

MODULE - 1

Day-1 Session-2

International Best Practice for Business Plan Case Study of SUDAN

**Mr. Kuroda YASUYUKI
JICA Expert**



Business Plan of State Water Corporations (SWCs) in Sudan, preparation process

- Collect current management data of the pilot SWCs
- Formulate Business Goals
- Set Performance Indicators (PI)
- Collect current PI benchmarks (year April 2017)
- Set target PI benchmarks (year 2020)
- Set annual target PI benchmarks (year 2017, 18, 19)
- Prepare a management/ profit improvement plan of June-December 2017
- Obtain an approval of the Business Plans and management/ profit improvement plan of June- December 2017 from a Board member or Director General.



Management Goals

The two (2) pilot SWCs set common management goals.

- 1 • Sustainable supply of drinking water in quantity and quality
- 2 • Management improvement
- 3 • Customer satisfaction
- 4 • Work environment improvement and human resource development




Investment plan to achieve “Sustainable supply of drinking water”

Kassala	White Nile
Pipeline network replacement/ extension (500KM)	Pipeline network replacement/ extension (800KM)
Additional intake well construction or existing well rehabilitation (15)	
Water meter installation (130) Observation well (25)	Water meter installation (300)




Financial improvement plan to improve management

Kassala	White Nile
Revenue increase with customer expansion	
<ul style="list-style-type: none"> ▪ Reduction of unpaid water charges ▪ Revenue increase with equipment rental ▪ Activation of commercial teams 	<ul style="list-style-type: none"> ▪ Reduction of water supply service stop consumers 616 →250 ▪ Revenue increase with equipment rental



Training plan of Human Resource Development

Kassala	White Nile
17 courses: geophysical survey, well management, construction of water yards, rehabilitation of water yards, QGIS/ ArcGIS, English, O & M, chemical analysis, accountings and others. Target of the course participants will be: 218 staffs in 2017-18.	14-17 courses every year: water treatment plant management, pipe network management, water tariff management and others. Target of the course participants is: 506 staffs in 2018-2020.



Performance Indicators (PIs) , Current and target benchmarks

	Kosti city, 2017	Kassala city, 2017	Kosti city, 2020 target	Kassala city, 2020 target
Total population	296,657	268,397	330,819	318,762
Population with water supply service	112,729 38%	233,745 87%	185,259 56%	243,205 76%
Water production	18,000 M3/day	36,735 M3/day	33,000 M3/day	45,000 M3/day
Water connections	18,858	42,499	27,108	44,219

	Kosti city, 2017	Kassala city, 2017	Kosti city, 2020 target	Kassala city, 2020 target
Pipeline network replacement/ exte.	34	400	To be decided	500
Water meters	0	0	300	130
Chlorine injection	1,800 kg/ year	4,188 kg/ year	To be decided	To be decided
Water quality parameters being tested	5	New well: 12 Treatment plant: 3	To be decided	New well: 12 Treatment plant: 3

	Kosti city, 2017	Kassala city, 2017	Kosti city, 2020 target	Kassala city, 2020 target
Number of staffs (staffs per 1,000 connections)	305 staffs (16 staffs)	343 staffs (8 staffs)	To be decided	475 staffs
Amount of bill collection	10.6 million SDG	16.6 million SDG	14.0 million SDG	17.6 million SDG
Number of no water complaints	48- 300	East Gash 8-87 West Gash 10-20	0	East Gash 5-15 West Gash 5-8

Kassala/ White Nile SWC will formulate action plans of the year 2018

Kassala SWC		Management/ profit improvement plan, June-December 2017	Improve ment plan, 2018
Isam Khjali	Project managem ent	Leader, follow up and monitoring management committee activities progress, supervision of pipe network construction works (10KM) and preparation of GIS map. Preparation of tender document for all projects of SWC.	
Amal Usman	Water Quality	Deputy Leader, 1-1.) Quotation in Khartoum (Jun 2017). 1-2.) Purchase (Oct 2017) 1-3.) Installation of equipment (Nov-Dec 2017). 2-1.) Measuring residual chlorine in houses: 5 houses/week. 2-2.) Measuring chemical elements in WTP: Every 2 weeks. 2-3.) Measuring 20 elements in new wells: 10 elements up to Apr and 12 elements from May. 2-4.) Test of bacteria in WTP and Wau Nour reservoir before chlorination: Up to Apr, 2-3 times monthly. From June- Dec. 2017	

Kassala/ White Nile SWC will formulate a management/ profit improv. plan of the year 2018

Kassala SWC		Management/ profit improvement plan, June-December 2017	Improvement plan, 2018
Yossif Mohamed	Operation and maintenance, East Office	Implementation 210 connections and water meter installation plan. (Cross divisional activities) Lead the Maintenance/ Public Relation/ Finance and other departments to carry out leakage maintenance works, GIS map preparation, dialogue with residents and increase of public awareness, coping with those complaints or arears	
Babeker Hib Allah	Personnel Department	Implementation/ Monitoring of staff database preparation. Assignment of 30 new staffs to improve the performance up to 2019 (10 each year). 1) Planning of 10 staffs increase. Place: East/West Office Period: Jun-Dec 2017 2) Implementation: Recruitment of 3 engineers, and 7 workers	
Muhajballah	Training center	2-1. Visit other training centers in Sudan to learn the training system. 2-2. Contract with lecturers from university 2-3. Upgrade DWST graduates to lecturers.	



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MODULE - 2

Business Planning & GAP Analysis

PHNOM PENH WATER SUPPLY COMPANY (PPWSA)

Mr. Yasuyuki Kuroda
JICA Expert

THE BENEFICIAL PRACTICES OF PHNOM PENH WATER SUPPLY COMPANY (PPWSA)

2

PLEASE WATCH THE VIDEO IN THE FOLLOWING SLIDE

NOTE

While you watch the video, please try to relate and prepare answers for the following questions relating the video

VIDEO PERTINENT QUESTIONS

1. How many consumers with ID in your WASA?
2. How many consumers without ID in your WASA?
3. How many illegal connections in your WASA?
4. How to prevent water leakage or overflow in your WASA?

OUTLINE OF PHNOM PENN WATER SUPPLY AGENCY IN THE YEAR 1992 4

- Low quality piped water at very low pressure
- Limited supply: 10 hour a day
- 20 % of Phnom Penh residents
- Non revenue water: 72% due to illegal connections, leakage
- Extremely low tariff
- Underpaid staffs
- No metering
- Less than half of bills were collected

STRONG LEADERSHIP BY A NEW MANAGING DIRECTOR 5

- Staffs engaged in corrupt activities were fired
- Bill payment were enforced
- Illegal connections were regularized
- Metering was introduced
- Autonomy gained in financial and personnel matters
- Water quality improvement: the MD said “if you get stomachache after drinking the tap water, I will pay you compensation”
- Tariff increase in 1994, 1997, 2001, full cost recovery, get a profit to increase staff salary
- Subsidized tariff to poor communities

IMPROVEMENT OF BENCHMARKS

Indicators/ year	Year 1993	Year 1999	Year 2003	Year 2009
Phnom Penh population	680,000	880,000	1,030,000	1,440,000
Water supply coverage	25%	62%	82%	90%
Connections	26,881	60,482	105,777	191,092
Water supply capacity (m3/day)	65,000	120,000	235,000	300,000
Water supply pipe length (km)	288	455	921	1,500
Water quality standards	unknown	unknown	WHO guideline	WHO guideline
Water supply pipe net work pressure	0.2	2.0	2.5	2.5
Water supply duration a day (hours/ day)	10	24	24	24
Non Revenue Water (NRW)	72.0%	48.5%	17.1%	5.9%
Staff per 1, 000 water supply connections	22.0	7.8	3.9	3.2
Water supply charge collection rate	48.0%	98.9%	99.8%	99.9%

Source: Miracle of Phnom Penh, March 2015, Kuwaitima/ Suzubi, IICA

B-115: GROUP DISCUSSION

GROUPS FORMATION

1. Four (4) Groups will be formed
2. Each Group will represent their respective Utility preferably

REQUIRED

1. Discuss what good practices could be applied at their WASA, e.g.
 - Increase of connections
 - Dialogue with consumers
 - Improvement of water quality
2. How to measure to what extent you improve the above works.

THANKS





بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ
In the name of Allah, the Beneficent, the Merciful

Business Planning & GAP Analysis

ENERGY MANAGEMENT PLAN

Mr Ali Qumain

OBJECTIVES

- Overview of the WASA
- KPI of Business Planning
- Gap Analysis
- Target Setting
- Formulation of Strategy

KPI OF BUSINESS PLANNING

What to
Increase?

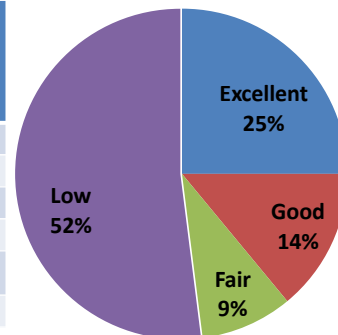
1. Connected Customers
2. Pumping Efficiency & Asset Condition
3. Billing Collection
4. Bill Delivery
5. Water Quality
6. 24/7 Water Supply
7. Planning

What to
decrease?

1. Expenses (Energy and O&M) / Production Cost
2. Non Revenue Water
3. Complaint Re-addressal Time

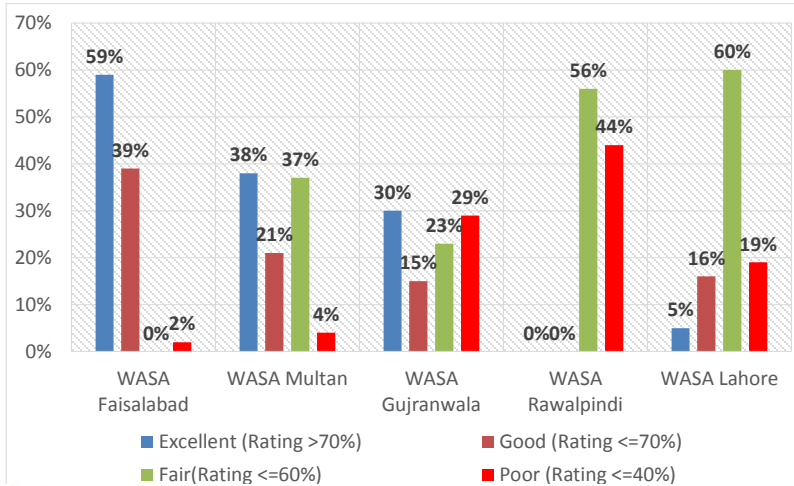
GAP 1: LOW AND FAIR PUMPING EFFICIENCY

#	City	LOW	FAIR	GOOD	EXCELLENT
1	Lahore	278	75	91	207
2	Multan	79	17	11	18
3	Rawalpindi	323	19	12	22
4	Gujranwala	37	9	19	22
5	Faisalabad	29	12	67	89
	Total	746	132	200	358



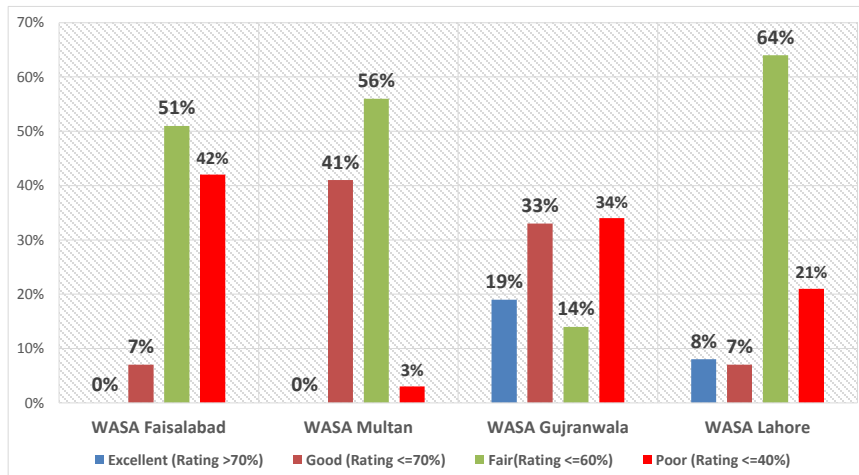
Source: Energy Management Opportunities in WASAs of Punjab (NEC Consultants Pvt Limited)

GAP 2: TUBE WELL CONDITION



Source: Energy Management Opportunities in WASAs of Punjab

GAP 3: DISPOSAL CONDITION



Source: Energy Management Opportunities in WASAs of Punjab

GROUP ACTIVITY 1: TARGET SETTING TO IMPROVE ASSET CONDITION

7

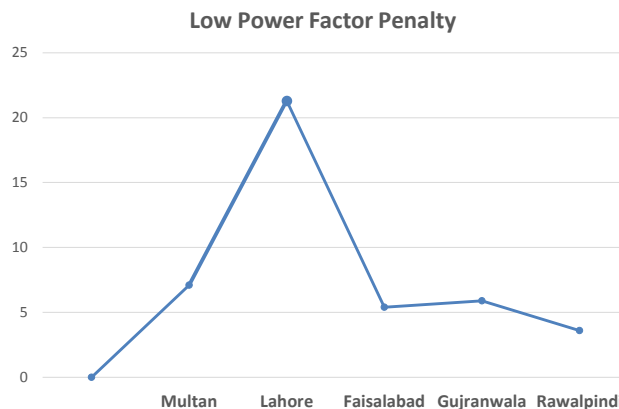
Time: 10 Min

WASA	GAPS	Base Line		Target Year 1		Target Year 2		Target Year 3	
		Poor D	Fair C	Poor D	Fair C	Poor D	Fair C	Poor D	Fair C
LHR/ GUJ/ MUL/ FSD/ RWP/ NSUSC	Pumping Efficiency								
	Tube well Condition								
	Disposal Condition								
	OHR Condition								

GAP 4 : POWER FACTOR PENALTY

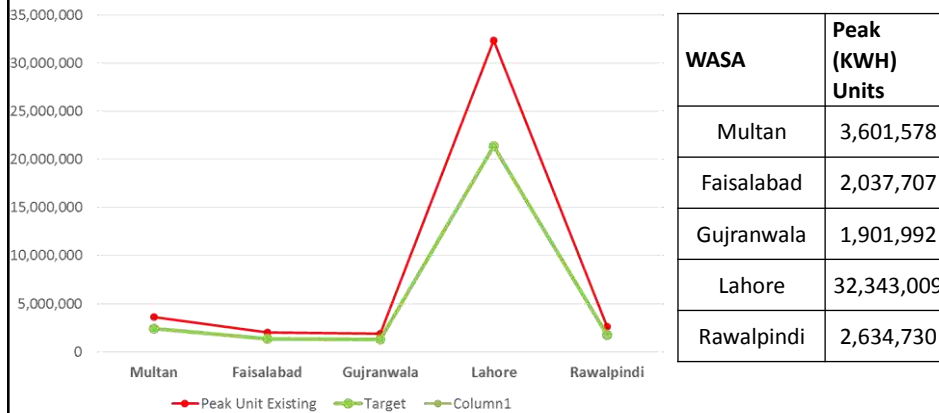
8

WASAs	Low Power Factor Penalty (PKR-In Million)
Multan	7.1
Lahore	21.3
Faisalabad	5.4
Gujranwala	5.9
Rawalpindi	3.6



Source: Energy Management Opportunities in WASAs of Punjab

GAP 5 : PEAK UNITS CONSUMPTION



Source: Energy Management Opportunities in WASAs of Punjab

GAP NO.6 NON REVENUE WATER

Name	Water Connections	Water Production (M cum)	% NRW	Water Loss (M Cum)
KW&SB	1.04 M	1,178	35	413
L-WASA	631,000	680	40	272
F-WASA	110,000	51	45	23
G-WASA	35,980	92	40	37
R-WASA	96,780	91	30	37
M-WASA	49,980	36	22	8
WSSP	83,650	-		
CDA	80,480	110	35	39
NSUSC	30,000	30.99	40	12
Total	2.15 M	2,268	37.5%	841

Source: World Bank report on Non-Revenue Water

The challenge

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**Fix the institutions that
should fix the pipes**



GROUP ACTIVITY 2 : TASK TARGET

12

SETTING

Time: 10 Min

WASA	GAPS	Base Line	Target Year 1	Target Year 2	Target Year 3
Lahore/ Gujranwala/ Multan/ Faisalabad/ Rawalpindi/ NSUSC	Pumping Efficiency (Low + Fair Pumps)				
	Peak Unit Consumption (PKR M)				
	MDI Unit Consumption (PKR M)				
	Power Factor Penalty (PKR M)				

GROUP ACTIVITY 3: COSTING FOR IMPLEMENTATION

13

Time: 10 Min

WASA	Tasks	Cost Year 1	Cost Year 2	Cost Year 3	Total Cost
Lahore/ Gujranwala/ Multan/ Faisalabad/ Rawalpindi/ NSUSC	Pumping Efficiency (Low + Fair Pumps)				
	Peak Unit Consumption (PKR M)				
	MDI Unit Consumption (PKR M)				
	Power Factor Penalty (PKR M)				

CHARACTERISTICS OF WELL-PERFORMING UTILITIES

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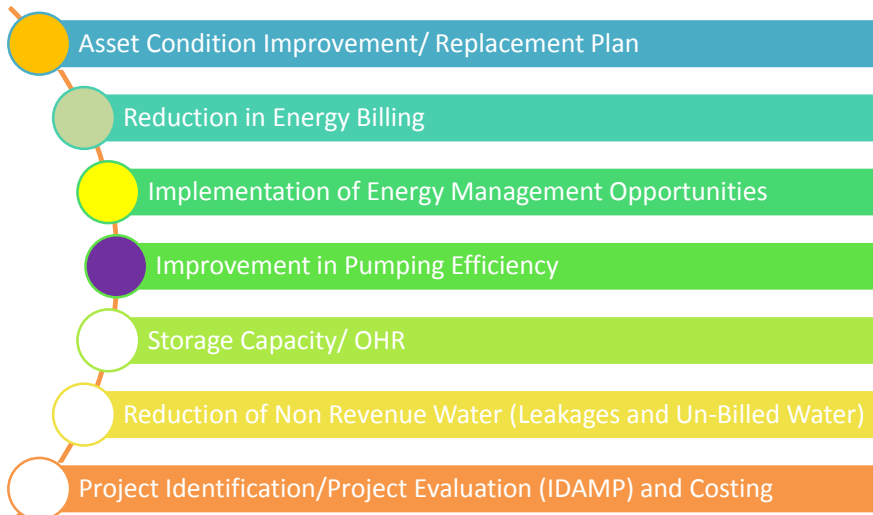
- Accountability towards its stakeholders
- Autonomy to develop sustainable business principles
- Customer focus to ensure a good service delivery
- Market orientation to use the best practices (efficiency).



TARGET /PHASING

Gaps	Total	Year 1	Year 2	Year 3
Power Factor	43.3	15	20	8.3
Peak Unit Consumption	42.5	15	20	7.5
MDI Consumption (x10000)	24.6	0.10	0.10	0.4
Pumping Efficiency	878	220	358	300

STRATEGIES



Thank You!

EFFICIENCY ENHANCEMENT

Revenue Saved Per Pump (Rs.) =

Unit Price (per KWH) * Load (%) * (1/old
Efficiency – 1/New Efficiency)

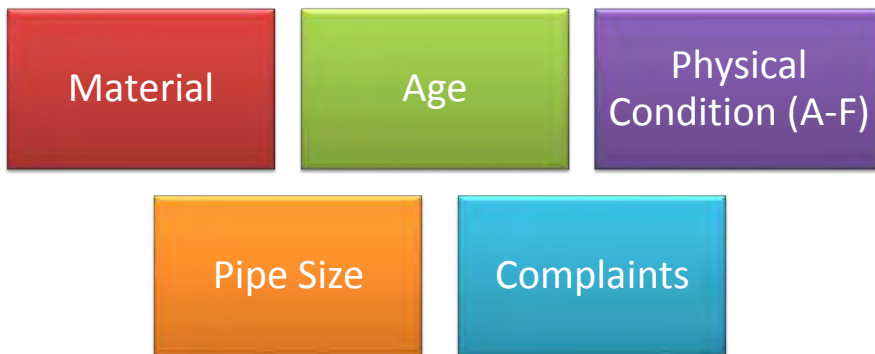
Avg. Revenue Saved Per WASA =

(No. of Tube wells) * Unit Price (per KWH) * Load
(%) * (1/avg. old Efficiency – 1/Avg. New Efficiency)

CONDITIONAL SURVEY PARAMETERS FOR TUBEWELLS



CONDITIONAL PARAMETERS FOR WATER SUPPLY LINES/SEWER LINES



EXERCISE

No. of Tube wells In WASA = 630 (WL), 415 (WR), 88 (WF), 66 (WG), 108 (WM)

Load (%) = 85

Unit Price (KWH) = Rs. 15

Avg. Old Efficiency of Pump = 0.42

Avg. New Proposed Efficiency = 0.72

Calculate revenue saved per year if operation time of tube wells is 16 hours a day.

REQUIRED

Each Group will fill the following table by choosing their utility. Each group will take the baseline information from the slides and will set the target to remove the gaps of efficiency and condition of the utility service delivery assets.

(Time 10 Minutes)

WASA	GAPS	Base Line		Target Year 1		Target Year 2		Target Year 3	
		Poor D	Fair C	Poor D	Fair C	Poor D	Fair C	Poor D	Fair C
Lahore/ Gujranwala/ Multan/ Faisalabad/ Rawalpindi/ NSUSC	Low & Fair Pump's Pumping Efficiency (No's)								
	Tube well Condition								
	Disposal Condition								
	OHR Condition								

REQUIRED

Each Group will fill the following table by choosing their utility. Each group will take the baseline information from the slides and will set the target to remove the gaps of efficiency, energy management gaps and non-revenue of the utility.

(Time 10 Minutes)

WASA	GAPS	Base Line	Target Year 1	Target Year 2	Target Year 3
Lahore/	Peak Unit Consumption (PKR M)				
Gujranwala/ Multan/ Faisalabad/	MDI Unit Consumption (PKR M)				
Rawalpindi/ NSUSC	Power Factor Penalty (PKR M)				
	Non-Revenue Water (%)				

REQUIRED

Each Group will fill the following table by choosing their utility. Each group will take the baseline information from the slides and will set the cost to remove the gaps of efficiency, energy management gaps and non-revenue of the utility.

