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SURVEYING SKILLS AND TECHNIQUES WORKSHOP

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SURVEYING SKILLS AND TECHNIQUES WORKSHOP

USAID JORDAN ECONOMIC DEVELOPMENT PROGRAM

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DELOITTE CONSULTING LLP

USAID/ECONOMIC GROWTH OFFICE (EG)

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TRAINING BACKGROUND

As per the request of the Greater Irbid Municipality to upgrade the skills of 35 surveyors working at the Municipality on surveying skills and techniques, a training workshop was designed and implemented to train the surveyors/assistants on proper surveying techniques and on the use of high end surveying equipment in the field such as Total Station and its associated software programs. The training needs were assessed to identify the areas that the surveyors/assistants lack and design the workshop to address the skills gap. In addition to the proper use of Total Station equipment and its related surveying software programs, the training focused on the execution of the Master Plan works, and manipulation the surveying data into professional maps and drawings.

TRAINING OBJECTIVE

- Developing the trainees' surveying skills (theoretical +practical).
- Training the trainees on using the latest version of surveying instruments.
- Enabling the trainees to solve real work problems in the field using these instruments.
- Going beyond traditional way (Manual way) by using the special surveying software to download and upload data.

TRAINING TOPICS

The training consists of the following topics and sub-topics:

INTRODUCTORY SEMINAR

- General overview about surveying science & the latest development in this field
- An overview about the Latest surveying instruments used in the field
- Identifying main municipalities' surveying works
- Mechanism on linking surveying works with Geographic Information Systems (GIS)
- Future plan and the effect of applying modern surveying works on the workflow of the municipality.

INTRODUCTORY TRAINING ON SURVEYING SCIENCE AND ITS APPLICATIONS IN MUNICIPAL WORKS

- General overview about main works of municipalities.
- Introduction about surveying science & applications, and about geographic information systems (GIS) and how they are connected to each other.
- Traditional ways of calculating lengths, areas, & volumes. Also, modern ways of calculating these parameters.
- Conversion of measurements from one system to another, and using different ways to calculate the angles
- Topographic maps, benefits & applications of topographic maps, and they are used to calculate volumes
- Types of curves & how they are calculated, and also how to calculate 'Traverse'.
- Errors facing surveyors in field surveying in general and in municipal works in particular; how to deal with these errors; how to deal with land parcels that belong to the municipality; how to deal with invasions; and how to plan for future.
- Types of surveying instruments, technical specifications, & precisions.
- General explanation about most important surveying software programs, kinds of surveying software and how they are related to municipal works, and also a theoretical explanation on how using these programs.

SURVEYING WORKS AND APPLICATIONS – INTRODUCTORY (THEORETICAL / PRACTICAL)

- Checking surveying instrument.
- Managing files.
- Quick survey
- Converting data
- Surveying program
- Stakeout program
- Free station program

SURVEYING WORKS AND APPLICATIONS – ADVANCED

(THEORETICAL / PRACTICAL)

- Reference line program
- Calculating distances program
- Calculating areas & volumes programs
- Intersection programs
- COGO program
- Traverse program
- Offset program
- Reference surface program
- Calculating heights program

SURVEYING PILOT PROJECT RELATED to MUNICIPAL WORKS

- Managing field readings & measurements and transferring it to/from total station & PC in different formats (DXF, GSI, and IDX) through using LGO program. And also explanation about each format in detail.
- Practical project in the field to deal with real data. and using the total station & its related programs & functions in detail.

EXECUTION of MASTER PLAN WORKS

(THEORETICAL / PRACTICAL)

- Master plans & its benefits for municipal works, and how to deal with them.
- Using specialized surveying program to place or position the master plans in the field
- Taking some readings by observation few sites using special surveying programs, and comparing these readings with the master plan stored in the system.

TRANSFER OF SURVEYING READINGS INTO PLANS & DRAWINGS

- What is AutoCAD, its benefits of using it for field surveying, and how it is related to the ArcGIS GIS program
- Using AutoCAD for municipal works, and also how to use it to execute master plans & transferring field surveying data into ArcGIS program

TRAINING METHDOLOGY

THEORETICAL

- Explain any theoretical information at the beginning of each session using special slides with simulation showing how we can use the survey instrument using the data show.
- Answering any question from the trainees.

