

Course Description

Programme1: Effective operation and maintenance system using GIS (OMG)

1. Purposes and expected outcomes:

The purpose of this sub-course is to introduce GIS to a priority area in BM. Participants will learn how to develop effective Operation and Maintenance (O&M) system using GIS. Japanese experts will facilitate the process of developing GIS, effective O&M system and action plan. Participants are expected to collect GIS data and exercise system modification and data updating in practice stages in BM (between training programmes in Amman).

Also, participants will practice an action plan on effective O&M system in BM which is to be developed through stage-1 to stage-6, and feedback lessons from the practice results for further improvement.

- Participants are expected to:

- (1) Understand and get familiarized with GIS for effective O&M for water supply
- (2) Understand how to establish and update GIS database.
- (3) Understand how to reduce non-revenue-water (NRW) and to utilize GIS for effective O&M system.
- (4) Set up a manual for effective water supply O&M system using GIS and an action plan for reducing NRW.
- (5) Practice an action plan formulated thorough the course.

2. Implementing Framework for The Course

The Course shall be organized by Japanese experts in cooperation with WAJ resources.

GIS development and data compilation will be conducted by contracting local consultant company under supervision of Japanese experts.

IMPORTANT NOTE:

Participants from BWA are requested to bring relevant data (base maps, water network maps, facility maps, facility development plans, and so on...) to the training in Amman for data compilation. It is necessary for JICA to confirm all available data at the beginning of the Course in order to discuss the specification and function of the GIS.

3. Schedule of the Course

	2005					2006					2007			remarks							
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep	Oct	Nov	Dec	Jan	Feb	Mar
Training Schedule																					
OMG		■			■		■			■			■					■			

OMG: Effective operation and maintenance system using GIS

- : Training in Amman,
- : Data collection and Practice in Baghdad

OMG course will be conducted in September and December in 2005, February, June and September in 2006, and January in 2007 in Amman indicated as black line in above chart. A Study trip to Cairo may be arranged once in the course subject to the availability of host institute in Cairo.

Participants are requested to collect relevant data on GIS and exercise GIS operation in Baghdad throughout the course indicated as white line in above chart. Japanese experts will give instructions and advices by e-mail from Japan.

* Schedule maybe subject to change.

4. Number and Qualification of Applicants for the Course

The Course is focused on middle class engineers (not DG classes) in Baghdad Mayoralty. Qualification details are below:

- Number of participants: thirteen (13) to fifteen (15)
- Qualification: Guiding principles for selecting eligible candidates are as follows:
 - Participants should be under forty two (42) years old of age.
 - Three (3) should be from GIS Project Unit of Baghdad Mayoralty,
 - Ten (10) should be from engineers engaged in GIS projects who have good knowledge of Operation and Maintenance of water supply facilities. Participants who attended previous course held last March should be paid due consideration,
 - (OPTIONAL) (In case BM prefer to involve some Iraqi GIS advisers in this GIS building process, they can nominate two (2) from research institutes or universities in Iraq who can provide technical advice for GIS data collection and practice during data collection and practice periods in Baghdad. Participants from those institutes or universities are requested to attend at least Stage-1 because technical specification of GIS and a plan for practice work in Baghdad will be discussed in the Stage 1. From Stage-2, they will attend the Course on necessary basis

5. Course Curriculum (PROVISIONAL)

Stage-1:

Purposes:

- Introduction on GIS concept
- Introduction and Discussion on possible GIS specifications
- Drafting a specification of GIS
- Confirmation of available data for GIS
- Introduction and Discussion on effective O&M system and its action plan

(17th September to 30th September, 2005)

Day	Date	Training Item	Person in charge	Training Contents
1	17	Arrival in Amman		
2	18	Orientation Lecture-1 Basic concept of GIS	Experts, WAJ	Orientation
3	19	Presentation Current water situation in BM	Participants	
4	20	Discussion Move to Egypt	Participants, Experts	Confirmation of available data, procedures practices
5	21	Field Trip Visit to Cairo	Experts	
6	22	Field Trip Visit to Cairo	Experts	
7	23	Move to Jordan Free		
8	24	Lecture-2 Effective O&M for Water Supply System	Experts, WAJ	
9	25	Discussion Effective O&M for Water Supply System	Participants, Experts	Identify problems to be tackled, countermeasures...
10	26	Lecture-3 Effective O&M for Water Supply System and GIS	Experts	
11	27	Discussion GIS design and specs	Participants, Experts	Propose plans and necessary actions for effective O&M system GIS design and specs
12	28	Discussion GIS design and specs	Participants, Experts	GIS design and specs
13	29	Discussion GIS design and specs Preparation for next stage	Participants, Experts	Preparation for next stage
14	30	Departure for Baghdad		