(Time 10 Minutes)

WASA	Tasks	Cost Year 1	Cost Year 2	Cost Year 3	Total Cost
Lahore/ Gujranwala/ Multan/ Faisalabad/	Low & Fair Pump's Pumping Efficiency (No's)				
Rawalpindi/ NSUSC	Peak Unit Consumption (PKR M)				
	MDI Unit Consumption (PKR M)				
	Power Factor Penalty (PKR M)				
	Non- Revenue Water				

Rough Costs

Pump & Motor Replacement (2 Cusecs) = 2,500,000



Business Planning & GAP Analysis

Gap Analysis and Target Setting

For Under ground Assets - WASAs

Abid Hussainy
 Senior Capacity Development Specialist

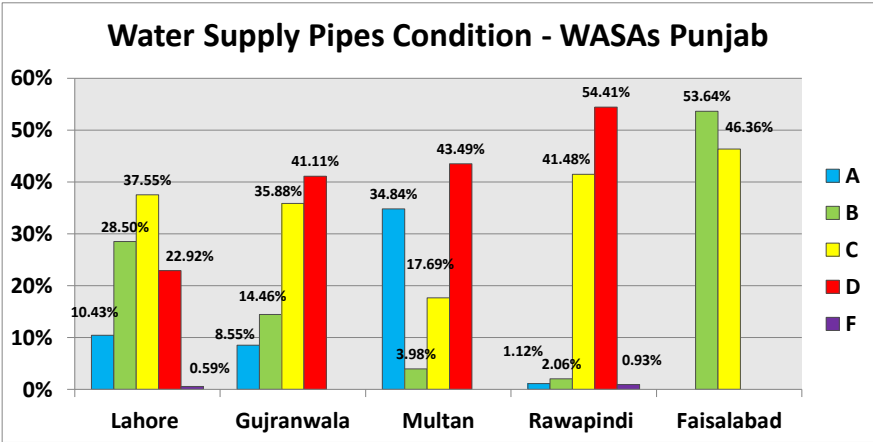
OBJECTIVES

- ✓ **Baseline of Underground assets**
- ✓ **Gaps Analysis**
- ✓ **Target Setting**
- ✓ **Formulation of Strategy**

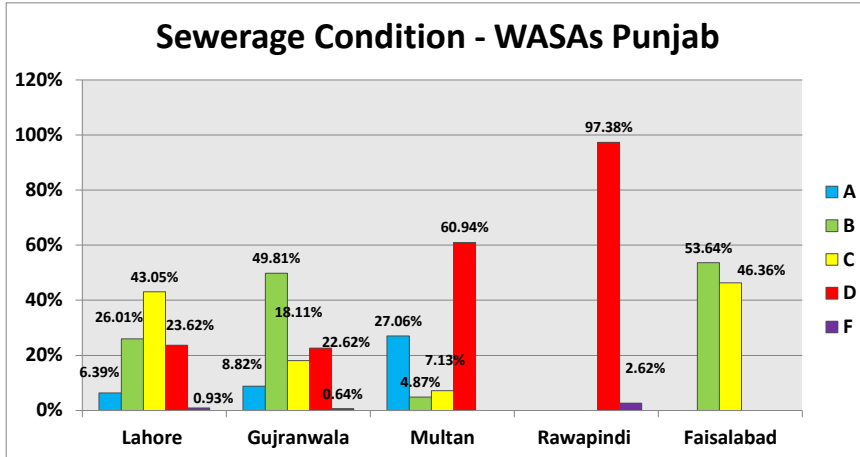
Baseline

Water and Sewerage - WASAs

Water Supply System



Sewerage System



Gaps Identification

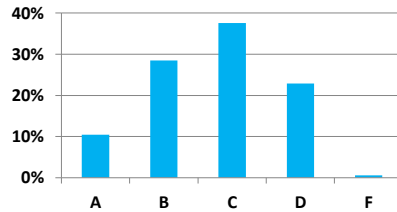
Water and Sewerage - WASAs

WASA Lahore

Water Supply Lines

Condition	Length (m)	% age
A	468158	10.43%
B	1278895	28.50%
C	1685124	37.55%
D	1028403	22.92%
F	26696	0.59%
Total	4487276	100%

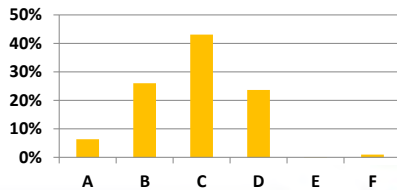
Lahore WS Condition



Sewerage Lines

Condition	Length (m)	%age Length (m)
A	253909	6.39%
B	1033531	26.01%
C	1710620	43.05%
D	937348	23.59%
F	36783	0.95%
Total	3973136	100.00%

Sewerage Condition - Lahore

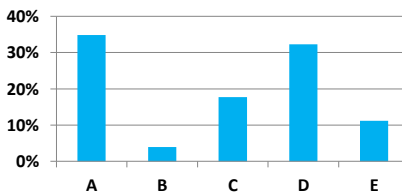


WASA Multan

Water Supply Lines

Condition	Length m	%age of Length
A	72119	34.84%
B	8244	3.98%
C	36618	17.69%
D	66819	32.28%
F	23200	11.21%
Total	207000	100.00%

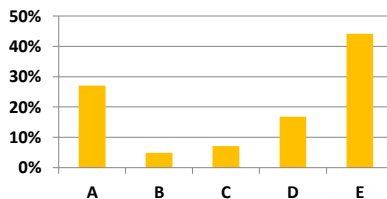
Multan WS Condition



Sewerage Lines

Condition	Length m	%age of Length
A	79403	27.06%
B	14305	4.87%
C	20931	7.13%
D	49351	16.82%
F	129490	44.12%
Total	293480	100.00%

Sewerage Condition - Multan



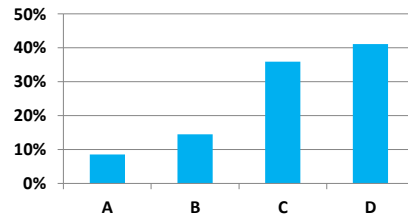
WASA Gujranwala

9

Water Supply Lines

Condition	Length (m)	% age of Length
A	71974	8.82%
B	406284	49.81%
C	147677	18.11%
D	184466	22.62%
F	5241	0.64%
Total	815641	100.00%

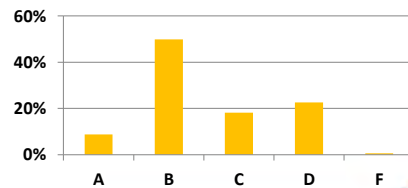
Gujranwala WS Condition



Sewerage Lines

Condition	Length m	%age of length
A	43316	8.55%
B	73248	14.46%
C	181777	35.88%
D	208281	41.11%
Grand Total	506623	100.00%

Sewerage Condition- Gujranwala



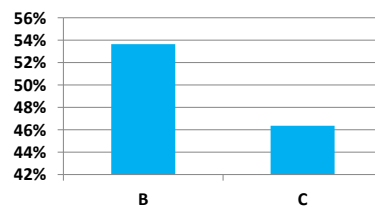
WASA Faisalabad

10

Water Supply Lines

Condition	Length m	%age of Length
B	14017	90.44%
C	1481	9.56%
Total	15498	100.00%

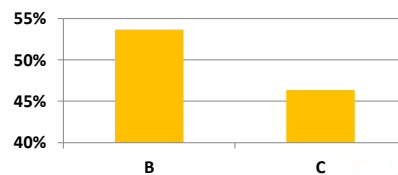
Water Supply Condition



Sewerage Lines

Condition	Length m	%age of Length
B	943854	53.64%
C	815594	46.36%

Sewerage Condition - Faisalabad

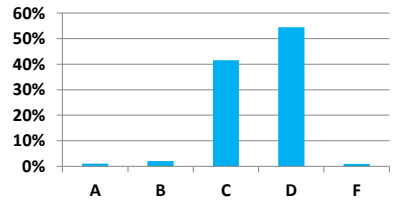


WASA Rawalpindi

Water Supply Lines

Condition	Length m	%age of Length
A	8065	1.12%
B	14752	2.06%
C	297470	41.48%
D	390222	54.41%
F	6678	0.93%
Total	717187	100.00%

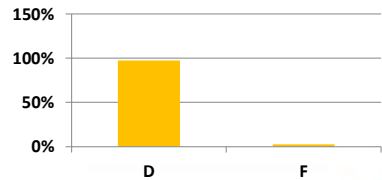
Rawalpindi WS Pipes Condition



Sewerage Lines

Condition	Length	%age of Length
D	130796	97.38%
F	3526	2.62%

Sewerage Condition - Rawalpindi



Exercise of Identifying Gaps by using MS Excel

Exercise of identifying gaps using MS Excel

Excel Data of Water Supply & Sewerage Pipes

Sub_Div	Dia	Material	Year_of_ Co	Level_	Condition	Risk	Year_of_ Re	Rep_Dia	Length m
Zone3-B	4"	AC	1982	T	C	M	1	6"	0.106936
Zone1-Northern	4"	AC	1982	P	C	M	1	6"	10.26912
Zone3-A	6"	AC	1982	P	C	M	1	8"	276.7541
Zone3-A	3"	AC	1982	S	C	M	1	4"	175.483
Zone1-Southern	4"	AC	1980	S	D	M	1	6"	121.3562
Zone1-Southern	4"	AC	1980	S	D	M	1	6"	93.08071
Zone1-Southern	4"	AC	1980	S	D	M	1	6"	17.38018
Zone1-Southern	6"	AC	1980	S	D	M	1	8"	253.9245
Zone1-Southern	4"	AC	1980	S	D	M	1	6"	13.77523
Zone3-B	4"	PVC	2008	P	B	M	12	6"	244.1071
Zone3-B	4"	AC	1980	T	D	M	1	6"	145.1322
Zone3-B	4"	AC	1980	T	D	M	1	6"	32.19875
Zone3-B	4"	AC	1980	T	D	M	1	6"	108.7276
Zone3-B	4"	AC	1980	T	D	M	1	6"	103.22
Zone3-B	4"	AC	1980	T	D	M	1	6"	58.31624

Asset attribute/information

Asset parameters include :

1	Diameter (inch)
2	Material (pipe material)
3	Year of Installation
4	Level (P,S T)
5	Condition (A,B,C,D,F)
6	Risk (H,M L)
7	Replacement Year
8	Replacement dia
9	Town Name
10	Subdivision/Zone Name

➤ Asset Condition

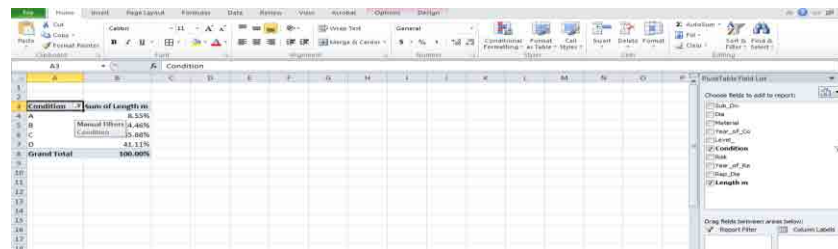
Asset condition explains its state in term of defined ranking. For example

A =	Excellent: No noticeable defects. Some aging or wear may be visible.
B =	Good: Only minor deterioration or defects are evident.
C =	Fair: Some deterioration or defects are evident, but function is not significantly affected.
D =	Poor: Serious deterioration in at least some portion of the structure. Function is inadequate.
F =	Failed: No longer functional. General failure or complete failure of a major structural component.



Using Excel tools for Analysis

1. Open Excel data given
2. Select the data
3. Go to Insert table and Click on Pivot Table
4. Drag and Drop the Condition field to Row Labels & Length Field to Values



TARGETS SETTING

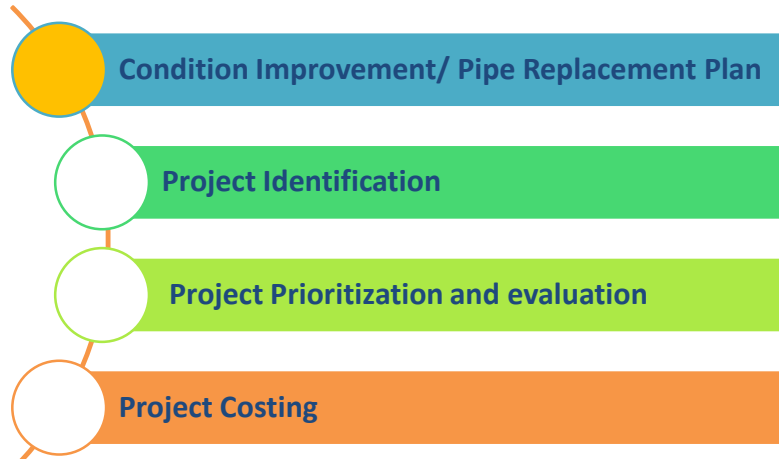


Setting Targets to improve asset condition

	Baseline			Targets		
	C	D	F	Year 1	Year 2	Year 3
WASA	Length (m)	Length (m)	Length (m)	C (m)	D (m)	F (m)
Lahore						
Gujranwala						
Multan						
Rawalpindi						
Faisalabad						



Strategies



Module 1

Day 2

Individual Activity: Target Setting

	Baseline			Targets		
	C	D	F	Year 1	Year 2	Year 3
WASA	Length (m)	Length (m)	Length (m)	C (m)	D (m)	F (m)
Lahore						
Gujranwala						
Multan						
Rawalpindi						
Faisalabad						

Condition Ranking

A =	Excellent: No noticeable defects. Some aging or wear may be visible.
B =	Good: Only minor deterioration or defects are evident.
C =	Fair: Some deterioration or defects are evident, but function is not significantly affected.
D =	Poor: Serious deterioration in at least some portion of the structure. Function is inadequate.
F =	Failed: No longer functional. General failure or complete failure of a major structural component.

Day 3 : Performance Improvement Plan

Group Activity:

Pipe Replacement Costing – Water Supply Lines

Diameter	Length	Unit Cost (Per m)	Pipe Cost (A)	Construction Cost (B)	Total Cost (A+B)
3"					
4"					
6"					

Day 4 : Performance Improvement Plan

Group Activity:

Pipe Replacement Costing – Sewerage Lines

Diameter	Length	Unit Cost (Per m)	Pipe Cost (A)	Construction Cost (B)	Total Cost (A+B)
9"					
12"					

Performance Improvement Plan

MRS Rates Lahore

HDPE Pipes Rates (Lahore)	
Dia	Rate /m
4	351.64
5	412.28
6	485.04
8	703.28
10	1057.8
12	1701.1

Asbestos Cement Pipes Rates	
Pipe Size"	rates
3	719.8
4	935.15
6	1479.1
8	2484.05
10	3380.05
12	4465.75
14	6396.4
16	8133.3
18	10117.1
20	12447.65
24	17178.1



In the name of Allah, the Beneficent, the Merciful بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

1

Performance Improvement Plan

Water Supply and Sewerage System

Mr Ali Rao and Ms Aneeqa Azeem

Sr. Research Analyst

Service Improvement by Replacement & Extension of Water Supply & Sewerage Network

2

Steps:

1. Marking of lines to be replaced on GIS base map
2. Marking of New lines on GIS base map for improving % of water supply coverage
3. Tube well Rehabilitation
4. Operationalization of OHRs
5. Making Project in phased manners
6. Costing of Projects based on pipe length

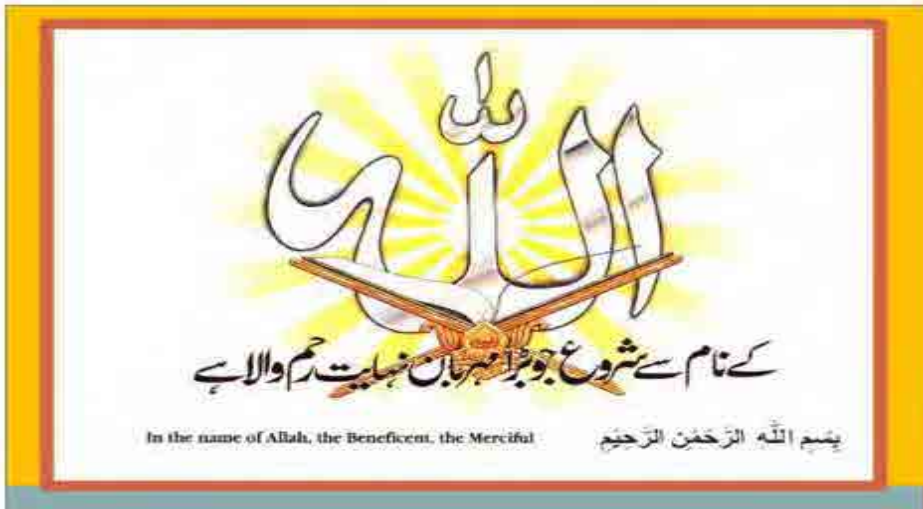
Costing

Project Cost

Water Supply Pipe replacement or New Installation

Diameter	Length	Unit Cost (Per meter)	Pipe Cost (A)	Construction Cost (B)	Total Cost (A+B)
3"					
4"					
6"					





MODULE - 3

Strategies for Human Resource Development

STRATEGIES FOR HUMAN RESOURCE DEVELOPMENT

(with Individual Activities, Group Exercises and Group Presentations)



Lecture Overview

1. Training Need Analysis (TNA)
2. Training Schedule and Training Calendar
3. Training Budget Forecasting
4. Training Plan
5. Monitoring and Evaluation Tools

3



Learning Objectives

1. Ability to conduct Training Needs Analysis
2. Ability to Prepare Training schedule and Training Calendar
3. Learn about training Monitoring and Evaluation
4. Forecast Training Budget
5. Formulate Training Plan for their own WASAs

4



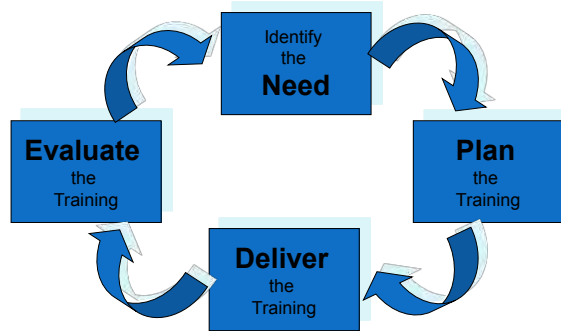
Human Resource Development

- Trainings develop employees for their current jobs and prepare employees for future roles and responsibilities.
- Trainings help employees to master skills, knowledge, positive attitudes, sense of self-worth and confidence.

Training Management Cycle



The Training Process



Training Need Assessment

Training Need Assessment

- Analyzing what the training needs are is a vital prerequisite for any effective training program or event.
- Simply throwing training at individuals may miss priority needs, or even cover areas that are not essential.
- TNA enables to channel resources into the areas where they will contribute the most to employee development, enhancing morale and organizational performance.

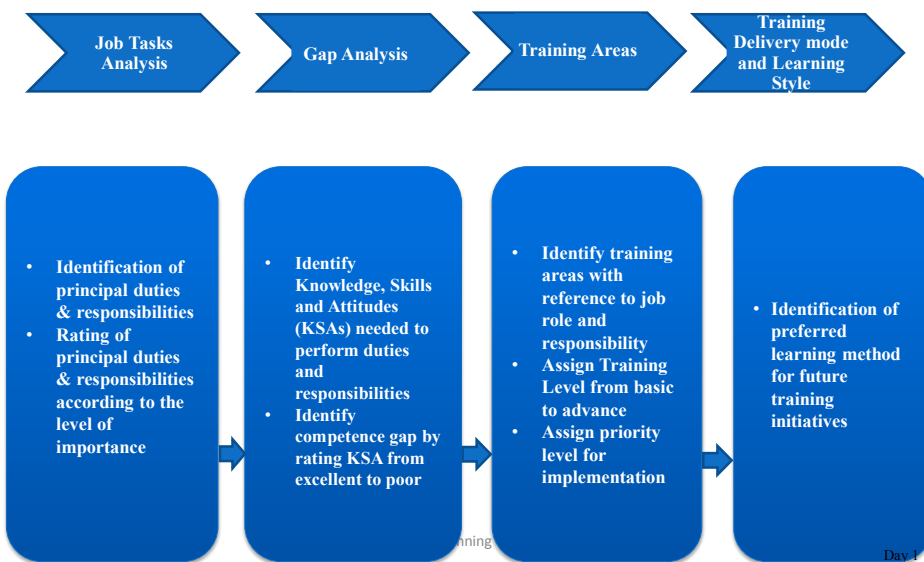
Training Need Assessment

- Identify a comprehensive list of the required knowledge, skills and attitudes (KSA) needed for each job role.
- Propose training plan to develop those needed KSA.

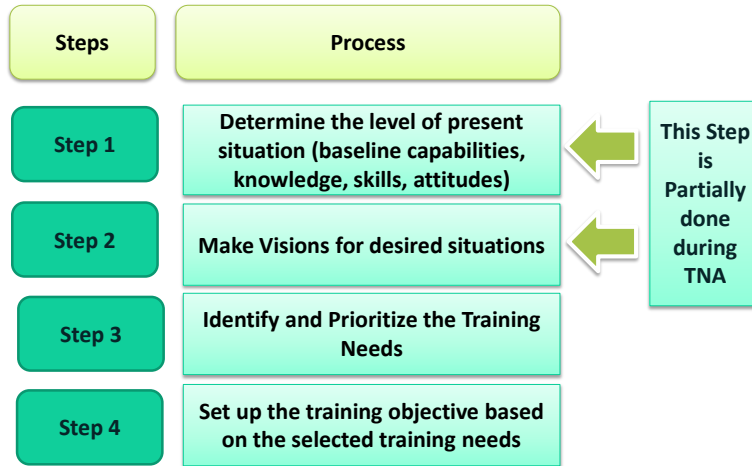
Training Needs Assessment (TNA) Procedure

1. Job Tasks analysis – principal duties and responsibilities
2. Gap analysis- KSA
3. List of potential areas for training to fill these gaps
4. List training needs according to job roles
5. Understand preferred training modes i.e. classroom, field work, on job, etc.