PRACTICAL

- Dividing the trainees into two groups to use the instrument and the special surveying programs.

DATES AND TIMING

No.	Training Courses	Start date	End date	Duration (days)
01	Introductory evaluation seminar on surveying techniques and sciences	17/08/2009	18/08/2009	2
02	Introductory training on surveying science and its applications in municipal works	30/08/2009	31/08/2009	2
03	Surveying works and applications (theoretical/practical) – introductory	01/09/2009	02/09/2009	2
		06/09/2009	09/09/2009	4
		13/09/2009	16/09/2009	4
04	Surveying works and applications (theoretical/practical) – advanced	27/09/2009	01/10/2009	5
05	Surveying pilot project related to municipality works	03/10/2009	03/10/2009	1
		05/10/2009	08/10/2009	4
06	Execution of master plan works (theoretical/practical)	10/10/2009	12/10/2009	3
07		14/10/2009	15/10/2009	2
08	Transfer of surveying readings into plans and drawings			
08	Test of surveying skills of trainees	19/10/2009	20/10/2009	2
Total				31 days

Appendix (A)

Trainees names

الرقم	الاسم	الوظيفة / مكان العمل	رقم الهاتف
1	شادي عطيه سالم ابو حسين Shadi Atieh Salem Abu Hussain	مساح منطقة النصر	0779398454
2	طارق محمود فايز عبده Tariq Mahmoud fayz Abandeh	مساح منطقة البارحة	0786853177
3	حسين مفلح موسى بدرانه Husein Mefleh Mousa Badarneh	مساح منطقة فوعرا	0777474926
4	خالد صالح ضيف الله السالم Khalid .S.D.AISalim	مساح منطقة صور	0776425388
5	أحمد حمدان محمد الشيباب Ahmad Hamdan Mohammad Al-Shyyap	مساح منطقة الحصن	0785780298
6	رياض محمد عبدالله طه Reyad Mohammad Abed-Allah Taha	مساح منطقة حوار	0777839908
7	ثامر حسين عيسى الصباهي Thamer husian issa Al-Sbahi	رسم قسم التنظيم	0788653999
8	انس صالح ناجي مدلل Anas Saleh Naji Modalal	رسم قسم التنظيم	0785436543
9		مساح قسم التنظيم	0788147232

الرقم	الاسم	الوظيفة / مكان العمل	رقم الهاتف
	جمال اسعد هلال السيلوي Jamal As'ad Helal Al-Selawee		
10	حمد سليمان حمد بني عبد الرحمن Hamad Sleiman Hamad Bani Abed alrahman	مساح قسم التنظيم	0795188974
11	محمد محمود جميل السكران Mohammad Mahmmod Gamel Al-Sakran	مساح منطقة الصريح	0795247487 0788628164
12	معن عبدالكريم محمود ابوزنيمه Ma'en AbdlKareem Mahmoud AbuZnima	مساح منطقة بشرى	0776964323
13	عدي محمد حامد الشيباب O'dai Mohammad Hamed AlSheyab	/	/
14	اسماعيل محمود اسماعيل ابو الهيجاء Ismail Mahmoud Ismail Abu- Alhyja	مساح منطقة النصر	0795053141
15	ابراهيم محمد عبدالله بني عامر Ibrahim Mohammad Abdalah Bany Amer	مساح/ بلدية اربد الكبرى	0776032015
16	بسام محمد رشيد الحتامله Bassam Mohammad Rahseed Al-Hatamleh	مساح/ بلدية اربد الكبرى	0788889620
17	عبدالله لافي حسين النمراة Abdallah Lafi Hussain AlNemrat	مساح منطقة المناره	0776325268
18	نذير سليمان خلف عناقره Nazeer Sleman Khalef Anagreh	مساح منطقه الروضه	0785978317

