedures to be expected after the Study and the Iraqi sideagreed on it.

3. The Study Team proposed to select Stage-2 of Water Supply Plan for Central Basrah, which is described in the Progress Report, as a priority project to be financed by JBIC loan based on results of the project evaluation. However, the Iraqi side strongly claimed the need of TDS improvement by RO process and requested to select Stage 2-4 as the priority project. The Study Team accepted the Iraqi proposal. The Study Team acknowledged the Iraqi sides aspiration for the RO plant and emphasized the need to justify it in terms of the total project cost, financial and economic feasibility and operation.

4. It was agreed that the next meeting to discuss Draft Final Report will be held on 27 November 2006 on condition that the Study Team will send a Draft Final Report which at least includes a conclusion reflecting the points discussed on 7th November prior to the next meeting, at least 3 days before the due date (27/11/06).

List of Attendees

Name	Position	Organization
Ghazi Naji Majeed	Director General of Water	General Directorate of Water, MMPW
Maytham Jaralla	Director of implementation Department	General Directorate of Water, MMPW
Abd-Al Mun'em Khayoun Lazim	Director	Water Directorate of Al Basrah Governorate, MMPW
Dr. Hamid Al-Thalmi	Member of Basrah Council	Basrah Governorate Council
Hiroyuki Mori	Representative, Iraqi Unit	JICA Jordan Office
Shinichi Masuda	Senior Program Officer	JICA Headquarters
Suha Bakir	Program Officer, Iraqi Unit	JICA Jordan Office
Yuri Kurihara	Intern, Iraqi Unit	JICA Jordan Office
Ahmad Allawi	Program Officer	JICA Iraq Liaison Office
Yoichiro Hirayama	Advisor, Development Assistance Dept.3	JBIC
Akira Takechi	JICA Study Team Member	Tokyo Engineering Consultants Co., Ltd.
Hirotaka Sato	JICA Study Team Member	Tokyo Engineering Consultants Co., Ltd.
Jabbar H. Abdullah	JICA Study Team Member	Mott MacDonald
Norio Tanaka	JICA Study Team Member	Tokyo Engineering Consultants Co., Ltd.
Philip Selby	Engineer	Mott MacDonald

P.3 Technical Memorandum of Second Technical Meeting

THE FEASIBILITY STUDY ON IMPROVEMENT OF THE WATER SUPPLY SYSTEM IN AL-BASRAH CITY AND ITS SURROUNDINGS

DISCUSSION MEMORANDUM OF TECHNICAL DISCUSSION

In accordance with the agreement concluded in the 2nd Technical Meeting held on 5th and 6th November in Amman between JICA Study Team, representatives of Ministry of Municipality & Public Works, Council of the Basrah Governorate and Basrah Water Directorate under the presence of a representative of JBIC, the concerned parties had a technical discussion on WSPCB proposed in the Progress Report on 7th November 2006 at the Study Team's Office and agreed as shown in the attached sheet.

Amman, 7 November 2006

Mr. Ghazi Naji Majeed
Director General of Water
Ministry of Municipality and Public Works

Mr. Akira Takechi
Leader
JICA Study Team

Mr. Maytham Jaralla
Head of Implementation Department
Ministry of Municipality and Public Works

Mr. Abd-Al Mun'em Khayoun Lazim
Director
Water Directorate of Al Basrah Governorate
Ministry of Municipality and Public Works

Witnessed:

Dr. Hamed Al-Thalmi
Member of Basrah Governorate Council

ATTACHMENT

1. The Study Team explained the background of the demand estimation as below:
   - 360 l/capita/day for Basrah City (from Mini Master Plan)
   - 30% for leakage ratio (from Mini Master Plan and this is the target leakage ratio in 2015 in WSPCB)
   - 514 l/capita/day (=360/0.7) for average demand
   - Daily max demand: 1.4 x daily average demand
   - Hourly maximum demand : 1.6 x daily maximum demand

   The Iraqi side accepted the above explanation.

2. In the plan, the existing water treatment plants along the Shat Al Arab River will be utilized for some years before the stage 5 of WSPCB or Mini M/P is realized. The JICA Study Team has planed to use R-Zero water for these water treatment plants so that low TDS water will be supplied from these water treatment plants. But the Iraqi side claimed that if R-Zero water is stopped these water treatment plants must use the Shat Al Arab river water, which results in high TDS water supply. The Iraqi side promised to resolve this problem by themselves in case of stoppage of R-Zero water, by installing reverse osmosis (RO) plants to these water treatment plants.

3. The Study Team explained that they had already utilized the existing pipelines in their design of the ring main and the Iraqi side accepted it.

4. The Study Team will study options to utilize the following existing pipeline as a part of the ring mains to reduce the proposed pipe size at these sections.
   - Existing 900 mm diameter pipelines passing through the center of Basrah city from Garmat compact unit.
   - Existing 900 mm diameter pipelines in the south of Basrah City

5. The Study Team will study an option to utilize the existing two raw water transmission lines (dia. 1200 mm) from R-Zero to Al Hartha compact units and Basra Unified Plant instead of construction of the proposed new 1600 mm diameter pipeline. However, currently there are many illegal connections with these pipelines and the elimination of these connections will be done by the Iraqi side.

6. The Study Team has used 70 % of a recovery rate for RO plant but the team will further study the recovery rate and try to increase it, possible, to 75 %.

List of Attendees

Name	Position	Organization
Ghazi Naji Majeed	Director General of Water	General Directorate of Water, MMPW
Maytham Jaralla	Director of implementation Department	General Directorate of Water, MMPW
Abd-Al Mun'em Khayoun Lazim	Director	Water Directorate of Al Basrah Governorate, MMPW
Dr. Hamid Al-Thalmi	Member of Basrah Council	Basrah Governorate Council
Shinichi Masuda	Senior Program Officer	JICA Headquarters
Yuri Kurihara	Intern, Iraqi Unit	JICA Jordan Office
Ahmad Allawi	Program Officer	JICA Iraq Liaison Office
Yoichiro Hirayama	Advisor, Development Assistance Dept.3	JBIC
Akira Takechi	JICA Study Team Member	Tokyo Engineering Consultants Co., Ltd.
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Jabbar H. Abdullah	JICA Study Team Member	Mott MacDonald
Norio Tanaka	JICA Study Team Member	Tokyo Engineering Consultants Co., Ltd.
Philip Selby	Engineer	Mott MacDonald