TNA Process



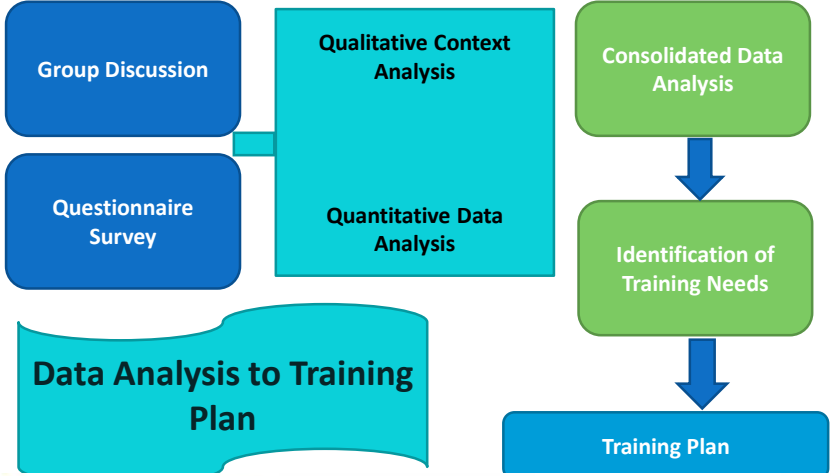
Steps in Identifying Training Needs



GAP ANALYSIS



Flow of Activities from Data Analysis to Training Plan



Activity One: Role Description and Analysis – 20 minutes

1. Record your principal duties, tasks and responsibilities– maximum 3 Which you consider most important
2. List the sub-tasks related to each task

Activity Two: Gap Analysis - 20 minutes

This activity focuses to identify list of knowledge, skills and attitudes (KSAs) needed to perform your job

1. Discuss and List relevant KSAs needed to perform each sub-task
2. Rank your existing competency (1 very poor competence – 5 excellent competence)

Activity Three: Proposed training for each job roles – prioritise

1. Identify potential training areas to develop KSAs
2. Assign training level from (basic to advance)
3. Assign priority level (high to Low)

Example: Training Priority and Course Level

Training Priority and Course Level						
Course #	Courses Name/ Title	Contents	Details	Category of Targeted employees	VUSA Rating	
					Priority	Course Level
TW001	Tubewell	Pumps	Turbines column pipe, spiders, shafts, pump head, gland packing, gland leakage, filter, borehole flow meters, valves and pipes.	ADISE	High	UNPC
		Motors	Motor types, Power factor calculations and motor replacement/adjustments	ADISE	High	Basic
TW002	Treatment Plant	Rapid Gravity Filter	Filter Media, Pumps, Electric Panels, Coagulants, Reagents	ADISE	Low	Basic
		Slow Sand	Filter Media, Sedimentation Tanks, SCRF	ADISE	Low	Basic
TW003	Pumping Stations	Chemisation	Health & Safety	ADISE	High	Basic
		Pumps	Reciprocating pumps, vertical pumps, valves, bearings/Cleaning	ADISE	High	Basic
TW004	OHR (Over Head Reservoir)	Chemisation	Chemical	ADISE	High	Basic
		Reservoirs	Periodic Inspection, Cleaning	ADISE	High	Basic
TW004	OHR (Over Head Reservoir)	Electric	Electric Panels and Circuits	ADISE	High	Basic
		Mechanical	Centrifugal pump fittings	ADISE	High	Basic
TW004	OHR (Over Head Reservoir)	Civil	Reservoirs	ADISE	High	Basic
		Distribution Panel Box	Capacitor, Magnetic Contactor, Circuit Breaker, Relays and Terminals	ADISE	High	Basic
TW001	Electric Panel	Power Factor Improvement Panel	Impedance Calculations, Common defects	ADISE	High	Basic
		HT, LT Protection Panels	Necessities, Working Rules and Manual changeover panels	ADISE	High	Basic

Priority Order	Subject	Classroom Score 11 to 100 (lowest and 1 is the Highest)
1	TURBINES	10
2	TREATMENT PLANT	1
3	PUMPING STATIONS	5
4	OHR (Overhead Reservoir)	5
5	ELECTRIC PANELS	10

Please list **Priorities** as High, Medium and Low.
Classroom Score will show the level of training required in a particular field. Please list this course as Advance, Intermediate or Basic.
 If a facility is running, give available from 10 with **Not Required**.



Activity Four: Learning Style and Preferred Methods

Reflect on past training experiences – what has worked/not worked.

- Consider the variety of techniques that could be deployed - On-job; off-site; etc.

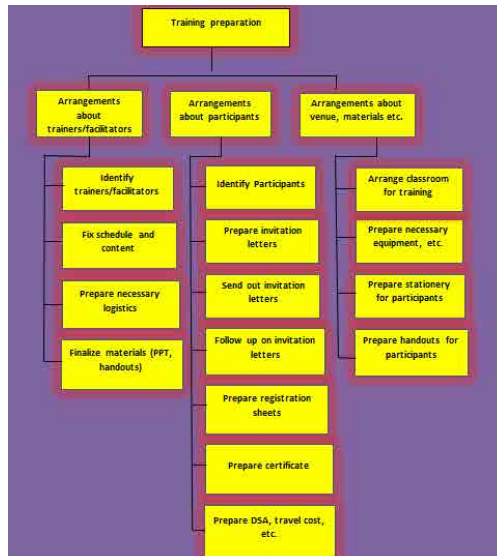


TNA Data Report Format

This spreadsheet represents the data collected in the Assessment Tool. The format allows the data to be manipulated, all organizational reports will be rolled into one report in this format.

Training										Budget				
Name of Participant	WASA	Phone	Email	Department	Job Title	Courses	Priority			Level	No. of Employees/ Needed Training	Course Costs	Total Cost	
							1	2	3	Basic	Medium	Advance		
												Grand Total =		

TRAINING PREPARATION



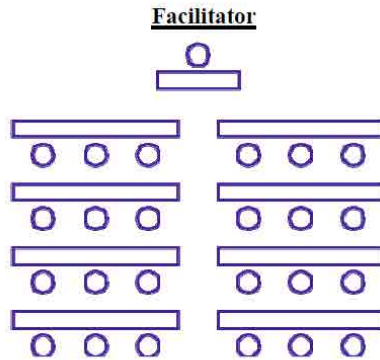
Work Schedule

	A	B	C	D	E	F	G	H	I	J	K	L
	Activity	Person in Charge	Completion Date		May				June			
					28	29	30	31	1	2	3	4
4	1. Arrangements about the trainer/ Facilitator											
5	1.1. Identify Trainers/ Facilitators											
6	1.2. Fix Schedule and Events											
7	(translaor, fees etc.)											
8	1.4. Finalize materials (PPTs, Handouts etc.)											
9												
10	2. Arrangements about participants											
11	2.1 Identify Target Participants											
12	2.2 Prepare invitation letters											
13	2.3 Send out invitation letters											
14	2.4 Follow up on invitation letters											
15	2.5 Prepare registration sheets											
16	2.6 Prepare certificates											
17	cost											
18												
19	3. Arrangements about Venue, Material etc.											
20	coffee etc)											
21	3.2 Prepare necessary equipment											
22	3.3 Prepare stationery for participants											
23	3.4 Prepare Handouts for participants											



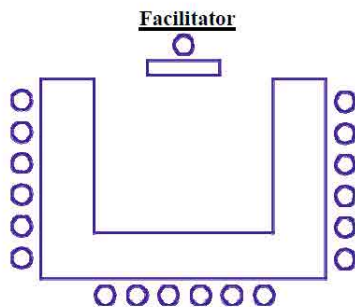
Training Room Arrangement

Traditional Classroom Arrangement

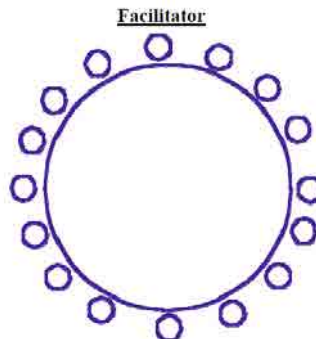


Cooperative Style Arrangement

Open Meeting Style Table Arrangement



Round Table Arrangement



Budget Forecasting Activity Format

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1	Items	Quantity	Unit Price	Amount PKR
2	1. Marketing			
3	Colored Brochures			
4			Subtotal	
5	2 Professional Staff			
6	Trainers/Facilitators			
7			Subtotal	
8	3. Documentation			
9	Handouts/Workbooks, Files & Folders			
10			Subtotal	
11	4. Transport & Travelling			
12	Coasters for Field Visits			
13	Fuel			
14	Maintenance			
15			Subtotal	
16	5. Equipment			
17	Safety Equipment Kits			
18	Surveyor's Wheel			
19	Sludge Measurement Tools			
20	Insulation Testers			
21			Subtotal	
22	6. Communication			
23	Telephone/Fax			
24	Internet			
25	Courier Charges			
26			Subtotal	
27	7. Lighting & Fuel			
28	Electricity			
29	Gas			
30	Water			
31			Subtotal	
32	8. Refreshments			
33	Tea Break			
34	Lunch			
35			Subtotal	
36	9. Miscellaneous Stationery, Markers, Charts etc			
37			Subtotal	
38				
39				
40	Grand Total			

Example: Training Budget

28

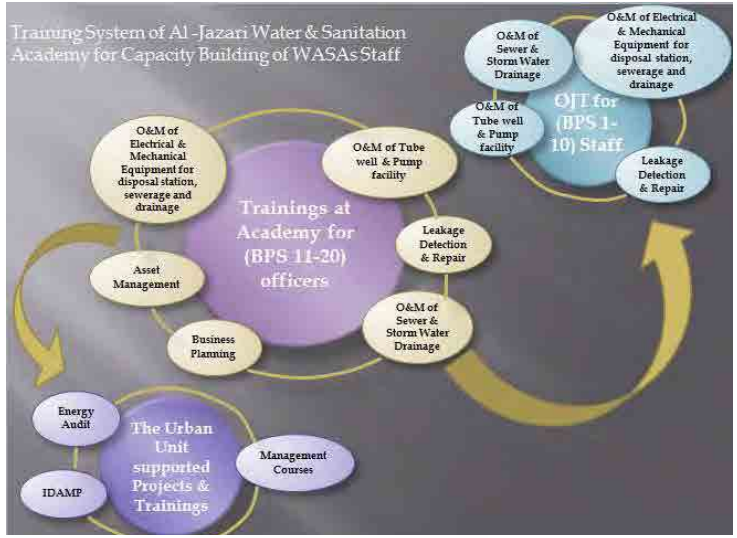
1	Items	Quantity	Unit Price	Amount PKR
2	1 Marketing			
3	Colored Brochures	100	50	5000
4			Subtotal	5000
5	2 Professional Staff			
6	Trainers/Facilitators	4	30,000/Day	120,000
7			Subtotal	120,000
8	3. Documentation			
9	Handouts/Workbooks, Files & Folders	20	500	10,000
10			Subtotal	10,000
11	4. Transport & Travelling			
12	Coasters for Field Visits	1	15,000	15,000
13	Fuel	1	3000/day	3000
14	Maintenance	1	5000/week	5,000
15			Subtotal	230,000
16	5. Equipment			
17	Safety Equipment Kits	20	3000	60,000
18	Surveyor's Wheel	5	4000	20,000
19	Sludge Measurement Tools	5	4000	20,000
20	Insulation Testers	5	5000	25,000
21			Subtotal	125,000
22	6. Communication Cost			
23	Telephone/Fax	2	5000/month	10,000
24	Courier Charges	100	20/packet	2,000
25	Internet	2	4000/month	10,000
26			Subtotal	22,000
27	7. Lighting & Fuel			
28	Electricity	50000/month		50,000
29	Gas	20000/month		20,000
30	Water	20000/month		20,000
31			Subtotal	90,000
32	8. Refreshments			
33	Tea Break	20	500/person	10,000
34	Lunch	20	2000/person	40,000
35			Subtotal	50,000
36	9. Miscellaneous Stationery, Markers, Charts etc			
37		20	400	8,000
38			Subtotal	8,000
39				
40	Grand Total			660,000

Example Key Elements of Training Management

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Training Plan

Outline of a Training Plan

1. Tentative Course Title
2. Definition of the Training Scope
3. Identification of the Target Group
4. Identification of Key Course Topics and Generic Course Activities
5. Estimation of Development Time
6. Identification of Required Resource
7. Course Duration
8. Outline of the Course Development Budget

Example: Training Target and Expected Contents

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No.	Courses	Number of Training Targets			Type of Trainees	Expected Contents
		2015-2016	2016-2017	2017-2018		
1.	O&M of Tube Wells and Pump Facility	12	12	12	Engineers	<ul style="list-style-type: none"> • Pump Facilities • Water Distribution System • Centrifugal pump, • Chlorine supply system
2.	Leakage Detection & Repair	25	20	20	Engineers	<ul style="list-style-type: none"> • Leakage Control and detection • Repair of pipes • Identify buried leaks • Installation of Leak Detection Equipment
3.	O&M of Sewerage & Storm Water Drainage	15	15	15	Engineers	<ul style="list-style-type: none"> • Inspection of sewers, drains and networks • Causes of silting, choking and clogging of sewers • Testing techniques while taking in to account health and safety aspects
4.	Asset Management	10	10	10	Administration and Accountants	<ul style="list-style-type: none"> • Development of Asset database • Asset Replacement Planning • Asset Information • GIS
5.	O & M of Electrical Equipment	10	10	10	Engineers and technician	<ul style="list-style-type: none"> • Electrical control panels • SCADA • Preventive maintenance techniques
6.	O & M of Mechanical Equipment	10	10	10	Engineers and technician	<ul style="list-style-type: none"> • Water pumps, motors, water meters, valves. • Maintenance method for generator



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Training Schedule



Format : Training Course Schedule

Date and Time	Course Title	Level	Aims	Training Session Objectives	Training Method (s)	Location	Materials Required	Assessment Method
							(e.g. Textbook, pen/pencil, notebook)	

Example: Training Course Schedule October, 2016 – May, 2017

Sr.No	Codes	Courses Title	Days	October	November	December	January	February	March	April	May	June
1	W7221	Leakage Detection and Repair	4 (Cycle 1) 5 (Cycle 2)	█				█				
2	W1221	Operation and Maintenance of Tube Well and Pump	5		█				█			
3	S 3221	Operation and Maintenance of Sewer and Storm Water Drainage	9		█	█		█	█			
4	M 4131	Asset Management	15		█	█						
5	WSD 5231	Operation and Maintenance of Electrical Equipment	9			█	█			█	█	
6		Operation and Maintenance of Mechanical	10				█	█			█	█
7	B 1131	Business Planning	10					█	█			
Total working Days:- 180 Total Training Days :- 100 Days * Al-Jazari Academy reserves the right to revise the schedule without prior notice												

Format: Training Course delivery

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Schedule

Training Schedule									
October, 2016 – February, 2017									
		Plan/Actual	Start Date	End Date	October	November	December	January	February
4	O&M of Tube Well and Pump Facility	Plan							
5		Actual							
6	Leakage Detection and Repair	Plan							
7		Actual							
8	O&M of Sewerage and Storm Water Drainage	Plan							
9		Actual							
10	O&M of Electrical Equipment	Plan							
11		Actual							
12	Asset Management	Plan							
13		Actual							
14	O&M of Mechanical Equipment	Plan							
15		Actual							
16	Business Planning	Plan							
17		Actual							



Example: Training Schedule

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Sr. No.	Course	Days	Cycle	Dates
1	Leakage Detection and Repair	4	1	3 rd October 2016 – 6 th October 2016
2	Operation & Maintenance of Tube well and Pump Facility	5	1	24 th October 2016 – 28 th October 2016
3	Operation and Maintenance of Sewer and Storm Water Drainage including Health and Safety	9	1	31 st October 2016 – 2 nd November 2016 (Module 1)
				3 rd November 2016 – 4 th November 2016 (Module 2)
				14 th November 2016 – 17 th November 2016 (Module 3)
4	Asset Management	15	1	31 st October 2016 – 2 nd November 2016 (Module-1)
				3 rd November 2016 – 4 th November 2016 (Module 2)
				21 st November 2016 – 22 nd November 2016 (Module 3)
				23 rd November 2016 – 24 th November 2016 (Module 4)
				5 th December 2016 – 6 th December 2016 (Module 5)
5	Operation and Maintenance of Electrical Equipment	9	1	7 th December 2016 – 10 th December 2016 (Module 6)
				23 rd November 2016 – 25 th November 2016 (Module 1)
				30 th November 2016 – 2 nd December 2016 (Module 2)
6	Operation & Maintenance of Mechanical Equipment	12	1	7 th December 2016 – 9 th December 2016 (Module 3)
				19 th December 2016 – 21 st December 2016 (Module 1)
				26 th December 2016 – 28 th December 2016 (Module 2)
				2 nd January 2017 – 4 th January 2017 (Module 3)
7	Business Planning	15	1	9 th January 2017 – 11 th January 2017 (Module 4)
				30 th January 2017 – 7 th February 2017
				20 th February 2017 – 24 th February 2017
				6 th March 2017 – 9 th March 2017



Holidays	
• October 11, 12, 2016	• Ashura Days
• November 09, 2016	• Iqbal Day
• December 12, 2016	• *Eid Milad-un-Nabi
• February 05, 2017	• Kashmir Day
• March 23, 2017	• Pakistan Day
• May 01, 2017	• Labour Day
*Subject to sighting of the moon	

Day Wise Training Schedule

Sr. No	Day and Date	Themes	Session 1			Session 2		Lunch 11:15- 2:00pm	Session 3	
			9:00-10:00am	10:00-11:00am	Tea 11:00- 11:15am	11:15am- 12:15 pm	12:15-1:15pm		2:00-3:00pm	3:00-4:00pm
1	Monday (October 31, 2016)	Introduction to Asset Management Assets & Asset Condition	Definition of Assets Assets of WASAs	Three different Exercises to identify assets and asset components		Asset Coding structure Asset Condition Assessment & scale to determine Asset conditions.		Assignment 1- Discuss Asset Management System in WASAs/ KWSB/ NSLUSC with respect your organization and prepare a brief report of 300 words.		
2	Tuesday (November 1, 2016)	Risk & Application of Asset attributes Asset Management Plan	Ways to determine Risk and application of attributes of assets in effective decision making			Asset Management Plan preparation techniques and discussion on Asset Management Plan of WASA		Assignment 2- Prepare a brief asset risk report of 300 words.		
3	Wednesday (November 2, 2016)	Accounting and reporting of assets in books of accounts Introduction of Asset Management Information System (AMIS)	Accounting practices for fixed assets in WASAs under Financial Management Manual and developed utilities Depreciation & Fixed Asset Register			Introduction of Asset Management Information System (AMIS) Registration of Users & Addition of Assets into AMIS		Assignment 3- Individual Assignment for formation of Fixed Asset Register		
4	Thursday (November 3, 2016)	Asset Management Information System (AMIS) operating skills	Searching and Editing of Assets into AMIS Reporting of AMIS Conclusion and Suggestions			Brief introduction of IDAMP, GIS & AMIS for underground asset		Assignment 4- Individual Assignment to add one to two assets for each category and prepare a brief report for		
5	Friday (November 04, 2016)	Preparation of Project & Presentation	Project 1-Preparation of Asset Management Plan of 5-10 tubewells or any area of utility service			Project 1-Preparation of Asset Management Plan of 5-10 tubewells or any area of utility		Project 1-Presentation on project		

Monitoring and Evaluation

Monitoring and Evaluation Tools

1. Design Pre/Post Test
2. Keep Record of Participants Attendance (Example)
3. Trainer Evaluation Form
4. Course Evaluation Form
5. Maintain course participants' Training Record (Example)

Format: Course Attendance

Asset Management									
Attendance			21-Oct-18	1-Nov-18	2-Nov-18	3-Nov-18	4-Nov-18	Marks Allocation	Comments
Sr No.	Name		5.00	5.00	5.00	5.00	5.00	25.00	

Assessment Criteria				

Example: Course Attendance

Asset Management									
Attendance			21-Oct-18	1-Nov-18	2-Nov-18	3-Nov-18	4-Nov-18	Marks Allocation	Comments
Sr No.	Name		5.00	5.00	5.00	5.00	5.00	25.00	
1	Mr. Sohail Siddhu	WASA Lahore	5.00	5.00	5.00	5.00	5.00	25.00	
2	Mr. Muhammad Danish	WASA Lahore	4.25	4.25	4.75	5.25	5.00	22.00	
3	Mr. Adnan Sharif	WASA Lahore	0.00	3.50	3.50	3.50	5.00	16.00	
4	Mr. Sohail Chohan	WASA Lahore	4.25	4.25	4.25	5.00	5.00	22.75	
5	Mr. Shamsi Ayub	WASA Lahore	0.00	0.00	0.00	0.00	0.00	0.00	
6	Mr. Abdul Rehman	WASA Lahore	3.50	4.25	4.50	4.25	4.25	20.25	
7	Mr. Ghaffar Sadiq	WASA Lahore	4.50	4.25	3.50	3.75	5.00	21.00	
8	Mr. Asghar Ali	WASA Lahore	0.00	0.00	0.00	0.00	0.00	0.00	
9	Mr. Muhammad Tauseef	WASA Gujranwala	4.25	5.00	5.00	5.00	5.00	24.25	
10	Mr. Tufail Ghuman	WASA Gujranwala	0.00	5.00	5.00	5.00	5.00	20.00	1st & 2nd week Informing after the first half on Oct 18

Assessment Criteria				
	9am - 11 am	11am - 1pm	2pm - 4pm	Absent
Marks	1.5	1.5	2	0

Format: Participant Details

Sr. No.	Name	WASA	Designation	Leakage detection and repair	Tube Well and Pump Facility	Sewerage and Storm Water Drainage	Asset Management	Electrical Equipment	Comments/Status
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									



Example: Participants' Details

Sr. No.	Name	WASA	Designation	Leakage detection and repair	Tube Well and Pump Facility	Sewerage and Storm Water Drainage	Asset Management	Electrical Equipment	Comments/Status
61	Mr. Muhammad Tariq Malik	WASA Rawalpindi	Sub Engineer	-	-	Attended	-	-	
68	Mr. Samran Zahid	WASA Rawalpindi	Sub Engineer	Attended	-	-	-	-	
69	Mr. Ahsan Ejaz	WASA Quetta	Sub Engineer	-	-	-	-	Attended	
70	Mr. Ali Akbar	WASA Quetta	Assistant Engineer	-	-	Nominated	-	-	Did not attend
71	Mr. Haji Salah ul Din	WASA Quetta	Supervisor	-	-	Attended	-	-	
72	Mr. Mohammad Asif	WASA Quetta	Sub Engineer	-	Attended	-	-	-	
73	Mr. Muhammad Ramzan	WASA Quetta	NEN	Attended	-	-	-	Attended	
74	Mr. S. Mahtab Sherzad	WASA Quetta	Assistant Engineer	-	Attended	-	-	-	
75	Mr. Sahib ul din	WASA Quetta	Supervisor	Attended	-	-	-	-	
76	Mr. Zakar Hussain	WASA Quetta	Assistant Engineer	-	-	Attended	-	-	
77	Hafiz Faraz Ak	TMA Sukkur	Sub Engineer	-	Attended	-	-	Attended	
78	Mr. Bilal Arain	TMA Sukkur	Sub Engineer	-	-	Nominated	-	-	Did not attend
79	Mr. Muhammad Ali	North Sindh Urban Services Corporation Limited	Manager Operations and Services	-	-	-	Attended	-	
80	Hassan Mehmood	PHED (North)	Assistant Engineer	-	-	-	-	Nominated	Did not attend
81	Mr. Iqbal Sabir Shah	PHED (South)	SDO	-	-	Attended	-	-	
82	Mr. Ahsan Iqbal	PHED Quetta	Sub Engineer	Attended	-	-	-	-	
83	Mr. Nasir Lehar	PHED Quetta	SDO	Attended	-	-	-	-	



STRATEGIES FOR HUMAN RESOURCE DEVELOPMENT

(Workforce Database Analysis)

Business Planning - B1131

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Outcomes

3

By the end of this lecture participants will be able to:

1. Demonstrate the Need for Staffing Analysis
2. Using MS Excel for HR Database analysis and further planning.
3. Practice on data to extract information.