Stage-2:

Purposes:

- Finalizing GIS design and specifications
- Confirmation of implementing arrangement for GIS development works
- Commencement of GIS development works.
- Review the result of practice on GIS operation and effective O&M system that were proposed in stage-1

(3rd December to 9th December, 2005)

Day	Date	Training Item	Person in charge	Training contents
1	3	Arrival in Amman		
2	4	Discussion Current status from both side Finalizing the GIS design and specs. Presentation of the practice result of Effective O&M system	Participants, Experts	
3	5	Discussion and Practice on GIS Visit to GIS workshop and discuss implementation arrangement	Participants, Experts	
4	6	Discussion and Practice on GIS Visit to GIS workshop and hand over data	Participants, Expert	
5	7	Discussion and Practice on GIS Visit to GIS workshop and compile data	Participants, Experts	
6	8	Discussion and Practice on GIS Visit to GIS workshop and compile data Preparation for the next step Instruction for O&M practice and GIS practice	Participants, Experts	
7	9	Departure for Baghdad		

Stage-3:

Purposes:

- Confirmation on the status of the GIS development
- Modify the GIS if necessary
- Practice how to input data to GIS and update it
- Review the result of practice on GIS operation and effective O&M system that were proposed in stage-2
- Modification of an action plan on effective O&M system

(11th February to 17th February, 2006)

Day	Date	Training Item	Person in charge	Training contents
1	11	Arrival in Amman		
2	12	<u>Presentation and discussion on field survey</u>	Participants, Experts	
3	13	<u>Visit to the GIS workshop</u> Discussion on current status Modify GIS if necessary, Practice on data input, update and operation	Participants, Experts	
4	14	<u>Visit to the GIS workshop</u> Practice on data input, update and operation	Participants, Experts	
5	15	<u>Visit to the GIS workshop</u> Practice on data input, update and operation	Participants, Experts	
6	16	<u>Visit to the GIS workshop</u> Preparation for the next step		
7	17	Departure for Baghdad		

Stage-4:

Purposes:

- Confirmation on the status of the GIS development
- Modify the GIS if necessary
- Practice how to input data to GIS and update it
- Preparation of a user manuals
- Review the result of practice on GIS operation and effective O&M system that were proposed in stage-3
- Understanding NRW countermeasure
- Discussion of NRW action plan

(One week in June, 2006)

Day	Date	Training Item	Person in charge	Training contents
1		Arrival in Amman		
2		<u>Presentation and discussion on field survey</u>	Participants, Experts	
3		<u>Visit to the GIS workshop</u> Discussion on current status Modify GIS if necessary, Practice on data input, update and operation	Participants, Experts	
4		<u>Visit to the GIS workshop</u> Practice on data input, update and operation	Participants, Experts	
5		<u>Visit to the GIS workshop</u> Practice on data input, update and operation	Participants, Experts	
6		<u>Visit to the GIS workshop</u> Preparation for the next step		
7		Departure for Baghdad		

Stage-5:

Purposes:

- Confirmation on the status of the GIS development
- Modification of the GIS if necessary
- Practice on how to input data to GIS and update it
- Preparation of a user manuals
- Reviewing the result of practice on GIS operation, effective O&M system and NRW action plans that were proposed in the stage-4

(One week in September, 2006)

Day	Date	Training Item	Person in charge	Training contents
1		Arrival in Amman		
2		<u>Presentation and discussion on field survey</u>	Participants, Experts	
3		<u>Visit to the GIS workshop</u> Discussion on current status Modify GIS if necessary, Practice on data input, update and operation	Participants, Experts	
4		<u>Visit to the GIS workshop</u> Practice on data input, update and operation	Participants, Experts	
5		<u>Visit to the GIS workshop</u> Practice on data input, update and operation	Participants, Experts	
6		<u>Visit to the GIS workshop</u> Preparation for the next step		
7		Departure for Baghdad		

Stage-6:

Purposes:

- Finalizing GIS and its manual
- Finalizing an action plan on effective O&M system including NRW countermeasures.
- Handing over the GIS to BWA

(One week in February, 2007)

Day	Date	Training Item	Person in charge	Training contents
1		Arrival in Amman		
2		<u>Presentation and discussion on field survey</u>	Participants, Experts	
3		<u>Visit to the GIS workshop</u> Discussion on current status	Participants, Experts	

Day	Date	Training Item	Person in charge	Training contents
		Modify GIS if necessary, Practice on data input, update and operation		
4		<u>Visit to the GIS workshop</u> Practice on data input, update and operation	Participants, Experts	
5		<u>Presentation of a GIS and O&M System</u>	Participants, Experts	
6		<u>Presentation of a GIS and O&M System</u>		
7		Departure for Baghdad		

END