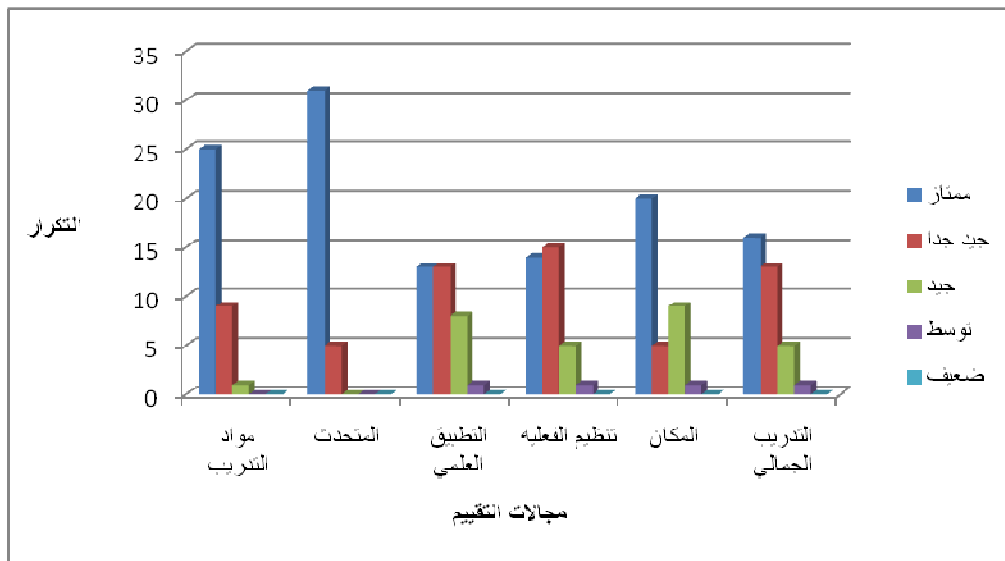
الرقم	الاسم	الوظيفة / مكان العمل	رقم الهاتف
19	حسونه عبدالكريم احمد حمدوني Hassouna Abdel-Kareem Ahmad Hammdouni	مساح منطقة الهاشميه	0788225173
20	عبدالرحيم مرشد عبدالرحيم غانم Abdelraheem Murshed Abdelraheem Ghanim	مساح منطقة ايدون	0797315355
21	احمد عمر احمد برقايوي Ahmad Omar Ahmad Barqawi	/	/
22	حكمت عبدالمجيد عبدالحميد مصبح Hekmat Abdelmajed Abdelhammed Mssbih	مساح	0788690365
23	يوسف صادق عبدالله عنتر Yousef Sadeg Abdalla Antar	مساح منطقة كتم	0785766400
24	محمد ناصر علي الجيزاوي Mohammad Naser Ali ElJizawi	مساح منطقة صور	0777228254
25	اشرف اسماعيل احمد عبنده Ashraf Ismail Ahmad Abandeh	مساح منطقة حكما	/
26	محمد عمر محمد الصباحين Mohammad Omar Moahmmad Al-Sabahen	مساح منطقة النزهه	0785293899
27	محمد سامي ابراهيم سعد Mohammad Sami Abraham sa'ad	مساح /تنفيذ طرق	0788816936

الرقم	الاسم	الوظيفة / مكان العمل	رقم الهاتف
28	موفق حمد ابراهيم دلقي Muwafaq Hamad Abraham Delki	مساح/مديرية التنظيم	0788398540
29	محمود صابر احمد الجوهري Mahmoud Saber Ahmad Al-Jawhary	مساح/مديرية التنظيم	0788565722
30	مصعب عمر محمد الصباحين Musab Omar Mohammad Al-Sabaheen	مساح/مديرية التنظيم	0785561478
31	ايمن عبدالمهدي صالح بصول Aiman Abedelmohdi Saleh Bsoul	مساح/منطقة الهاشميه	0799274042 0788982400
32	ياسر بلال جاسر الجوهري Yasser Belal Jasser Al-Jawhery	مساح منطقة الرابيه	079616935
33	عبدالعزیز سمير صياح Abdela'zez Sameer Sayah	/	/
34	محمود صالح احمد العنوز Mahmoud Saleh Ahmad Ale'nouz	مساح منطقة كفرنجه	07952251591
35	احمد عمر عياش بني هاني Ahmad Omar A'yeash BanyHani	مساح	/

Appendix (B)

Training Evaluation

المجموع	ضعيف	متوسط	جيد	جيد جدا	ممتاز	
35	0	0	1	9	25	مواد التدريب
36	0	0	0	5	31	المتحدث
35	0	1	8	13	13	التطبيق العملي
35	0	1	5	15	14	تنظيم الفعالية
35	0	1	9	5	20	المكان
35	0	1	5	13	16	التدريب الاجمالي



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