Why Workforce Data is key to strategic HR Decisions

4

- Workforce data analysis is not just about making HR better, *it's about making the business better and taking informed decisions*
- HR data driven business decisions leads to develop workforce plan that optimize talent investment while effectively monitoring recruiting, development, productivity, accountability, retention and many other workforce initiatives.



Current Situation Analysis

5

- Human Resource Data is available in all WASAs in different forms, however WASAs need to properly access them, align the information with decision-making, and act accordingly
- All WASAs expressed the need for proper HR planning, but there is need to develop culture for Data Driven Decision Making



Overview

6



Data



Information



Decision

Staff Deficit and Aging Analysis (Raw Data)

7

Step 1: Open Raw Data sheet on your desktop

Name	Emp No	DOB	Grade	Service Years	Designation	Department
MUHAMMAD SHAZIB AMIN	200351	19-06-92	17	3	Asstt. Director	Dir. Admn (Officers)
SANA FATIMA	200442	15-11-89	17	3	Asstt. Director	Dir. P&D (Officers)
SUMAIRA IFTIKHAR	200475	25-12-88	17	3	Asstt. Director	Dir. P&D (Officers)
MURTAZA HASSAN	200986	12-11-87	17	3	Asstt. Director	Dir. Revenue Officers
MIAN HAMID LAL	79221	19-02-87	17	5	S.D.O.	DC-1 (Officers)
MUZAFFAR ABBAS	79061	05-02-87	17	5	S.D.O.	DC-1 (Officers)
ALI ASLAM KHOKHAR	200613	25-03-86	17	3	Asstt. Director	Dir. Admn (Officers)
MISS TAJWAR SAEED	200497	11-02-84	17	3	Asstt. Director	Director P&E (Off)
ANJUM RASOOL	76539	21-12-82	15	8	Sup. Comp. Operations	DDR (RAW TOWN)
ASIF ALI	75683	02-02-82	16	10	Senior Accountant	Dir. Finance Officer
MUHAMMAD AZHAR MUSHTAQ	76528	12-12-91	15	8	Sup. Comp. Operations	DDR (A1 TOWN)
SHAZIL WAQAR	75681	28-11-81	17	8	S.D.O.	Dir P&S (Officers)
SYED ABID RAZA	75658	10-08-80	17	8	S.D.O.	Director Drainage
RIAZ ELAHI WILLIAM	77167	09-10-86	17	8	S.D.O.	Director P&E (Off)

Activity: Determine Age

8

- Step 2: Enter the following formula

=DATEDIF(C2,TODAY(),"Y") to get the age of employees to date

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1		Name	Emp No	DOB	Grade	Service Years	Designation	Department	Age										
2		MUHAMMAD SHAZIB AMIN	200351	6-19-1992	17	3	Asstt. Director	Dir Admn (Officers)	24										
3		SANA FATIMA	200442	11-15-1999	17	3	Asstt. Director	Dir. P&D (Officers)	26										
4		SUMAIRA FTIKHAR	200475	12-25-1988	17	3	Asstt. Director	Dir. P&D (Officers)	27										
5		MURTAZA HASSAN	200986	11-12-1987	17	3	Asstt. Director	Dir Revenue Officers	28										
6		MIAN HAMID LAL	79221	2-19-1987	17	5	S.D.O.	DC-I (Officers)	29										
7		MUZAFFAR ABBAS	79061	2-5-1987	17	5	S.D.O.	DC-I (Officers)	29										
8		ALI ASLAM KHOKHAR	200613	3-25-1986	17	3	Asstt. Director	Dir Admn (Officers)	30										
9		MISS TAJWAR SAEED	200497	2-11-1984	17	3	Asstt. Director	Director P&E (Off)	32										
10		ANJUM RASOOL	76539	12-21-1982	15	8	Sup Comp. Operations	DDR (RAV TOWN)	33										
11		ASIF ALI	75683	2-2-1982	16	10	Senior Accountant	Dir. Finance Officer	34										
12		MUHAMMAD AZHAR MUSHTAQ	76528	12-12-1981	15	8	Sup Comp. Operations	DDR (ALTOWN)	34										
13		SHAZL WAQAR	75581	11-28-1981	17	8	S.D.O.	Dir P&S (Officers)	34										
14		SYED ABID RAZA	75558	8-10-1980	17	8	S.D.O.	Director Drainage	35										
15		RAZ ELAHI WILLIAM	77167	10-9-1986	17	8	S.D.O.	Director P&E (Off)	49										

Activity: Determining Age (Optional Formatting)

9

	A	B	C	D	E	F	G	H	I	J	K	L
2	Name	Emp No	DOB	Grade	Designation	De						
3	MUHAMMAD SHAZIB AMIN	200351	6-19-1992	17	Asstt. Director	Dir Adm						
4	SANA FATIMA	200442	11-15-1999	17	Asstt. Director	Dir. P&D						
5	SUMAIRA FTIKHAR	200475	12-25-1988	17	Asstt. Director	Dir. P&D						
6	MURTAZA HASSAN	200986	11-12-1987	17	Asstt. Director	Dir Rev						
7	MIAN HAMID LAL	79221	2-19-1987	17	S.D.O.	DC-I						
8	MUZAFFAR ABBAS	79061	2-5-1987	17	S.D.O.	DC-I						
9	ALI ASLAM KHOKHAR	200613	3-25-1986	17	Asstt. Director	Dir Adm						
10	MISS TAJWAR SAEED	200497	2-11-1984	17	Asstt. Director	Director						
11	ANJUM RASOOL	76539	12-21-1982	15	Sup Comp. Operations	DDR (I						
12	ASIF ALI	75683	2-2-1982	16	Senior Accountant	Dir. Fir						
13	MUHAMMAD AZHAR MUSHTAQ	76528	12-12-1981	15	Sup Comp. Operations	DDR (A.I.TOWN)	34					
14	SHAZL WAQAR	75581	11-28-1981	17	S.D.O.	Dir P&S (Officers)	34					
15	SYED ABID RAZA	75558	8-10-1980	17	S.D.O.	Director Drainage	36					
16	RAZ ELAHI WILLIAM	77167	10-9-1986	17	S.D.O.	Director P&E (Off)	49					
17	MOHAMMAD YASIN	68031	30-12-60	14	Assistant	CD-II	55					
18	NABEEL AHMED	79631	16-07-84	11	Sub Engineer	CD-II	32					
19	ADNAN AHMED	75809	01-08-75	11	Sub Engineer	CD-IV	41					
20	MUHAMMAD KHALIL	75843	25-04-79	11	Sub Engineer	D.D (Quality Cont.)	37					
21	MUHAMMAD WASEEM AZHAR	75856	01-04-77	11	Sub Engineer	D.D (Quality Cont.)	39					
22	RAZ AHMAD ANSARI	62453	07-11-56	11	Draftsman	D.D DESIGN I	59					
23	ABDUL HAKEEM	61063	11-06-57	16	Staff Officer	DC-I (Officers)	58					
24	MOHAMMAD JAMIL	62351	07-01-58	16	Staff Officer	DC-I (Officers)	58					

Activity: Determining Age (Optional Formatting) 10

The screenshot shows an Excel spreadsheet with the following data:

Name	Emp No	DOB	Grade	Designation	Department	Age
MUHAMMAD SHAZIB AMIN	200351	6-19-1992	17	Asstt. Director	Dir Admn (Officers)	24
SANA FATIMA	200442	11-15-1989	17	Asstt. Director	Dir. P&D (Officers)	26
SUMAIRA IFTIKHAR	200475	12-25-1988	17	Asstt. Director	Dir. P&D (Officers)	27
MURTAZA HASSAN	200986	11-12-1987	17	Asstt. Director	Dir. Revenue Officers	28
MIAN HAMID LAL	79221	2-19-1987	17	S.D.O.	DC-1 (Officers)	29
MUZAFFAR ABBAS	79061	2-5-1987	17	S.D.O.	DC-1 (Officers)	29
ALI ASLAM KHOKHAR	200613	3-25-1986	17	Asstt. Director	Dir Admn (Officers)	30
MISS TAJWAR SAEED	200497	2-11-1984	17	Asstt. Director	Director P&E (Off)	32
ANJUM RASOOL	76539	12-21-1982	15	Sup Comp. Operations	DDR (RAW TOWN)	33
ASIF ALI	75683	2-2-1982	16	Senior Accountant	Dir. Finance Officer	34
MUHAMMAD AZHAR MUSHTAQ	76528	12-12-1981	15	Sup Comp. Operations	DDR (AITOWN)	34
SHAZIL WAQAR	75581	11-28-1981	17	S.D.O.	Dir P&S (Officers)	34
SYED ABID RAZA	75558	8-10-1980	17	S.D.O.	Director Drainage	35
RIAZ ELAHI WILLIAM	77167	10-9-1966	17	S.D.O.	Director P&E (Off)	49
MOHAMMAD YASIN	68031	30-12-20	14	Assistant	CD-II	55
NABEEL AHMED	76931	16-07-84	11	Sub Engineer	CD-II	32
ADNAN AHMED	75809	01-08-75	11	Sub Engineer	CD-III	41
MUHAMMAD KHALIL	75843	25-04-79	11	Sub Engineer	D.D (Quality Cont.)	37
MUHAMMAD WASEEM AZHAR	75865	01-04-77	11	Sub Engineer	D.D (Quality Cont.)	39
RIAZ AHMAD ANSARI	62453	07-11-56	11	Draftsman	D.D DESIGN I	59
ABDUL HAKEEM	61963	11-06-57	16	Staff Officer	DC-1 (Officers)	59
MUHAMMAD JAHLIL	62351	07-01-58	16	Staff Officer	DC-1 (Officers)	58

Activity: Date of Retirement 11

- Enter the following formula

$$=DATE(YEAR(C2)+60,MONTH(C2),DAY(C2))$$
to get the date of retirement

The screenshot shows the same Excel spreadsheet with the following data:

Name	Emp No	DOB	Grade	Service Years	Designation	Department	Age	Date of Retirement
MUHAMMAD SHAZIB AMIN	200351	6-19-1992	17	3	Asstt. Director	Dir Admn (Officers)	24	6-19-2052
SANA FATIMA	200442	11-15-1989	17	3	Asstt. Director	Dir. P&D (Officers)	26	11-15-2049
SUMAIRA IFTIKHAR	200475	12-25-1988	17	3	Asstt. Director	Dir. P&D (Officers)	27	12-25-2048
MURTAZA HASSAN	200986	11-12-1987	17	3	Asstt. Director	Dir. Revenue Officers	28	11-12-2047
MIAN HAMID LAL	79221	2-19-1987	17	5	S.D.O.	DC-1 (Officers)	29	2-19-2047
MUZAFFAR ABBAS	79061	2-5-1987	17	5	S.D.O.	DC-1 (Officers)	29	2-5-2047
ALI ASLAM KHOKHAR	200613	3-25-1986	17	3	Asstt. Director	Dir Admn (Officers)	30	3-25-2046
MISS TAJWAR SAEED	200497	2-11-1984	17	3	Asstt. Director	Director P&E (Off)	32	2-11-2044
ANJUM RASOOL	76539	12-21-1982	15	8	Sup Comp. Operations	DDR (RAW TOWN)	33	12-21-2042
ASIF ALI	75683	2-2-1982	16	10	Senior Accountant	Dir. Finance Officer	34	2-2-2042
MUHAMMAD AZHAR MUSHTAQ	76528	12-12-1981	15	8	Sup Comp. Operations	DDR (AITOWN)	34	12-12-2041
SHAZIL WAQAR	75581	11-28-1981	17	8	S.D.O.	Dir P&S (Officers)	34	11-28-2041
SYED ABID RAZA	75558	8-10-1980	17	8	S.D.O.	Director Drainage	35	8-10-2040
RIAZ ELAHI WILLIAM	77167	10-9-1966	17	8	S.D.O.	Director P&E (Off)	49	10-9-2026

Activity: Days remaining to Retirement

12

- To determine the days before retirement enter formula =DAYS(H2,TODAY()).

Name	Emp No	DOB	Grade	Designation	Department	Age	Date of Retirement	Days Before Retirement
MUHAMMAD SHAZIB AMIN	200351	8-19-1992	17	Asstt. Director	Dir Admn (Officers)	24	6-19-2052	13047
SANA FATIMA	200442	11-15-1989	17	Asstt. Director	Dir P&D (Officers)	26	11-15-2049	12100
SUMARA IFTIKHAR	200475	12-25-1988	17	Asstt. Director	Dir P&D (Officers)	27	12-25-2048	11775
MURTAZA HASSAN	200986	11-12-1987	17	Asstt. Director	Dir Revenue Officers	28	11-12-2047	11366
IMAN HAMID LAL	79221	2-19-1987	17	S.D.O.	DC-I (Officers)	29	2-19-2047	11100
MUZAFFAR ABBAS	79061	2-5-1987	17	S.D.O.	DC-I (Officers)	29	2-5-2047	11096
ALI ASLAM KHOKHAR	200613	3-25-1986	17	Asstt. Director	Dir Admn (Officers)	30	3-25-2046	10769
MISS TAIYAR SAEED	200497	2-11-1984	17	Asstt. Director	Director P&E (Off)	32	2-11-2044	9996
ANJUM RASOOL	76539	12-21-1982	15	Sup. Comp. Operations	DDR (RAVI TOWN)	33	12-21-2042	9579
ASIF ALI	75683	2-2-1982	16	Senior Accountant	Dir. Finance Officer	34	2-2-2042	9257
MUHAMMAD AZHAR MUSHTAQ	76528	12-12-1981	15	Sup. Comp. Operations	DDR (AI TOWN)	34	12-12-2041	9205
SHAZL WAQAR	75581	11-28-1981	17	S.D.O.	Dir P&S (Officers)	34	11-28-2041	9191
SYED ABID RAZA	75558	8-10-1980	17	S.D.O.	Director Drainage	36	8-10-2040	8716
RIAZ ELAHI WILLIAM	77167	10-9-1966	17	S.D.O.	Director P&E (Off)	49	10-9-2026	3662
MOHAMMAD YASIN	68031	30-12-80	14	Assistant	CD-II	55	12-30-2020	1553
NABEEL AHMED	76031	16-07-84	11	Sub Engineer	CD-II	32	7-16-2044	10152
ADNAN AHMED	75809	01-08-75	11	Sub Engineer	CD-IV	41	8-1-2035	6880
MUHAMMAD KHAIL	75843	25-04-79	11	Sub Engineer	D.D (Quality Cont.)	37	4-25-2039	9243
MUHAMMAD WASEEM AZHAR	75805	01-04-77	11	Sub Engineer	D.D (Quality Cont.)	39	4-1-2037	7489
RIAZ AHMAD ANSARI	62453	07-11-56	11	Draftsman	D.D DESIGN I	59	11-7-2016	39
ABDUL HAKEEM	61063	11-06-57	16	Staff Officer	DC-I (Officers)	59	6-11-2017	255

Activity: Years remaining to retirement

13

- Enter the Formula =L2/365 to get the remaining years to retirement

Emp No	DOB	Grade	Service Years	Designation	Department	Age	Date of Retirement	Days Before Retirement	Years to Retirement
200351	8-19-1992	17	3	Asstt. Director	Dir Admn (Officers)	24	6-19-2052	13137	35.99
200442	11-15-1989	17	3	Asstt. Director	Dir P&D (Officers)	26	11-15-2049	12190	33.40
200475	12-25-1988	17	3	Asstt. Director	Dir P&D (Officers)	27	12-25-2048	11865	32.51
200986	11-12-1987	17	3	Asstt. Director	Dir Revenue Officers	28	11-12-2047	11456	31.39
79221	2-19-1987	17	5	S.D.O.	DC-I (Officers)	29	2-19-2047	11190	30.66
79061	2-5-1987	17	5	S.D.O.	DC-I (Officers)	29	2-5-2047	11176	30.62
200613	3-25-1986	17	3	Asstt. Director	Dir Admn (Officers)	30	3-25-2046	10859	29.75
200497	2-11-1984	17	3	Asstt. Director	Director P&E (Off)	32	2-11-2044	10086	27.63
76539	12-21-1982	15	8	Sup. Comp. Operations	DDR (RAVI TOWN)	33	12-21-2042	9669	26.49
75683	2-2-1982	16	10	Senior Accountant	Dir. Finance Officer	34	2-2-2042	9347	25.61
76528	12-12-1981	15	8	Sup. Comp. Operations	DDR (AI TOWN)	34	12-12-2041	9295	25.47
75581	11-28-1981	17	8	S.D.O.	Dir P&S (Officers)	34	11-28-2041	9281	25.43
75558	8-10-1980	17	8	S.D.O.	Director Drainage	35	8-10-2040	8906	24.13
77167	10-9-1966	17	8	S.D.O.	Director P&E (Off)	49	10-9-2026	3752	10.28

Activity: Retirement Status

14

- Enter the Formula in next column
`=IF(I2<0,"Error",IF(I2<365,"Less than an year",IF(I2>365,IF(I2<730,"Between 1 & 2 years",IF(I2>730,"More than 2 years"),"One year"))))`

Name	Emp No	DOB	Grade	Designation	Department	Age	Date of Retirement	Days Before Retirement	Retirement Status
MUHAMMAD SHAZIB AMIN	200351	6-19-1992	17	Asstt. Director	Dir Admn (Officers)	24	6-19-2052	12931	More than 2 years
SANA FATMA	200442	11-15-1989	17	Asstt. Director	Dir. P&D (Officers)	27	11-15-2049	11984	More than 2 years
SUMAIRA FTIKHAR	200475	12-25-1988	17	Asstt. Director	Dir. P&D (Officers)	28	12-25-2048	11659	More than 2 years
MURTAZA HASSAN	200886	11-12-1987	17	Asstt. Director	Dir Revenue Officers	29	11-12-2047	11250	More than 2 years
MIAN HAMID LAL	79221	2-19-1987	17	S.D.O.	DC-I (Officers)	29	2-19-2047	10984	More than 2 years
MUZAFFAR ABBAS	79061	2-5-1987	17	S.D.O.	DC-I (Officers)	29	2-5-2047	10970	More than 2 years
ALI ASLAM KHOKHAR	200613	3-25-1986	17	Asstt. Director	Dir Admn (Officers)	30	3-25-2046	10653	More than 2 years
MISS TALWAR SAEED	200497	2-11-1984	17	Asstt. Director	Director P&E (Off)	32	2-11-2044	9880	More than 2 years
ANJUM RASOOL	76539	12-21-1982	15	Sup. Comp. Operations	DDR (RAVI TOWN)	34	12-21-2042	9463	More than 2 years
ASIF ALI	75683	2-2-1982	16	Senior Accountant	Dir. Finance Officer	34	2-2-2042	9141	More than 2 years
MUHAMMAD AZHAR MUSHTAQ	76528	12-12-1981	15	Sup. Comp. Operations	DDR (A1 TOWN)	35	12-12-2041	9089	More than 2 years
SHAZL WAZIR	75581	11-28-1981	17	S.D.O.	Dir P&S (Officers)	35	11-28-2041	9075	More than 2 years
SYED ABID RAZA	75558	8-10-1980	17	S.D.O.	Director Drainage	36	8-10-2040	8600	More than 2 years
RAZ ELAHI WILLIAM	77187	10-9-1988	17	S.D.O.	Director P&E (Off)	50	10-9-2026	3546	More than 2 years
MUHAMMAD YASIN	68031	30-12-60	14	Assistant	CD-II	59	12-30-2020	1437	More than 2 years
HABEEL AHMED	76631	10-07-84	11	Sub Engineer	CD-II	32	7-10-2044	10036	More than 2 years
ADNAN AHMED	75809	01-08-75	11	Sub Engineer	CD-VI	41	8-1-2035	6764	More than 2 years
MUHAMMAD KHALL	75843	25-04-79	11	Sub Engineer	D.D (Quality Cont.)	37	4-25-2039	8127	More than 2 years
MUHAMMAD WASEEM AZHAR	75865	01-04-77	11	Sub Engineer	D.D (Quality Cont.)	38	4-1-2037	7373	More than 2 years
RAZ AHMAD INSARI	62453	07-11-59	11	Draftsman	D.D (DESIGN)	68	11-7-2016	77	Error
ABDUL HAKEEM	61083	11-06-57	16	Staff Officer	DC-I (Officers)	59	6-11-2017	139	Less than an year

Activity: Age Range

15

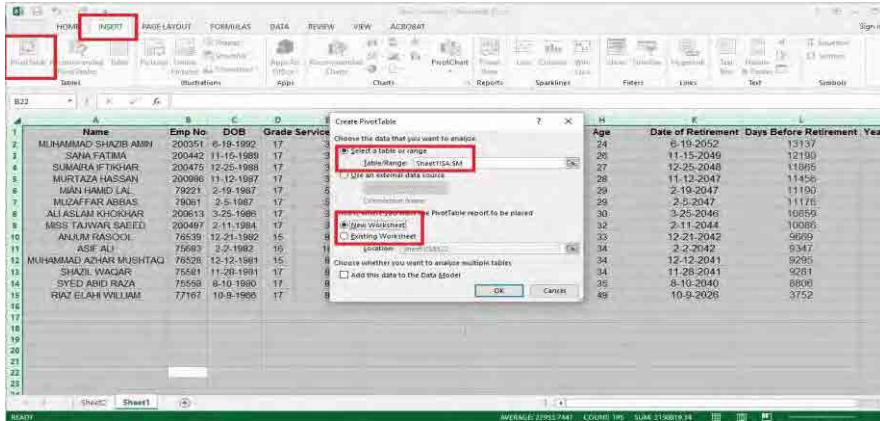
- Enter the Formula
`=IF(G2<30,"<30",IF(G2<40,"30-39",IF(G2<50,"40-49",IF(G2<60,"50-59", ">60"))))`

Emp No	DOB	Grade	Designation	Department	Age	Date of Retirement	Days Before Retirement	Retirement Status	Age Range
200351	6-19-1992	17	Asstt. Director	Dir Admn (Officers)	24	6-19-2052	12931	More than 2 years	<30
200442	11-15-1989	17	Asstt. Director	Dir. P&D (Officers)	27	11-15-2049	11984	More than 2 years	<30
200475	12-25-1988	17	Asstt. Director	Dir. P&D (Officers)	28	12-25-2048	11659	More than 2 years	<30
200886	11-12-1987	17	Asstt. Director	Dir Revenue Officers	29	11-12-2047	11250	More than 2 years	<30
79221	2-19-1987	17	S.D.O.	DC-I (Officers)	29	2-19-2047	10984	More than 2 years	<30
79061	2-5-1987	17	S.D.O.	DC-I (Officers)	29	2-5-2047	10970	More than 2 years	<30
200613	3-25-1986	17	Asstt. Director	Dir Admn (Officers)	30	3-25-2046	10653	More than 2 years	30-39
200497	2-11-1984	17	Asstt. Director	Director P&E (Off)	32	2-11-2044	9880	More than 2 years	30-39
76539	12-21-1982	15	Sup. Comp. Operations	DDR (RAVI TOWN)	34	12-21-2042	9463	More than 2 years	30-39
75683	2-2-1982	16	Senior Accountant	Dir. Finance Officer	34	2-2-2042	9141	More than 2 years	30-39
76528	12-12-1981	15	Sup. Comp. Operations	DDR (A1 TOWN)	35	12-12-2041	9089	More than 2 years	30-39
75581	11-28-1981	17	S.D.O.	Dir P&S (Officers)	35	11-28-2041	9075	More than 2 years	30-39

Activity. Using pivot table for reporting

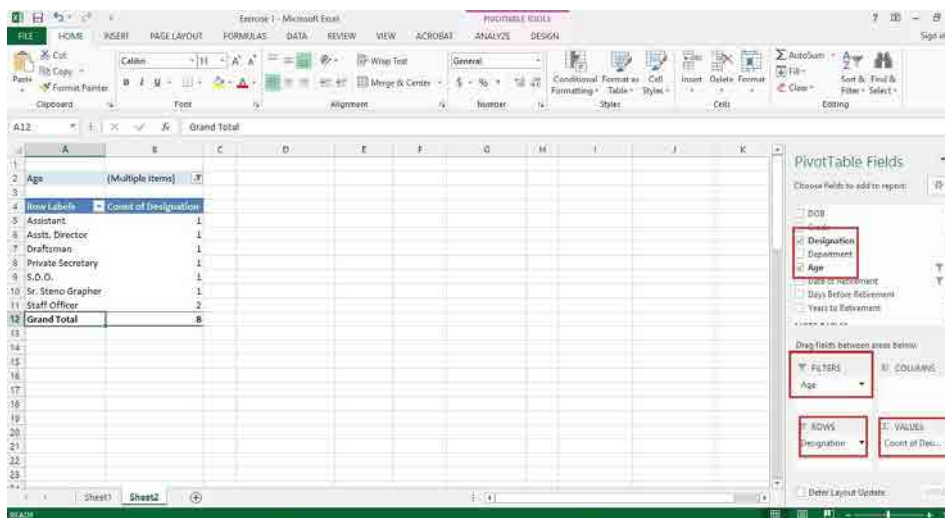
16

Press Ctrl+A. Select "Insert Tab" Click Pivot table and then press OK. Values should be left as default. A new sheet will open



Activity. Using pivot table for reporting

17



Activity: Grade wise Retirement Status Analysis using PivotTable

18

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1																				
2																				
3																				
4		Count of pname	Column Labels																	
13	# 2016	2	24	3	5	13	6	8	2	4	2	4	5	9	2	1				90
14	# 2017	1	32	9	16	6	8	7	4	5	7	7	7	1	2					112
15	# 2018	1	44	4	13	8	5	6	4	2	6	3	5	2	1					104
16	# 2019	2	56	13	13	14	5	8	8	3	4	7	3	2	3					141
17	# 2020	4	81	3	16	12	6	6	5	2	2	10	4	1						152
18	# 2021	3	47	7	16	8	5	21	7	2	8	4	5	2						135
19	# 2022	5	82	8	19	10	1	24	6	1	5	1	3	3	3					171
20	# 2023	6	68	5	20	15	5	14	4		1	2	2	1	1					144
21	# 2024	2	74	12	29	8	3	10	7		1	1	1	3	1					152
22	# 2025	6	82	3	33	13	6	14	3		1	5	1	3	2					173
23	# 2026	5	59	21	24	14	2	13	8		2		3	1						152
24	# 2027	3	104	26	22	5	22	11			2	1	2	1	1					222
25	# 2028	7	88	29	31	17	2	7	1		2		1	2						195
26	# 2029	7	83	48	27	11		11	8		3	4		2						204
27	# 2030	15	118	52	15	25	4	9	1		1	2	1							244
28	# 2031	7	83	46	12	11		10			1	2		1						173
29	# 2032	8	84	44	5	12	2	2			1	1								159
30	# 2033	8	72	52	4	13		5			3	3	1							161
31	# 2034	14	82	34	2	11	1	6			3									154
32	# 2035	10	73	28	3	7		1			8	2								133
33	# 2036	10	98	43	3	13		5			2	1								175
34	# 2037	22	93	25	4	15		2			1	2								164
35	# 2038	22	88	26	5	8		5			3	1		1	1					160
36	# 2039	26	72	19	2	14		3			2	2		1		1				142
37	# 2040	34	90	12	1	8		2			3		1	1	1					150
38	# 2041	29	47	7	1	7		4			3		1	1	1					101
39	# 2042	36	38	2		9		5			1	2	1	1						95
40	# 2043	37	45			6		1			2	2								100
41	# 2044	24	47	1		4		6			3	1			1					87
42	# 2045	24	30	1		6		9												70

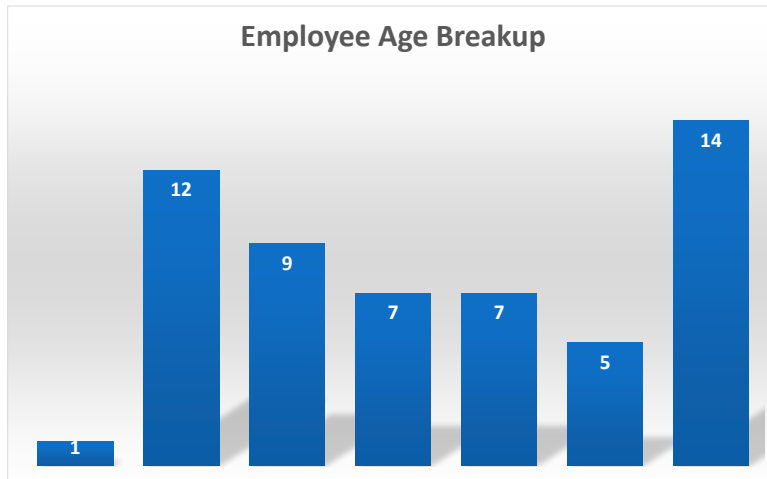
Exercise: Age Range and Data Formation

19

- Please find age groups of employees in given data and perform analysis
 - >60
 - 56-60
 - 51-55
 - 46-50
 - 41-45
 - 36-40
 - <36
- Please arrange in form of table. Select and Click Recommended Charts

Data based information

19



47



Thank You

Questionnaire on Training Need

Assessment

Project on improvement of WASAs in Punjab

Please complete this questionnaire and return it. The objectives of this questionnaire are as follows:

- i) To identify your major job roles and responsibilities and relevant knowledge, skills and attitudes to perform role effectively.
- ii) To propose relevant training plan.
- iii) To offer suitable practical learning methods.

SECTION I

1. PERSONAL INFORMATION-

Name: _____

Date of Birth: _____

HIGHEST ACADEMIC QUALIFICATION OBTAINED (institute, year of graduation, major/title)			
Degree/ Diploma	Year	Major Subject	Institution

2. PREVIOUSLY ATTENDED TRAININGS

Have you attended any training course? If yes, please provide brief information.

Sr. No	Training Title	Training Provider/Organization	Duration
1			
2			
3			
4			

5			
---	--	--	--

SECTION II

3. JOB DESCRIPTION

<u>Present Position/ Title:</u>	
<u>Department:</u>	
<u>Years of Working at WASA:</u>	
<u>Years of working at the present position:</u>	
<u>Number of staff members that you supervise, if any:</u>	

ACTIVITY NO.1

4. ROLE ANALYSIS

Please list down your day to day duties, roles and responsibilities at relevant WASA Offices.

Sr. No.	Principal Duties and Responsibilities
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

ACTIVITY NO.2

5. GAP ANALYSIS

1. Kindly list down **Knowledge, Skills and Attitude (KSA)** required to perform your duties and responsibilities identified in the previous section. (5 of each)
2. Second rate your competence level against KSA. Please tick (✓) the appropriate box

Sr. No	KSA Area	How would you rate your competence?				
		Excellent	Good	Satisfactory	Poor	Very Poor
1	<u>KNOWLEDGE</u>					
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						
i.						
j.						
k.						
l.						
m.						
2	<u>SKILLS</u>					
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						
i.						
j.						
3	<u>ATTITUDE</u>					
a.						
b.						
c.						

d.						
e.						

ACTIVITY NO.3

6. TRAINING REQUIREMENT & PRIORITIZATION

1. Please list down relevant training areas to develop KSAs that you have already mentioned in gap analysis in section II.
2. Assign training level '1-3' (1= Basic, 2= Intermediate, 3= Advanced) to the identified trainings
3. Prioritize trainings you have identified from P1 – P3 (Priority 1 = P1, Priority 2 = P2, Priority 3 = P3). The **prioritization** will help to develop training plan

Sr. No	Training Title	Training Level			Training Prioritization		
		Basic	Intermediate	Advanced	P1	P2	P3
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

ACTIVITY NO.4

7. TRAINING DELIVERY OPTIONS

Please evaluate the appropriateness of the following training delivery options (Consider work related factors like timings, locations etc.)

Sr. No	Training Delivery Option	Induction			Regular Trainings		
		Very Useful	Moderately Useful	Not Useful	Very Useful	Moderately Useful	Not Useful
1.0	On- the-job techniques						
1.1	Demonstration						
1.2	Coaching						
1.3	Mentoring						
1.4	Job Rotation/Planned Experience						
2.0	On-the-job or off-the-job techniques						
2.1	Assignments						
2.2	Projects						
3.0	Off-the-job techniques						
3.1	Lecture						
3.2	Workshops						
3.3	Group Exercises						
3.4	Case Study						
3.5	Role-Playing						
3.6	E-Learning						
3.7	Outdoor Learning						

ACTIVITY NO.5

8. NEEDS OF TRAINING

Which of the following courses do you want to learn? Please tick all that apply.

- Leakage Detection and Repair
- O&M of Tube Well and Pump Facility
- O&M of Sewerage and Storm Water Drainage
- O&M of Electrical Equipment
- O&M of Mechanical Equipment
- Asset Management
- Business Planning

Is there any work-related skill you want to enhance to perform better at work?

- Yes No
- If NO, STOP
- If YES, Please tick things you want to learn
- Computer skills
- Office management (filing system, Information technology)
- Project Management
- Planning and Budgeting
- Monitoring and Evaluation
- Human Resource Management

Others: Please identify any other skills that you would like to acquire:



Public Communication Plan

Memoona Arslan Bhatti
Communication Specialist

February 10, 2017



Public Communication Plan – Overview

- Urban Unit has developed this communication plan with an objective to develop and implement a communication strategy for water and sewerage issues while ensuring that we, along with our program partners, spearhead a relentless awareness campaign.
- The proposed vigorous campaigns, fast track dissemination of information as guided by this plan will benefit residents of targeted cities.





Significance of Communication Plan

- Development of harmonized document in order to put in place a comprehensive and accurate referral document providing guidelines which are globally accredited vital for realizing public communication objective of any urban development project.
- Guidelines and key communication specifics, along with the actual activities that will be expected to define the project's annual calendar.



Effective Communication Strategy

- Ensure the most efficient and effective utilization of resources through a process of prioritization and rationalization
- Provide practice guidelines and clear direction for daily activities
- Identify the drivers of change as well as the best means to engage with them
- Ensure predictability and continuity, while enabling a continuous review of current organizational activities and indicative milestones against which we will measure success.



Elements of Effective Communication Strategy

- Policy Objectives
- Key Audiences of the Plan
- Communication Plan for WASAs
- Specific Approaches



Policy Objectives

- Audiences & their Profiles
- Key Messages
- Channels, Tools and Activities
- Communication's Budget
- Monitoring & Evaluation



Key Audiences of the Plan

Different audiences can be divided into three categories:

- Internal audiences
- External audiences
- Media

All channels of communication and messages have to be tailored accordingly to suit each of these.



Communication Plan for WASAs

Objectives of the Strategy

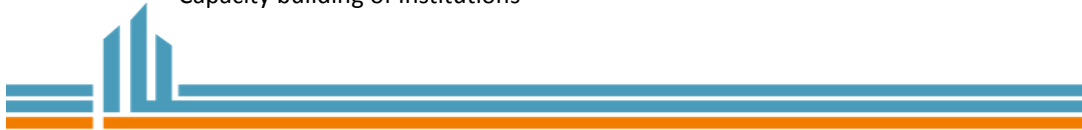
- To increase awareness, improve knowledge standards and build support for key stakeholders
- To promote positive water and sanitation management practices among all key stakeholders
- To create demand for use of the improved services





Specific Approaches

- Internal communication
- Public participation mechanisms
- multi-media communication program
- Media advocacy
- Capacity building of Institutions



Internal Communication

- Team briefing system
- Interaction facilitation with staff to address sensitive issues regarding job, organizational changes etc.
- Special events arrangement for staff
- A quarterly internal newsletter production
- Star of the Month to be announced and celebrated
- Frequent internal meetings
- Briefing documents



Internal Communication

- Consultations sessions
- Use of circular communication process with an emphasis on feedback
- Management debriefing meetings once a month
- Celebrate major accomplishments
- Ensure wide spread availability of information through notices, e-mail communication; newsletter, website and all other channels for purposes of general information
- Provide proper orientation to all new/ incoming staff
- Publish materials including books (if required), reports and various IEC materials of interest to the WASAs and their various stakeholders
- Timely and clear communication to staff



Establishing Public Participation Mechanisms

- Opinion leaders
- Consultation forums
- Establishing WSS forums and celebration of relevant events and days
- Corner meetings with community representatives
- Community-led public participation activities like small gatherings, mini seminars and public speech forums



Media-Communication Program

- Proactive promotion of positive information and campaigns in media
- Develop and maintain good relationships with media
- Participate in radio and TV talk shows
- Organize for press conferences to profile WASAs activities
- Make relevant information timely and newsworthy at all times
- Arrange to write quality write-ups for leading newspapers about reforms in WASAs
- Thematic media campaigns for information of communities
- A multi-media campaign delivered utilizing both paid-for advertisements, earned media and interpersonal channels
- Advertorials and adverts in the print media
- TV and Radio infomercials
- Documentary
- Information materials – posters, brochures
- News and feature articles in both print and electronic media



Media Advocacy

- Build on positive coverage to build the right media content and treatment
- To influence the nature of coverage
- Media training workshops at the national and city levels
- Implementation of advocacy approaches to build support among all
- Confidence building exercises in collaboration with involved partners/departments
- Tailored communication keeping in view the specific needs of each target group
- Jumping onto all possible relevant activities held by other departments/NGOs etc.

Tools for Sector Specific Communication

- Briefing materials
- Seminars and workshops
- Organizational meetings
- Articles in sector publications
- Quarterly progress Newsletters

Branding and Identity

- The agreed logo shall be promoted.
- The brand identity will be projected in all its documents, including, its various types of correspondence, PowerPoint presentations, and advertisements and /or any other form of publicity.



Monitoring and Evaluation

- Close monitoring of media coverage in both print and electronic media
- Stakeholder satisfaction and awareness survey, undertaken during every phase of implementation
- Staff knowledge and satisfaction assessment
- Range, quality and depth of communication products produced for different audience segments
- Delivery of measurable improvements in the quantity of communications delivered through the website and staff intranet
- Increased brand recognition WASAs at local, national, regional and international level
- Delivery of best value communication service, and
- Stronger partnerships and networks established with different institutions other stakeholders and organized groups

Evaluation Indicators

- Number of clips appearing in the newspapers
- TV clips
- Number of appearances and or references in websites and blogs
- Tone of articles, size and prominence
- Number of stakeholder engagement meetings held
- Number of workshops held
- Number of participants



Conclusion

The matrix integrates all aspects of the strategy indicating the logical link between the audience, key message themes, methodology, channels and tools, expected outcomes and implementing partners. Key message themes are based on the objective for communication for each audience and the findings from the assessment. The strategy matches audiences with specific channels depending on the appropriateness of the channel to the specific audience. The approaches combine mass media, community-level activity and interpersonal communication - all linked to specific outcomes.





In the name of Allah, the Beneficent, the Merciful بسم الله الرحمن الرحيم

1

MODULE - 2

Business Planning & GAP Analysis

COLLECTION EFFICIENCY & OPERATIONAL DEFICIT (with Simulation Exercises)

Mr Asif Iqbal

Financial Management Specialist



In the name of Allah, the Beneficent, the Merciful بسم الله الرحمن الرحيم

2

MODULE - 1

Business Planning & GAP Analysis

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT (PART - I)

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 3

LEARNING OUTCOMES:

Use of MS EXCEL in:

LO1: Detailed understanding of WASA budget and its components including the concepts of operational and normal deficit

LO2: Introduction to collection efficiency and the related exercises in module 4

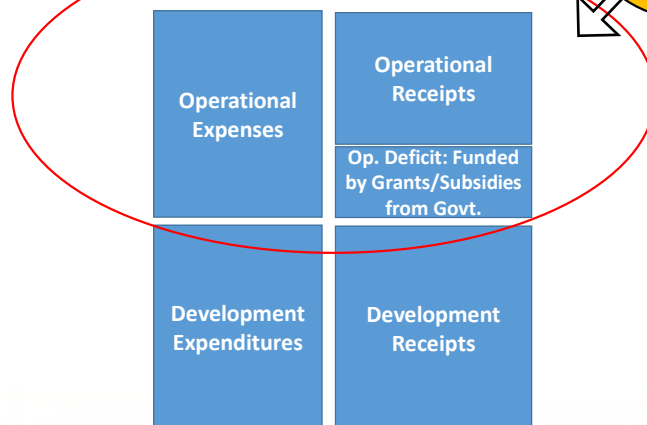
LO3: Computation of **total operational receipts** and **total operational expenses**

LO4: Using **pie charts** to perform **figurative analysis** of sources to finance operational expenses over a period of three years.

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 4

WASA Budgetary Structure

WASA Operations



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 5

WASA Budgetary Structure

Dissecting the Operations' Aspect

Receipt Side

Operational Receipts = [Water & Sewerage Charges] + [Urban Immovable Property Tax (UIPT)] + [Other Receipts]

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 6

WASA Budgetary Structure

Dissecting the Operations' Aspect

Expense Side

Operational Expenses = [Salary & Payroll] + [Power & Energy] + [O & M] + [Petroleum expenses] + [Other operational expenses]

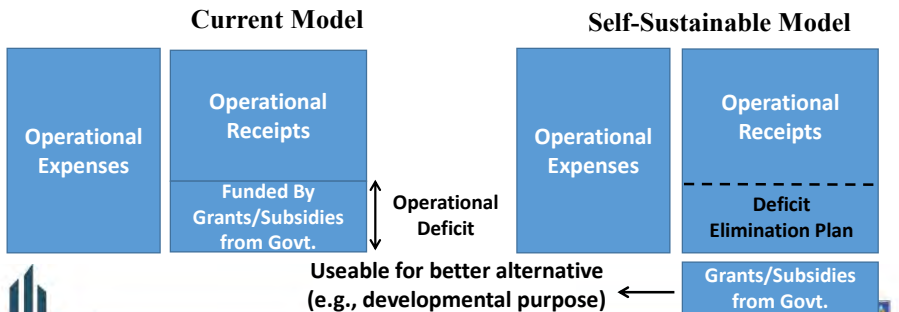
BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 7

What is Operational Deficit (OD) and Working Ratio (WR)?

$$\text{Operational Deficit (OD)} = [\text{Operational Expenses}] - [\text{Operational Receipts}]$$

VS.

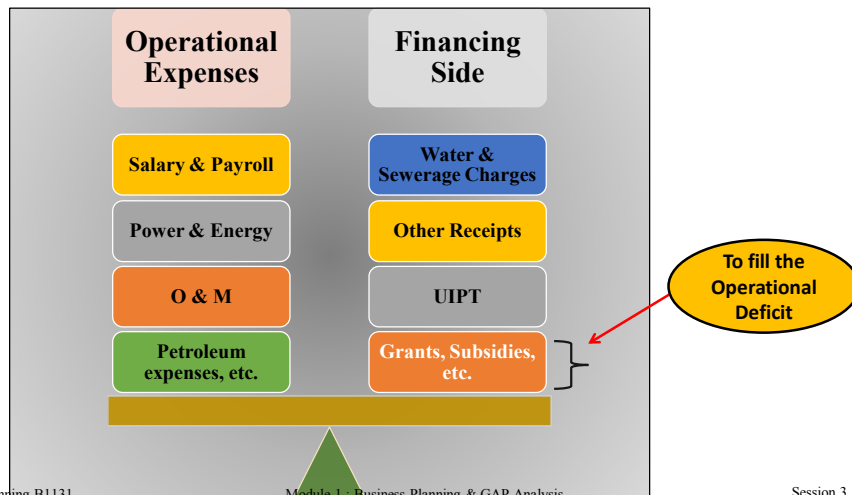
$$\text{Working Ratio (WR)} = [\text{Operational Expenses}] / [\text{Operational Receipts}]$$



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 8

Current Situation Equation

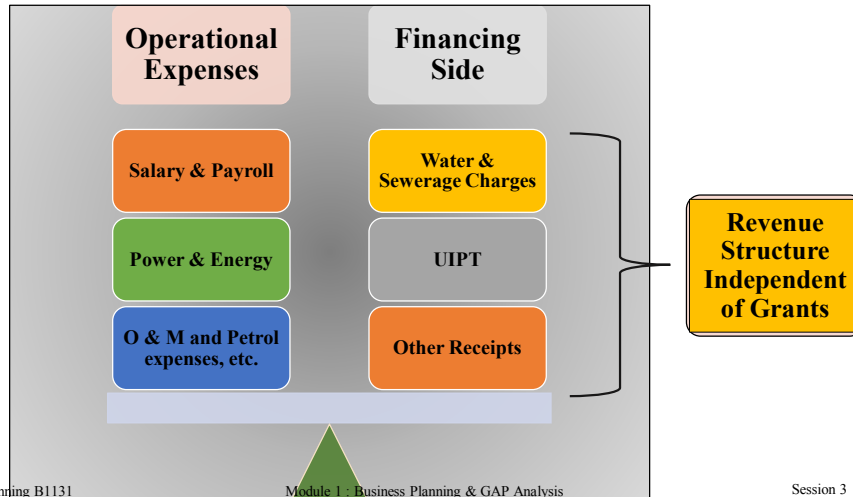
$$[\text{Total Operational Expenses}] = [\text{Water \& Sewerage Charges}] + [\text{UIPT}] + [\text{Other Receipts}] + [\text{Grants, Subsidies, etc.}]$$



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 9

Golden Equation:

$$[\text{Total Operational Expenses}] = [\text{Water \& Sewerage Charges}] + [\text{UIPT}] + [\text{Other Receipts}]$$



10

MODULE - 1

Business Planning & GAP Analysis

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT

(SIMULATION EXERCISE)

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 11

Computation of total operational receipts and total operational expenses

- Caption the row below the row titled “Other receipts” as “Total Operational Receipts” as shown below.

1. Caption
“Total
Operational
Receipts”

Operational Receipts			
	2014-15	2015-16	2016-17
	Rs. in (million)		
Water and Sewerage Charges (Including Recovery of Arrears)	2,135	2,530	3,182
UIP Tax Share	990	1,182	1,234
Other receipts	170	182	195
Total Operational Receipts			

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 12

Computation of total operational receipts and total operational expenses

- Make it **bold** – Shortcut key, “Ctrl +B”
- Right indent the text by 2 spaces to make the caption prominent. Use the following button:

2. Format the caption “Total Operational Receipts” -



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 13

Computation of total operational receipts and total operational expenses

Formatted tabular layout

		2014-15	2015-16	2016-17
11				
12		Rs. in (million)		
13				
14	Water and Sewerage Charges	2,135	2,530	3,182
15	UIP Tax Share	990	1,182	1,234
16	Other receipts	170	182	195
17	Total Operational Receipts			
18				

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 14

Computation of total operational receipts and total operational expenses

- For calculating total operating receipts for 2014-15, use the **SUM()** function as follows:

	2014-15	2015-16	
			Rs. in (m)
Water and Sewerage Charges (2,135		
UIP Tax Share	990		
Other receipts	170		
Total Operational Receipts	=sum(D9:D11)		3R x 1F

Hint for usage: Within the function, use navigation keys after typing “=sum(“ and closing brackets “)” and press “Enter”

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 15

Computation of total operational receipts and total operational expenses

For calculating total operational receipts for remaining years, *drag the cell, from bottom right cell holder, containing the formula to the adjacent cells* to copy the formula. The output is shown below:

	2014-15	2015-16	2016-17	
	Rs. in (million)			
14	Water and Sewerage Charges	2,135	2,530	3,182
15	UIP Tax Share	990	1,182	1,234
16	Other receipts	170	182	195
17	Total Operational Receipts	3,295	3,894	4,611

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 16

B-11: INDIVIDUAL ACTIVITY

Repeat the steps to compute total operational expenses for each year.

(Time Available: 5 minutes)

DESIRED OUTPUT

	2014-15	2015-16	2016-17	
	Rs. in (million)			
25	Power & Energy	2,553	3,189	2,946
26	Payroll, Pension & Benefits	2,545	2,345	2,986
27	Repair and Maintenance/O&M	992	1,200	970
28	Utilization of PCGIP funds	469	490	623
29	Petroleum (POL)	412	270	384
30	Other expenses	211	151	474
31	Total Operational Expenses	7,182	7,645	8,383

Note: Save the computations performed till now as it would be useful in achieving learning outcome 3. Shortcut Key – “Ctrl + S”

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 17

Step1: Preparation of tabular format to create pie chart

- Name three continuous columns with the years for which the data is available. Apply “**bold**” format and add borders.

Following output shall appear.

2014-15	2015-16	2016-17
---------	---------	---------

- Label the rows in the column left to the column labeled 2014-15 with “**Water and Sewerage Charges**”, “**UIP Tax Share**”, “**Other receipts**”, “**Operational Deficit**” and “**Total Operational Expenses**”. Following is the desired output.

	2014-15	2015-16	2016-17
<i>Water and Sewerage Charges</i>			
<i>UIP Tax Share</i>			
<i>Other receipts</i>			
<i>Operational Deficit</i>			
<i>Total Operational Expenses</i>			

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 18

Step2: Filling the table

- Use the value already computed for “**Operational Expenses**”
- Use the value already available for “**Water and Sewerage Charges**”, “**UIP Tax Share**” and “**Other receipts**” for each year. Use ‘=’ in the cell in which the value of some other cell is to be

inserted and give the source cell address using **navigation keys**. Refer to an example on the right.

		2014-15	2015-16	2016-17
		Rs. in (million)		
25	Power & Energy	2,553	3,189	
26	Payroll, Pension & Benefits	2,545	2,345	
27	Repair and Maintenance/O&M	992	1,200	
28	Utilization of PGP funds	469	490	
29	Petroleum (PDL)	412	270	
30	Other expenses	211	151	
31	Total Operational Expenses	7,182	7,645	
38		2014-15	2015-16	2016-17
39	<i>Water and Sewerage Charges</i>	2,375	2,530	3,182
40	<i>UIP Tax Share</i>	992	1,182	1,234
41	<i>Other receipts</i>	170	182	195
42	<i>Operational Deficit</i>			
43	<i>Total Operational Expenses</i>			

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 19

Step2: Filling the table (Cont'd)

- Copy formulae to adjacent cells of remaining years. Desired output is:

	2014-15	2015-16	2016-17
<i>Water and Sewerage Charges</i>	2,135	2,530	3,182
<i>UIP Tax Share</i>	990	1,182	1,234
<i>Other receipts</i>	170	182	195
Operational Deficit			
Total Operational Expenses	7,182	7,645	8,383

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 20

Step2: Filling the table (Cont'd)

- Use current situation equation to compute the operational deficit. In 2014-15, subtract all receipt items from operational expenses as demonstrated below:

	2014-15	2015-16	2016-17
<i>Water and Sewerage Charges</i>	2,135	2,530	3,182
<i>UIP Tax Share</i>	990	1,182	1,234
<i>Other receipts</i>	170	182	195
Operational Deficit	=D43-D39-D40-D41		
Total Operational Expenses	7,182	7,645	8,383

- Copy formulae to adjacent cells. Desired output is:

	2014-15	2015-16	2016-17
<i>Water and Sewerage Charges</i>	2,135	2,530	3,182
<i>UIP Tax Share</i>	990	1,182	1,234
<i>Other receipts</i>	170	182	195
Operational Deficit	3,887	3,751	3,773
Total Operational Expenses	7,182	7,645	8,383

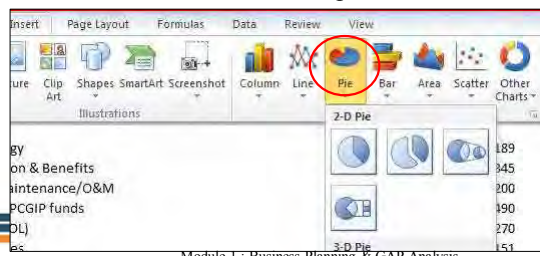
BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 21

Step3: Creating the Pie Chart

- Select the entire table excluding the columns for 2015-16 and 2016-17 and the row representing **operational expenses** as shown below:

	2014-15	2015-16	2016-17
Water and Sewerage Charges	2,135	2,530	3,182
UIP Tax Share	990	1,182	1,234
Other receipts	170	182	195
Operational Deficit	3,887	3,751	3,773
Total Operational Expenses	7,182	7,645	8,383

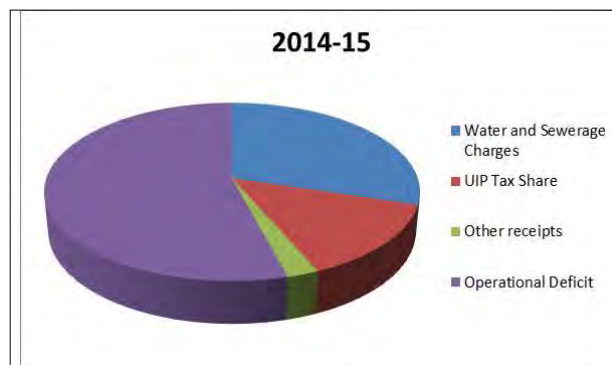
- In the “Insert” tab, click “Pie” in the section titled, “Charts”. Click the first pie chart type in the 3-D section to create a 3-D pie chart as shown below.



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 22

Step3: Creating the Pie Chart

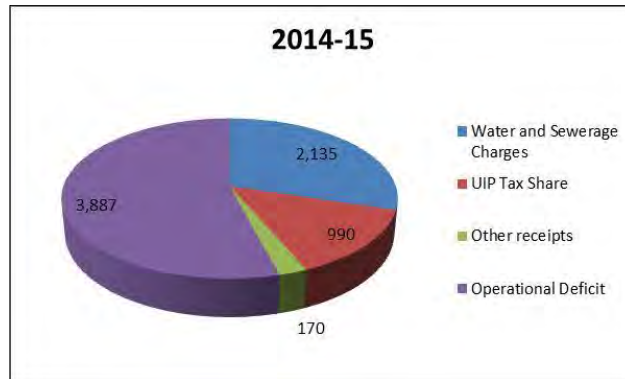
Resulting graph for year 2014-15 would be as follows.



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 23

Step 4: Managing the chart style/data/format

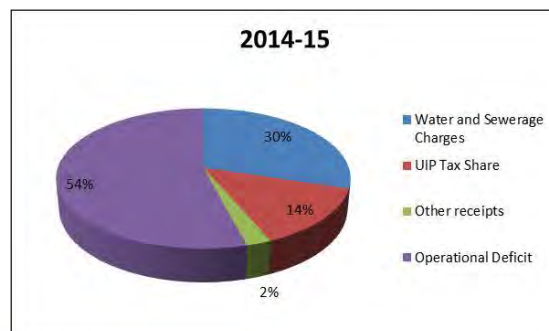
- “Data Labels” can be added – Right click pie chart – Select “Add Data Labels”. Following output would be produced.



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 24

Step 4: Managing the chart style/data/format (Cont'd)

- To convert data labels in percentage terms, Right click pie chart – Select “Format Data Labels”. Tick the option of “Percentage” and un-tick the option of “Values”. Following chart shall be generated.
- This chart shows each component as a percentage of total operational expenses.



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 25

B-12: INDIVIDUAL ACTIVITY

Repeat the steps to **prepare separate pie chart graphs for years 2015-16 and 2016-17.**

Note: Add data labels in percentage to the pie charts.

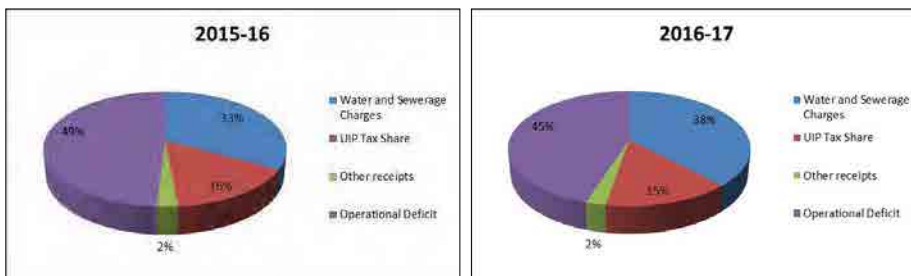
(Time Available: 15 minutes)

Hint: For selection of differently located contiguous cells, combination of mouse and keyboard would be required.
Usage of **“Ctrl” button** and **“left click”**

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 26

INDIVIDUAL ACTIVITY

DESIRED OUTPUT FOR 2 YEARS



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 27

B-15: GROUP EXERCISE

GIVEN

1. Total Operational Receipts
2. Total Operational Expenses
3. Operational Deficit (Rs.)
4. Operational Deficit (as %age of total operational expenses)
5. Pie charts portraying percentage source of financing for operating expenses over a period of 3 years.

GROUPS FORMATION

Four (4) Groups will be formed
Each Group will represent their respective Utility preferably

REQUIRED

1. Enumerate possible reasons for operational deficit (**reasons for GAPS** between operational receipts and operational expenses).
2. Perform **Target Setting** for **Operational Deficit** (as %age of total operational expenses) for the next 3 years.
3. Perform **Target Setting** for **Working Ratio** for the next 3 years.

(Time Available: 30 minutes)

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 28

GROUP EXERCISE FORMAT: Reasons for GAP

Sr. No.	Reasons For Operational Deficit	Priority			
		Critical	High	Medium	Low
1					
2					
3					
4					
5					
6					
7					
8					

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 29

GROUP EXERCISE FORMAT: Target Setting

Indicator	Unit	Current Status	Target		
			2017-18	2018-19	2019-20
Operational deficit	(% of Operational Expenditures)				
Working Ratio	Ratio				

Note: Insert these workings in business plan format (Annex-E)

31

MODULE - 1

Business Planning & GAP Analysis



In the name of Allah, the Beneficent, the Merciful بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

COLLECTION EFFICIENCY (PART - 2)

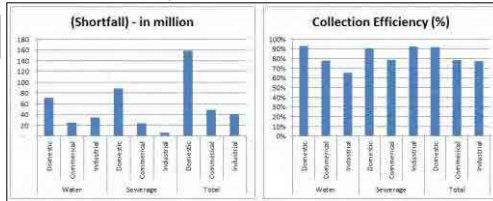
COLLECTION EFFICIENCY ASSESSMENT

32

LEARNING OUTCOMES

Use of MS EXCEL in calculating the Collection Shortfall (Rs.) and Collection Efficiency (%) and preparation of charts

3. Creation of graphs for analysis



2. Determination of Shortfall & Collection Efficiency

	Water			Sewerage			Total		
	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial
(Shortfall) - in million	71	24	34	88	24	7	159	48	41
Collection Efficiency (%)	93%	78%	65%	90%	79%	92%	92%	78%	77%

1. Detail of Bills Issued & Collected – Source Data

	Water			Sewerage			Total		
	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial
Amount of Bills Issued (Rs. in million)	551	112	98	923	110	82	1,874	222	180
Amount of Bills Collected (Rs. in million)	880	88	64	835	86	75	1,715	174	139

COLLECTION EFFICIENCY ASSESSMENT

33

Terminologies

- Bills Issued
- Bills Collected
- Collection Shortfall (Rs./No.)
- Collection Efficiency (%)

Pedagogical Approach (Module 4)

1. Detail of Bills Issued & Collected – Source Data
2. Determination of Shortfall (Rs./No.) & Collection Efficiency (%) - Calculations
3. Creation of graphs for analysis – Graphical Analysis



In the name of Allah, the Beneficent, the Merciful بسم الله الرحمن الرحيم

MODULE - 1

Business Planning & GAP Analysis

COLLECTION EFFICIENCY ASSESSMENT (SIMULATION EXERCISE)

COLLECTION EFFICIENCY ASSESSMENT

Step1: Create a new row for calculating Shortfall in Rupees with repeated column headers

Note: Amount of bills received (Rs.) does not include the receipt of arrears

- Copy and paste the column headers of the existing data on two rows below the existing data space.

	Water			Sewerage			Total		
	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial
Amount of Bills Issued (Rs. in million)	921	112	96	923	110	82	1,874	222	190
Amount of Bills Collected (Rs. in million)	880	88	64	835	86	75	1,715	174	139

- Give the caption of “Shortfall” to the cell near the pasted column headers as shown below.

	Water			Sewerage			Total		
	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial
(Shortfall) - in million									

COLLECTION EFFICIENCY ASSESSMENT

36

Step 2: Calculation of Collection Shortfall (Rs.)

Under each consumer category, against the Row label captioned in step 1, calculate the collection shortfall using the formula as shown below.

	A	B	C	D
1				
2				Water
3			Domestic	Commer
4		Amount of Bills Issued (Rs. in million)	951	
5		Amount of Bills Collected (Rs. in million)	880	
6				
7				
8				Water
9			Domestic	Commer
10		(Shortfall) - in million	=C4-C5	
11				

COLLECTION EFFICIENCY ASSESSMENT

37

Step 2: Calculation of Collection Shortfall (Rs.) (Cont'd)

For calculating the shortfall for all the consumer categories, hover the mouse pointer on the bottom right of the cell cursor in which the formula has been used in sub-step 1. The pointer would change into the **black bold plus sign**. Drag the cursor to cover all the consumer categories:

	Water			Sewerage			Total		
	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial
(Shortfall) - in million	71								

The formula would automatically get pasted into the adjacent cells. The desired output shall be as follows:

	Water			Sewerage			Total		
	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial
(Shortfall) - in million	71	24	34	88	24	7	159	48	41

COLLECTION EFFICIENCY ASSESSMENT

38

Step 3: Calculation of Collection Efficiency (%)

- Repeat step 1 and give the caption of “**Collection Efficiency (%)**” near the copied headers.
- Under each consumer category, against the Row label as captioned above, **calculate the collection efficiency** using the formula as shown below.

	A	B	C
1			
2			
3			Domestic
4		Amount of Bills Issued (Rs. in million)	951
5		Amount of Bills Collected (Rs. in million)	880
6			
7			
8			
9			Domestic
10		(Shortfall) - in million	71
11			
12			
13			
14			Domestic
15		Collection Efficiency (%)	=C5/C4
16			

COLLECTION EFFICIENCY ASSESSMENT

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Step 3: Calculation of Collection Efficiency (%) (Cont'd)

- Repeat sub-step 2 of step 2 to copy the formula to the adjacent cells to compute collection efficiency for all the consumer categories. Following is the desired output.

Water			Sewerage			Total		
Domestic	Commerical	Industrial	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial
0.925640456	0.781555827	0.65	0.904403047	0.785262261	0.92	0.915177908	0.783391584	0.773

- Selecting the entire row and convert all the efficiency figures into **percentage equivalent**. Key - “**Ctrl + Shift + %**”

Water			Sewerage			Total		
Domestic	Commerical	Industrial	Domestic	Commerical	Industrial	Domestic	Commerical	Industrial
93%	78%	65%	90%	79%	92%	92%	78%	77%

COLLECTION EFFICIENCY ASSESSMENT

40

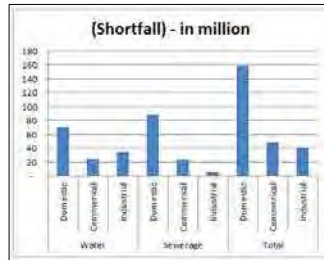
Step 4: Creation of Column Charts - Shortfall

- 1) Select the entire table containing the values of collection shortfall for each consumer category as shown below:

(Shortfall) - in million	Water			Sewerage			Total		
	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial
	71	24	34	88	24	7	159	48	41

Collection Efficiency (%)	Water			Sewerage			Total		
	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial
	93%	78%	65%	90%	79%	92%	92%	78%	77%

- 2) Insert tab, click “**Column**” in the section titled, “**Charts**”. Click the first 2-D column chart type to generate a 2-D column chart. The following would be the resulting graph generated.



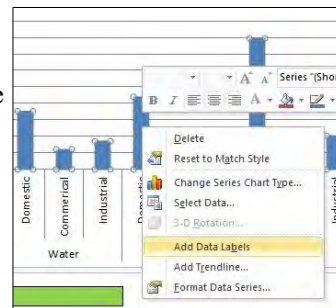
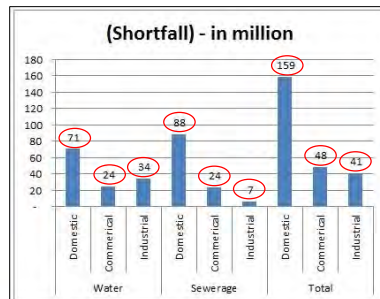
COLLECTION EFFICIENCY ASSESSMENT

41

Step 5: Managing the chart style/data/format

- 1) Right-click on any column to generate a drop-down menu. Click on the option, “**data labels**” to add the data labels.

- 2) After adding data labels, the graph would have the following outlook.



COLLECTION EFFICIENCY ASSESSMENT

42

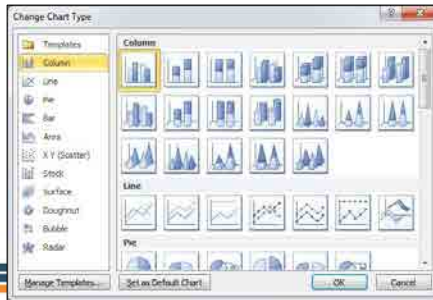
Step 6: Managing the chart style/data/format (Cont'd)

1. If chart type is to be changed, Chart type can be changed once.

Chart Tools - “Design” tab - click on “Change Chart Type” icon.



2. The following dialogue box would appear from which the requisite template can be selected.

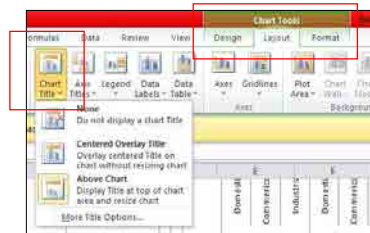


COLLECTION EFFICIENCY ASSESSMENT

43

Step 5: Managing the chart style/data/format (Cont'd)

1) Addition/deletion/alignment adjustment of **Chart Title** using “Chart Title” icon in “Layout” Tab of “Chart Tools” option on title bar.



2) **Data labels** can be added, deleted or aligned using the “Layout” tab by clicking on “Data Labels” icon.

3) **Axis titles** can be added, deleted or aligned using the “Layout” tab by clicking on “Axis Titles” icon.

4) **Axis labels** can be added, deleted or aligned using the “Layout” tab by clicking on “Axis” icon

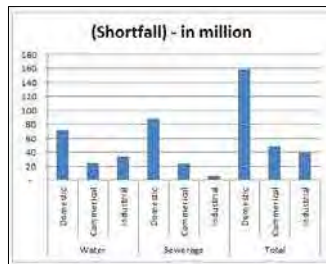
5) **Data Table** can be annexed to the horizontal axis using the “Data Table” icon.

COLLECTION EFFICIENCY ASSESSMENT

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Step 6: Analysis (Identification of GAPS) on final output

Output Graphs



Output Graph for Collection Efficiency (%)

?

Data Tables

	Water			Sewerage			Total		
	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial
(Shortfall) - in million	71	24	34	88	24	7	159	48	41

	Water			Sewerage			Total		
	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial	Domestic	Commercial	Industrial
Collection Efficiency (%)	91%	78%	65%	90%	79%	92%	92%	78%	77%

COLLECTION EFFICIENCY ASSESSMENT

45

ACTIVITIES & GROUP EXERCISE

- ACTIVITY B-13:** Creation of column chart for Collection Efficiency (%).
- ACTIVITY B-14:** Application of entire exercise on “Number of Bills”
- Group Exercise B-16:** GAP analysis and Target setting for Collection Efficiency.

COLLECTION EFFICIENCY ASSESSMENT

B:13 - INDIVIDUAL ACTIVITY

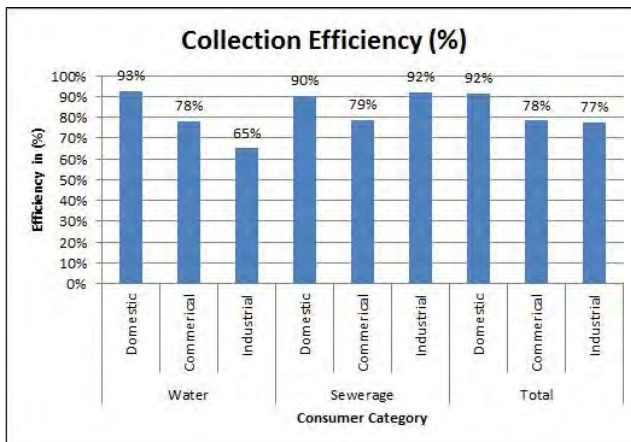
Repeat step 4 on collection efficiency table to:

- a) **Create the graph** of your choice and:
 - a) Add **Data Labels**;
 - b) Align Chart Title as “**Above Chart**”; and
 - c) Display Vertical and Horizontal axis titles

(Time Available: 15 minutes)

COLLECTION EFFICIENCY ASSESSMENT

ACTIVITY 3: OUTPUT



COLLECTION EFFICIENCY ASSESSMENT

B-14: INDIVIDUAL ACTIVITY

Repeat all 5 steps on number of bills data to:

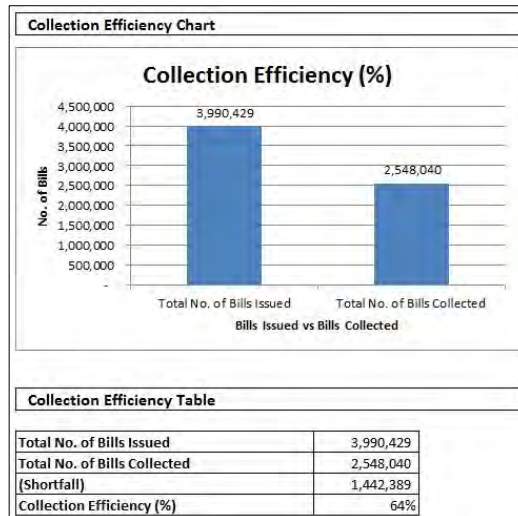
- Compute the **Collection Shortfall (No.)** in tabular form.
- Compute the **Collection Efficiency (%)** in tabular form.
- Create the graph** of your choice that compares “total number of bills issued” and “total number of bills collected” and:

- Add **Data Labels** to the columns;
- Insert and align Chart Title as “**Above Chart**”; and
- Display Vertical and Horizontal axis titles

(Time Available: 20 minutes)

COLLECTION EFFICIENCY ASSESSMENT

ACTIVITY 4: OUTPUT



COLLECTION EFFICIENCY ASSESSMENT

B:16 - GROUP EXERCISE

GIVEN

1. **Shortfall** in monetary terms
2. **Shortfall** in numeric terms
3. **Collection efficiency (%)** – Amount of Bills
4. **Collection efficiency (%)** – Number of Bills

GROUPS FORMATION

Four (4) Groups will be formed

Each Group will represent their respective Utility preferably

REQUIRED

1. Enumerate possible reasons for collection inefficiency (**GAP Analysis**)
2. Perform **Target Setting** for the **Collection Efficiency (%)** in **amount of bills** and **number of bills** for the next 3 years.

(Time Available: 30 minutes)



COLLECTION EFFICIENCY ASSESSMENT

GROUP EXERCISE FORMAT: B-16

Sr. No.	Reasons for discrepancy	Priority			
		Critical	High	Medium	Low
1					
2					
3					
4					
5					
6					
7					
8					



BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 52

GROUP EXERCISE FORMAT: Target Setting

Indicator	Unit	Current Status	Target		
			2017-18	2018-19	2019-20
Collection Efficiency (Physical)	%				
Collection Efficiency (Financial)	%				

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 53

AMOUNT OF ARREARS

Arrears as at	Target				
	Multan	Rawalpindi	Faisalabad	Gujranwala	Lahore
	Rs. in Million				
June 30, 2016	966.81	860.641			

BUDGETARY STRUCTURE ANALYSIS & DEFICIT ASSESSMENT 53

B:16A - GROUP EXERCISE

TARGET SETTING FOR REDUCTION OF ARREARS

Indicator	Unit	Current Status	Target		
			2017-18	2018-19	2019-20
Reduction in Arrears	Amount (Rs.)				

Note: Insert the outcome of home assignment in business plan format (Annex-E)

54

THANKS



In the name of Allah, the Beneficent, the Merciful بسم الله الرحمن الرحيم

MODULE - 4

LECTURE-01

Strategies for Improvement in Revenue Management System

Mr Asif Iqbal

Financial Management Specialist



MODULE OVERVIEW

1

- 1) Learning Outcomes
- 2) Session 1: Strategies for Improvement in Revenue Management System
- 3) Session 2: Simulation Exercise – Arrears Recovery Plan
- 4) Session 3: Action Plan for Revenue Management System.



LEARNING OUTCOME

2

1) Knowledge Outcome:

- a) Identify CAUSE of Revenue Management Issue
- b) Formulate STRATEGIES for improvement
- c) Use of MS Excel for AGING OF ARREARS

2) Skill Set Outcome:

- a) ACTION PLAN for Improvement in Revenue Management System

IMPROVEMENT IN REVENUE MANAGEMENT SYSTEM

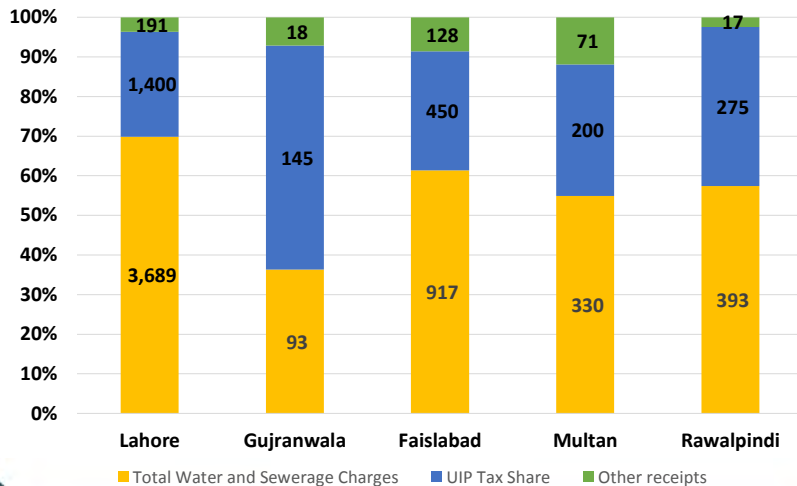
3

What are the Revenue Management Issues?

REVENUE ANALYSIS OF WSS UTILITIES

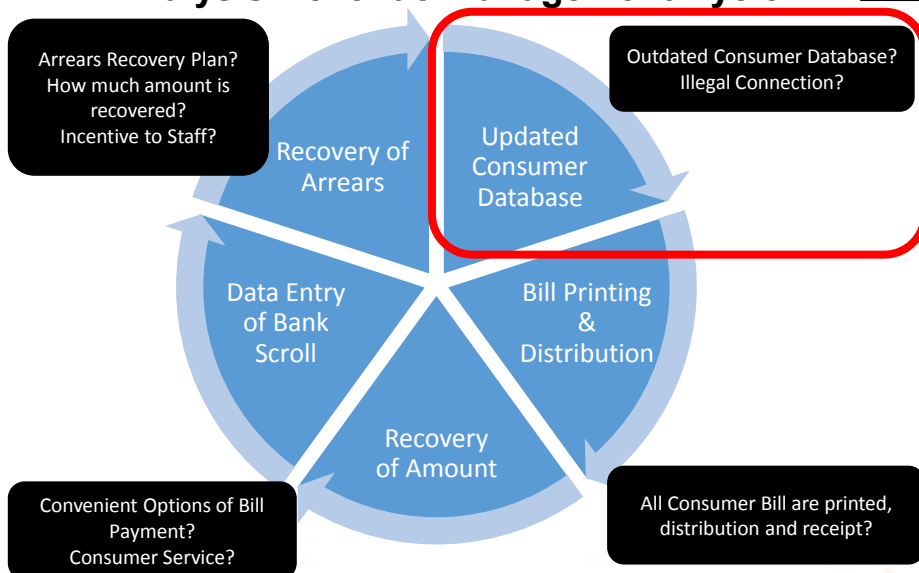
4

Break-up of Revenue and Receipts FY 2016-17 (Rs in Million)



Analysis Revenue Management Cycle

5



Issue # 1 Outdated Consumer Database

6

ISSUES

Property Sold without clearing the Arrears

Property Sold without clearing Arrears.
WASA issued notice to new property owner.

Change of Billing Category

The Domestic property is not converted into Commercial property

Incomplete Address

The street number, colony number or any other particular of address does not exist in consumer database.

Multiple Billing Category

The Domestic property is in multiple use i.e commercial usage as well.

STRATEGY

Dedicated Cell/Unit may be established where the property sold transactions occur and issuance of NOC by WSS Utility may be made part of the law in this regards.

A dedicated **Consumer Survey** shall be conducted on regular intervals to update the Consumer Database

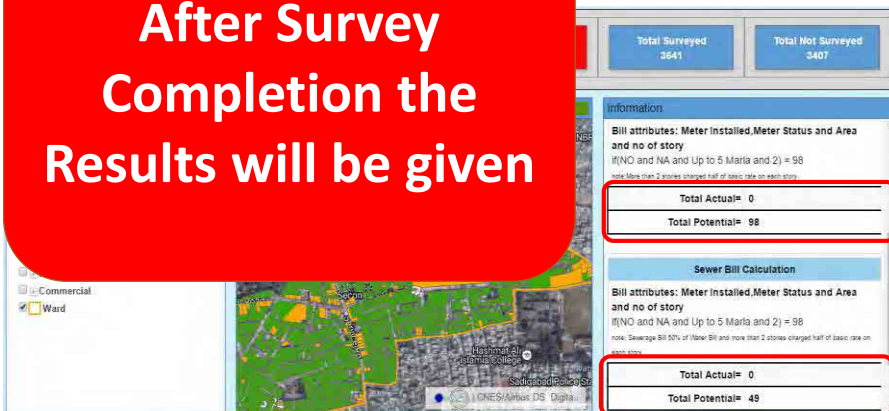
Issue # 1 Outdated Consumer Database

7

Example of WASA Rawalpindi GIS Consumer Survey Dashboard/

Reporting with Results

After Survey Completion the Results will be given



Issue # 1 Outdated Consumer Database

8

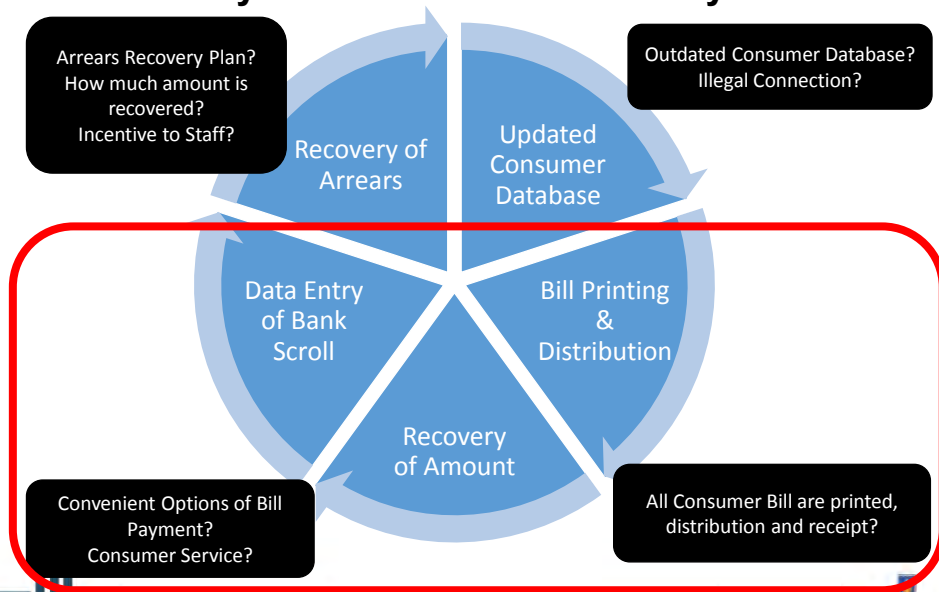
GROUP ACTIVITY: (15 Minutes)

Strategies for Outdated Consumer Database in your WSS?

Sr. No.	Strategy	Responsibility	Start Date	End Date	KPIs
1					
2					
3					
4					
5					

Analysis Revenue Collection Cycle

9



Issue # 2 : Bill Distribution

10

Bills should reach to all customers in time

What are the Bill Distribution and Receipt Issue of your WSS Utility?

Issue # 2 : Bill Distribution

11

Current Method of Bill Distributions

	Faisalabad	Gujranwala	Lahore	Multan	Rawalpindi	Quetta
WASA Staff	X	✓	✓	✓	✓	✓
Third Party	✓	X	X	X	X	X
SMS	X	X	X	X	X	X
Email	X	X	X	X	X	X
Automated Calls	X	X	X	X	X	X
Online Duplicate Bills	✓	X	✓	X	✓	X

Issue # 2 : Bill Distribution

12

Bills should reach to all customers in time

WASA Faisalabad

ISSUES

- Bills Distribution to consumers was not 100%

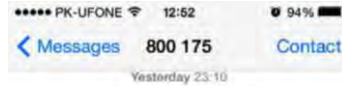
DETAILS

- Bill Distribution Agreement with Pakistan Post Office Department
- Then another agreement with M/S Abdul Rahim & Co

BENEFITS

- Bill Distribution Expense come down from 4.2 Million to 0.8 Million.
- Improved Consumer Database by obtaining CNIC and Mobile No.
- Bill Distribution Walk Plan
- Monthly Recovery raised from Rs 53.94 Million to 58.05 Million

KWSB

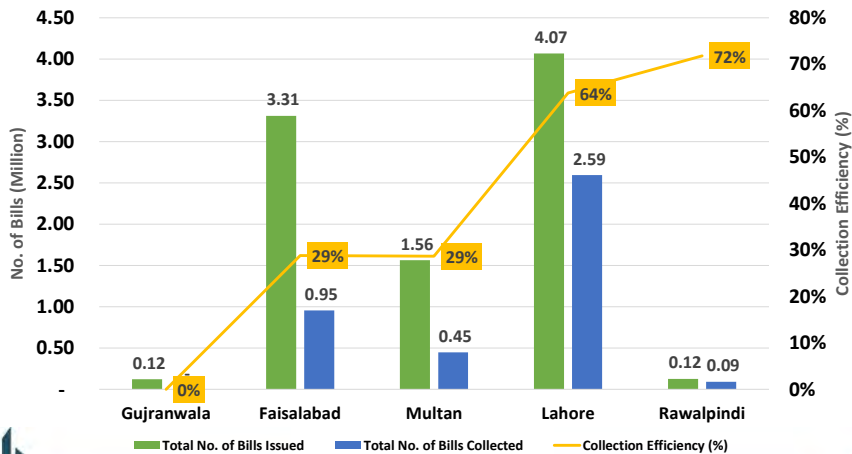


[From KWSB]
Dear Consumer ! Your bill for the month of March has been issued. Kindly pay your bill before 28th March to avoid late payment surcharge. If you have not received the bill then please inform through reply message to get the duplicate bill.
Dy. Managing Director Revenue KW&SB.
(SMSall.pk)

Issue # 2 : Bill Distribution

13

Collection Efficiency in Numbers
Five WASAs 2016-17



Issue # 3 : Bill Receipt

14

Facilitate the Consumers in payment of bills

How many mode of payments your WSS Utility facilitates?

	Faisalabad	Gujranwala	Lahore	Multan	Rawalpindi	Quetta
Financial Institutions	✓	✓	✓	✓	✓	✓
NADRA	✓	✓	✓	✓	✓	✓
Easy Paisa	✗	✓	✗	✗	✓	✗
U Paisa	✗	✗	✗	✗	✓	✓
UBL Omni	✓	✗	✗	✓	✗	✓
Post Office	✓	✓	✗	✓	✓	✓

Issue # 3 : Bill Receipt

15

Facilitate the Consumers in payment of bills

How many banks facilitate the payment of your WSS Utility?

Faisalabad	Rawalpindi	Quetta	Multan
<ol style="list-style-type: none"> Allied Bank Limited Habib Bank Limited Bank of Punjab National Bank of Pakistan Bank Alfalah Limited United Bank Limited Muslim Commercial Bank FINCA Microfinance Bank SME Bank Askari Bank Summit Bank Bank Islami Dubai Islami Burj Bank Mezan Bank Samba Bank NIB Bank Bank of Khayber NRSP Microfinance Bank 	<ol style="list-style-type: none"> Allied Bank Limited Habib Bank Limited National Bank of Pakistan Muslim Commercial Bank United Bank Limited Bank of Punjab Bank Alfalah Limited 	<ol style="list-style-type: none"> Muslim Commercial Bank United Bank Limited Tameer Bank Limited 	<ol style="list-style-type: none"> Habib Bank Limited, Bank Al-Habib, Bank of Punjab, United Bank, MCB
	Lahore	Gujranwala	
	<ol style="list-style-type: none"> Allied Bank Limited United Bank Limited National Bank of Pakistan CitiBank Bank of Punjab Habib Bank Limited JS Bank Bank Alfalah Bank Alhabib Zarai Tarakati Bank Askari Bank Burj Bank Limited Meezan Bank 	<ol style="list-style-type: none"> Bank of Punjab United Bank Limited Allied Bank Limited Habib Bank Limited 	

BACK

Issue # 3 : Bill Receipt

16

Facilitate the Consumers in payment of bills

How many banks facilitate the payment of your WSS Utility?

DETAILS	Banks	
Rawalpindi	07	1 Al Baraka Bank (Pakistan) Limited. 2 Allied Bank Limited. 3 Askari Bank Limited. 4 Bank Alfalah Limited. 5 Bank Al-Habib Limited. 6 BankIslami Pakistan Limited. 7 Citi Bank N.A. 8 Deutsche Bank A.G. 9 Dubai Islamic Bank Pakistan Limited. 10 Faysal Bank Limited. 11 First Women Bank Limited. 12 Habib Bank Limited. 13 Habib Metropolitan Bank Limited. 14 Industrial and Commercial Bank of China 15 Industrial Development Bank of Pakistan. 16 JS Bank Limited. 17 MCB Bank Limited. 18 MCB Islamic Bank Limited. 19 Meezan Bank Limited. 20 National Bank of Pakistan.
Lahore	13	21 S.M.E. Bank Limited. 22 Samba Bank Limited. 23 Silk Bank Limited. 24 Sindh Bank Limited. 25 Soneri Bank Limited. 26 Standard Chartered Bank (Pakistan) Limited. 27 Summit Bank Limited. 28 The Bank of Khyber. 29 The Bank of Punjab. 30 The Bank of Tokyo-Mitsubishi Limited. 31 The Punjab Provincial Cooperative Bank Limited. 32 United Bank Limited. 33 Zarai Taraqati Bank Limited. 34 NIB Bank Limited
Faisalabad	19	
Quetta	03	
Multan	05	
Gujranwala	04	

34 Scheduled Banks in Pakistan as per SBP – Dec 30, 2016

Issue # 2 & 3 : Bill Distribution and Receipt

17

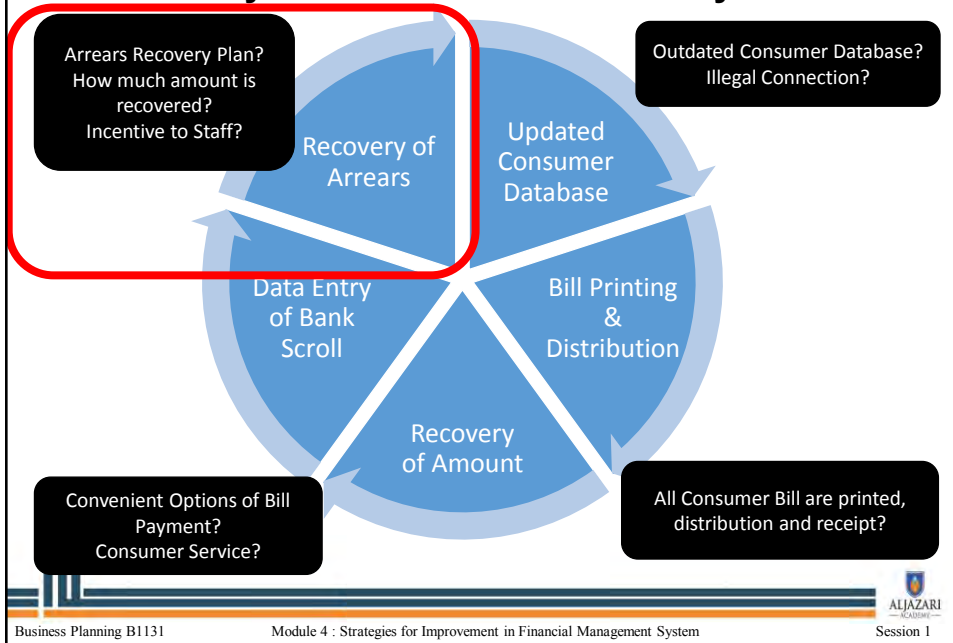
GROUP ACTIVITY: (15 Minutes)

Strategies for Bill Distribution and Receipt in your WSS?

Sr. No.	Issues	Strategy	Responsibility	Start Date	End Date	KPIs
1						
2						
3						
4						
5						

Analysis Revenue Collection Cycle

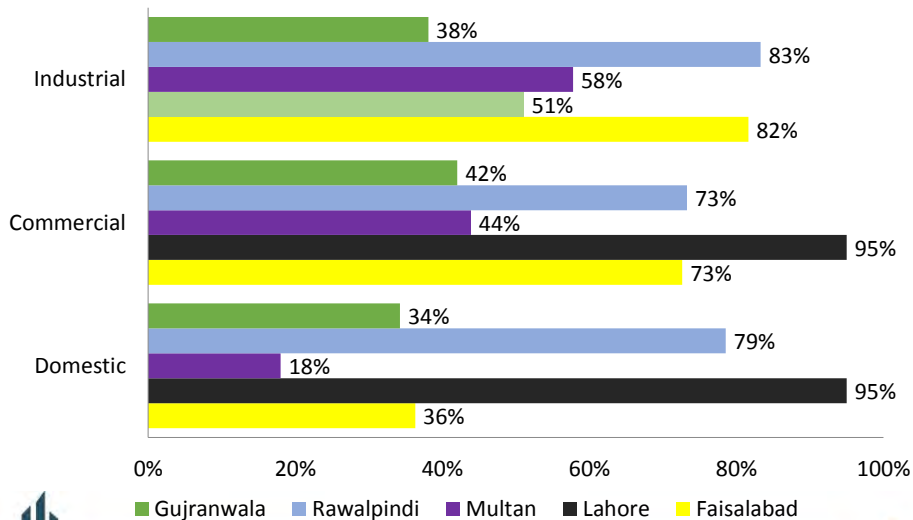
18



COLLECTION EFFICIENCY OF WSS UTILITIES

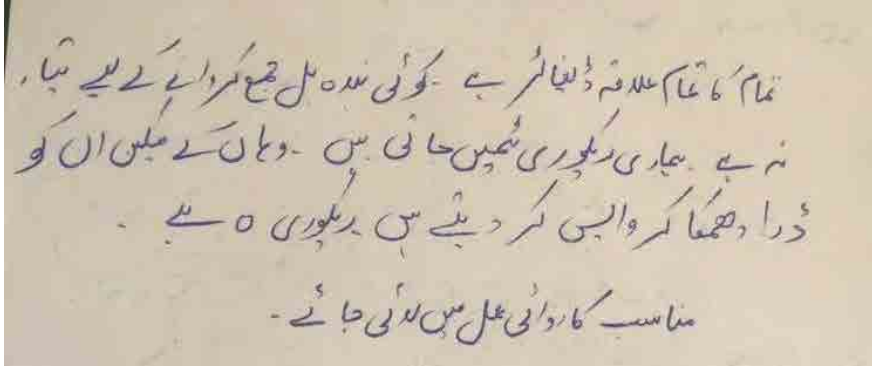
19

Financial Data FY 2015-16



Issue # 4 : Arrear Recovery

20



Issue # 4 : Arrear Recovery

21

What are the Arrears Recovery Issues faced by your WSS Utility?

Issue # 4 : Arrear Recovery

22

Example of "Employee Incentives"
For Recovery of Arrears - 2001



'Never-paid' cases owe Rs 29 crore to Water Board

THE TIMES OF INDIA NEWS SERVICE | Jul 13, 2001, 12:58 AM IST

✉ 🖨 A- A+

h yderabad: the hyderabad metropolitan water supply and sewerage board (hmwssb) has failed to persuade the nearly 44,000 consumers who have not paid for water. the amount owed by these defaulters is rs 29.54 crore. officials of the water utility has served notices on these consumers --

Source: <http://timesofindia.indiatimes.com/city/hyderabad/Never-paid-cases-owe-Rs-29-crore-to-Water-Board/articleshow/1397277626.cms>

Issue # 4 : Arrear Recovery

23

Example of "Employee Incentives"
For Recovery of Arrears - 2001



The Meter Readers were provided incentive:

Rs. 1 per bill for arrears.

3% of collected amounts for "Never Paid Consumers".

General Managers monitor Revenue
Collection monitored after 15 days.

The General Manager of "**Best Performing Circle**" is awarded by **Chief Minister** of Andhra Pradesh



Source: "Developing Effective Billing and Collection Practices" by WSP 2008 .

Issue # 4 : Arrear Recovery

24

Example of "Employee Incentives"
For Recovery of Arrears - 2001



Financial Impact after two years.



Source: "Developing Effective Billing and Collection Practices" by WSP 2008 .

Issue # 4 : Arrear Recovery

25

Voluntary Disclosure Scheme (VDS) and
One-Time Settlement Scheme (OTS)- 2014



**Voluntary Disclosure
Scheme (VDS)**

Deals with regularization of
illegal water connections
and avoids police cases

Water Board to Act against Defaulters and Violators

By Express News Service | Published: 02nd April 2014 09:05 AM |
Last Updated: 02nd April 2014 09:05 AM | A+ A A-

**One-Time Settlement
Scheme (OTS)**

Deals with settlement of
dues with complete waiver
of interest

With the Voluntary Disclosure Scheme (VDS) and One-Time Settlement (OTS) scheme for regularisation of illegal water supply connections at nominal penalty and settlement of dues with interest waiver coming to an end on Monday, the Hyderabad Metropolitan Water Supply and Sewerage Board is set to take stringent action against defaulters and violators by disconnecting tap connections and also slapping criminal

Source: <http://www.newindianexpress.com/cities/hyderabad/2014/apr/02/Water-Board-to-Act-against-Defaulters-and-Violators-593512.html>

Issue # 4 : Arrear Recovery

26

Voluntary Disclosure Scheme (VDS) and One-Time Settlement Scheme (OTS)- 2014



Voluntary Disclosure Scheme (VDS)
Deals with regularization of illegal water connections and avoids police cases

15000 Consumers

One-Time Settlement Scheme (OTS)
Deals with settlement of dues with complete waiver of interest

11000 Consumers

CITIES » HYDERABAD

HYDERABAD, April 24, 2014

Updated: April 24, 2014 01:05 IST

11,000 apply for water connection regularisation

YUNUS Y. LASANIA

COMMENT · PRINT · T

Like Share 2 Tweet G+ 0 in Share Share

Nearly 15,000 consumers settled their dues and 11,000 others applied for regularisation of their illegal water connections under the One Time Settlement (OTS) and the Voluntary Disclosure Scheme (VDS) programmes offered by the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWSSB) until March 31.

Source: <http://www.thehindu.com/news/cities/Hyderabad/11000-apply-for-water-connection-regularisation/article5941137.ece>

Issue # 4 : Arrear Recovery

27

Example : Yahaba Municipality

YAHABA

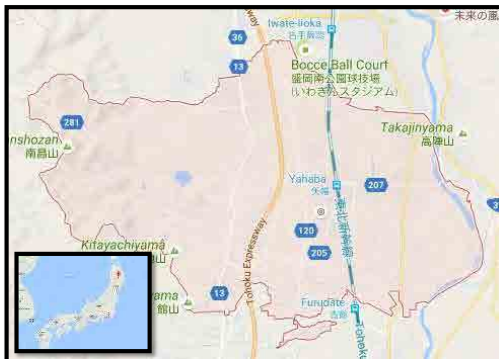
- Town in Iwate Prefecture, Japan
- Population of 27,168 and Total Area (25.89 sq mi)

PROBLEM STATEMENT

- **Management:** Lack of Funds (Waterworks renovations, declining population)
- **Citizens :** Tastier Tap Water and Cheaper Water rates

STRATEGY

- Yahaba worked out a Two-Step PR Strategy



OBJECTIVES

- Help in reduction in Arrears
- Participatory Approach by engaging customers

Issue # 4 : Arrear Recovery

Example : Yahaba Municipality

28

STEP 1

- Publish a **Carton Booklet** to inform the current Water Supply Situation



STEP 2

- Hold a series of workshops in which citizens participated as **Water Supporters**



Issue # 4 : Arrear Recovery

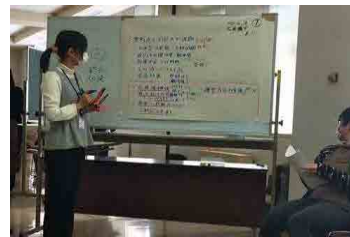
Example : Yahaba Municipality

29

- Started in 2008, Seven people applied first time.
- In 2009, 11 participants attended.
- The workshop has 20 participants capacity
- Group of 10 participants with one facilitators and one record Keepers
- The Facilitators asks questions and the recorder wrote down all the information on a white board
- They watched special Videos & pictures, tasted tap water Vs Mineral Water, conduct site visits.
- "Individual learning" to "Community Learning"

BENEFITS

- The municipality has convinced the citizens that,
- **Regular payment of bills is important**
- **Raise water rates to ensure a secure water supply**



Issue # 4 : Arrear Recovery

34

Customer Un-willing to pay

Political Interference

Out-dated Consumer Database

Customer Service Centre

Employees Motivation

STRATEGY

Know your Consumer

Categorize the Consumers and take appropriate Actions
"AGING OF ARREARS"

"Can't Pay" Category of Consumers

- 1-Installment payments of Arrears
- 2-Regular Follow up on Phone
- 3-Voluntary Disclosure & Discounts
- 4-Incentives to Recovery Employees
- 5-Regularly M&E of Progress

"Won't Pay" Category of Consumers

Legal Actions

Business Planning B1131
Module 4 : Strategies for Improvement in Financial Management System
ALJAZARI ACADEMY Session 1

Issue # 4 : Arrear Recovery

35

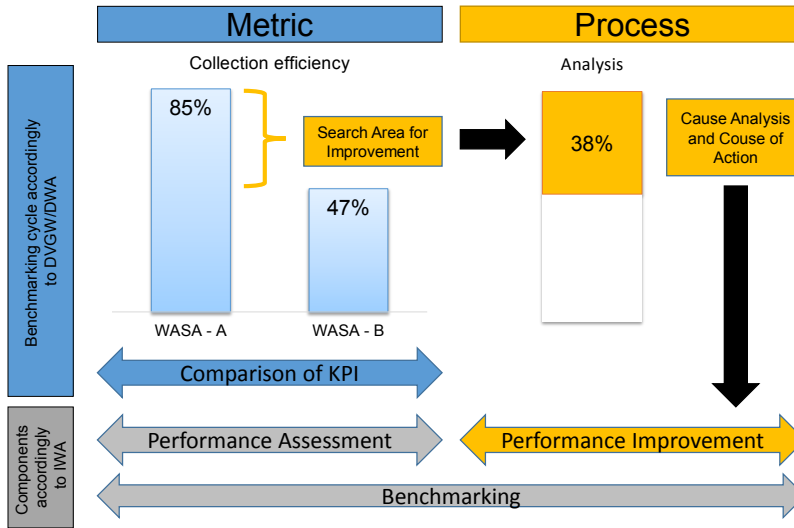
GROUP ACTIVITY: (30 Minutes)

Strategies for Arrear Recovery in your WSS?

Sr. No.	Issues	Strategy	Responsibility	Start Date	End Date	KPIs
1						
2						
3						
4						
5						

TYPES OF BENCHMARKING

33



Source: <http://www.slideshare.net/BorisavMilutinovic/benchmarking-and-performance-indicators-borisav-milutinovic>
Benchmarking cycle according to DVGW and DWA (2008)

ARREARS - FAISALABAD

12

Arrears		2013-14	2014-15	2015-16	2016-17
		Rupees in million			
Opening Balance	A	2,727	2,571	2,514	2,401
Arrears for the years	B	84	122	154	175
	C=A+B	2,811	2,694	2,668	2,575
Arrears Collected for the years	D	240	180	267	255
Closing Balance	E=C-D	2,571	2,514	2,401	2,320

ARREARS - LAHORE

Arrears		2013-14	2014-15	2015-16	2016-17
		Rupees in million			
Opening Balance	A	3,189	3,492	3,641	3,990
Arrears for the years	B	813	830	1,041	652
	C=A+B	4,002	4,322	4,682	4,642
Arrears Collected for the years	D	510	682	692	685
Closing Balance	E=C-D	3,492	3,641	3,990	3,956

ARREARS - MULTAN

Arrears		2013-14	2014-15	2015-16	2016-17
		Rupees in million			
Opening Balance	A	789	839	969	967
Arrears for the years	B	257	286	267	
	C=A+B	1,046	1,125	1,236	967
Arrears Collected for the years	D	206	256	270	
Closing Balance	E=C-D	839	869	967	967

ARREARS - RAWALPINDI

Arrears		2013-14	2014-15	2015-16	2016-17
		Rupees in million			
Opening Balance	A	652.70	704.34	773.98	848.97
Arrears for the years	B	128.20	156.79	163.14	141.17
	C=A+B	780.90	861.14	937.12	990.14
Arrears Collected for the years	D	76.56	87.16	88.15	102.00
Closing Balance	E=C-D	704.34	773.98	848.97	888.13

ARREARS - GUJRANWALA

Arrears		2013-14	2014-15	2015-16	2016-17
		Rupees in million			
Opening Balance	A	698	706	729	754
Arrears for the years	B	45	52	56	57
	C=A+B	743	759	785	811
Arrears Collected for the years	D	37	30	31	36
Closing Balance	E=C-D	706	729	754	775

Issue # 5 : Additional Sources of Revenue

36

In Pakistan, the **Sources of Revenue** in **Water and Sanitation Utilities** as mostly:

1. Water Charges (including Arrears)
2. Sewerage Charges (including Arrears)
3. Connection Fee
4. Bank Profit
5. Tender Fee
6. Advertisement

Are there any other sources of revenue available?

Issue # 5 : Additional Sources of Revenue

37

What are the **Additional Sources of Revenue** of your **WSS Utility?**

Sr No.	Sources of Revenue
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Issue # 5 : Additional Sources of Revenue

38

Rental of Land

GULGASHT OFFICE WATER WORKS

Rental value
Rs. 165,000/pm

PizzaHut GulGashat Avenue, Multan

M-WSA working on the revaluation of its real estate portfolio

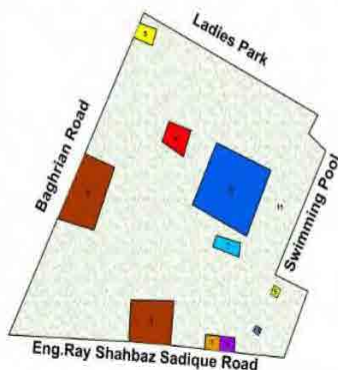
Issue # 5 : Additional Sources of Revenue

39

Rental of Land

Business Opportunities for Lahore WASA Capitalisation of Land Portfolio

Green Town Sub-Division-SDO Office



Legend

	Complaint Center		Store
	Generator		Tube Well (Closed)
	Masjid		Wash Room
	Open Space		Water Tank/Offices
	Residence		

14

Sr.No.	Type	Area (Sq.ft.)	Area (Marta)
1	Wash Room	225.47	1.00
2	Complaint Center	228.82	1.02
3	Residence	1888.43	8.39
4	Residence	2492.77	11.08
5	Store	320.85	1.43
6	Masjid	602.12	2.68
7	Generator	349.97	1.56
8	Water Tank/Offices	4306.10	19.14
9	Store	68.68	0.31
10	Tube Well (Closed)	45.48	0.20
11	Open Space	59831.30	265.92



Issue # 5 : Additional Sources of Revenue

40

Advertisement on Over Head Reservoirs.



Leased to Telco
Companies



Leased for
Advertisement

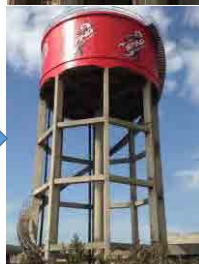
Issue # 5 : Additional Sources of Revenue

40

Advertisement on Over Head Reservoirs.



Leased to Telco
Companies



Leased for
Advertisement

Issue # 5 : Additional Sources of Revenue Over Head Reservoirs (Multan)

40

Sr.	Name	Capacity	Leased
1	Naqsh Band Colony	100,000 Gallon	
2	Eid Ghah	100,000 Gallon	Pak Cables
3	Gulgasht Colony Pizza Hut	100,000 Gallon	Telecom
4	Mda Chowk	100,000 Gallon	Pak Cables
5	Bagh Lange Khan	100,000 Gallon	
6	Hassan Perwana	200,000 Gallon	Telecom
7	Lohari Gate	400,000 Gallon	
8	Timber Market	100,000 Gallon	
9	Shah Shamas Colony	100,000 Gallon	
10	Qasim Pur Colony	100,000 Gallon	
11	Mumtaz Abad	100,000 Gallon	Pak-Cables
12	Tughlak Town	100,000 Gallon	
13	Ansar Colony	100,000 Gallon	
14	G-Block (Sra)	100,000 Gallon	Pak-Cables
15	D-Block (Sra)	100,000 Gallon	
16	K-Block (Sra)	100,000 Gallon	
17	Gulshan Market (Sra) New Multan	100,000 Gallon	Pak-Cables
18	Aam Khas Bagh	100,000 Gallon	
19	Shamsabad (Abandon)	50,000 Gallon	
20	T.B Road (Abandon)	100,000 Gallon	
21	Gulashst Colony Near Board Office (Abandon)	50,000 Gallon	
22	W-Block (New Multan) (Abandon)	50,000 Gallon	

Issue # 5 : Additional Sources of Revenue Over Head Reservoirs (Rawalpindi)

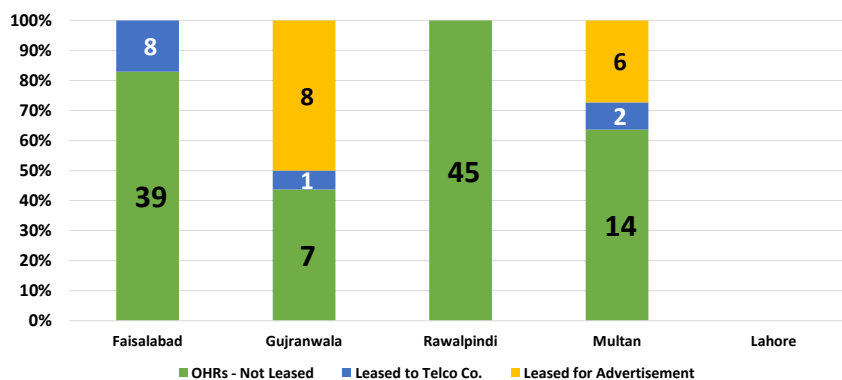
40



Issue # 5 : Additional Sources of Revenue

41

Statistics on Advertisement on Over Head Reservoirs 2016-17



Issue # 5 : Additional Sources of Revenue

42

Sale of Waste Water and letting out of Crane & Fort lifter.



Subject: **RENTAL CHARGES OF PARKING YARD MACHINERY**

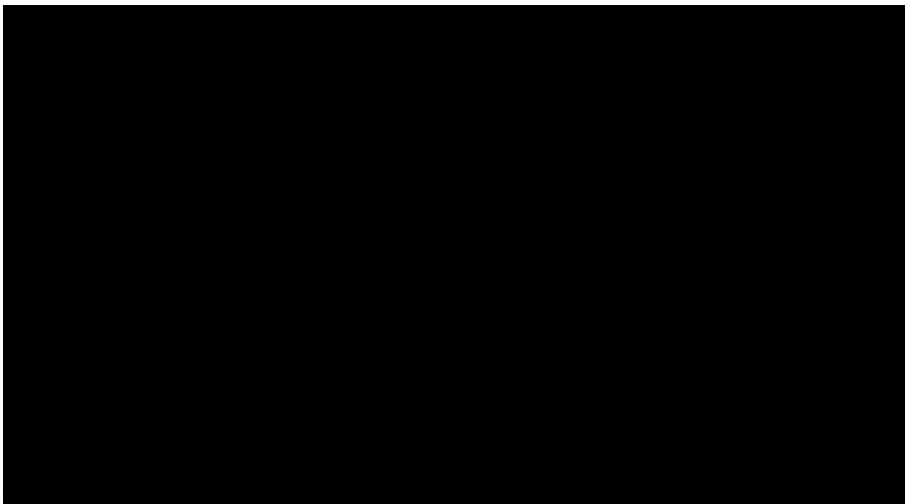
The rental charges of Parking Yard machinery (excluding PDL) being implemented at present are as follows:

Sr. No	Type	Current Rates
1	Jetter Machine	2000/hr
2	Sucker Machine	2000/hr
3	Dump Truck	900/trip
4	Crane Cargo Truck	2000/hr
	For Shifting of Dewatering Set/Mini Backhoe	900/trip
5	Wheel Backhoe (Excavator)	2000/hr
6	Mini Backhoe	1500/hr
7	Dewatering Set	2000/day
	Operator Charges	546/day
8	Water Tanker	1500/day

Issue # 5 : Additional Sources of Revenue

Sale of Water Bottles – Water Bottling Plant

43



Issue # 5 : Additional Sources of Revenue

44

GROUP ACTIVITY: (30 Minutes)

Strategies for Additional Sources of Revenue in your WSS?

Sr. No.	Issues	Strategy	Responsibility	Start Date	End Date	KPIs
1						
2						
3						
4						
5						

THANKS



SIMULATION EXERCISE
ARREARS RECOVERY PLAN



AGING OF ARREARS

1

LEARNING OUTCOMES

Use Of MS EXCEL for Aging of Arrears

Aging of Arrears

Consumer Database

Business Planning B1131 Module 4: Strategies for Financial Management ALJAZARI KADUNA Session 2

ARREARS RECOVERY PLAN

2

ARREARS AGING REPORT FROM CONSUMER DATABASE USING MS EXCEL

Step1: Understanding the Consumer Database

- A = Unique Consumer Number
- H = Category of Connection
- K = Current Water Bill
- L = Current Sewerage Bill
- M = Current Aquifer Bill
- N = Amount of Arrears

A	B	C	D	E	F	G	H	I	J	K	L	M	N
CONSUM	NAME	HOUSE	STREET	ROAD	COLONY	PROPAREA	CATEGORY	FSIZE	BCODE	W-BILL	S-BILL	ACQUIFER	ARREARS
002 02559L	IRMITAZ HUSSAIN				REHMIT	10	D	0		0	112		7336
004 000007	FOZIA SHAFIQ W/O SHAFIQ AHMAD/CLORAS BEAUTY PARL	8A			MIDA CHOWK		GOVT EMPLOYEES			0	975	0	5378
004 000003	SHALIN GUEST HOUSE /SHEHER TAAR S/O MALIK HASSAN					10	C	0	IS HOUSE	0	700	200	1003
004 000004	MUSHTAQ AHMAD S/O RAMZAN	111A				9	D	144		200	112		356
004 000005	MALIK MUHAMMAD ASHRAF S/O AHMAD BLUX	12A			BAHARAN	10	D	144		200	112		356
004 000006	SAEED AHMAD ALI SHAH S/O MAJED	X	X		MIDA	5	D	144		120	88		220
004 000007	M. ISHAN	X	X		MIDA	10	D	144		200	112		356
004 000008	DR. ASIF SALEEM				M.D.A. RD	10	D	144		200	112		356
004 000009	HEIDER ZAMAN				M.D.A. CHOWK	10	D	0		0	112		136
004 000010	IRAZAN AHMAD				MIDA CHOWK	5	D	0		0	88		88
004 000011	PERVEZ AKHTER S/O M. SAGHIR	X			MIDA	5	D	0		0	88		1032
004 000012	MALIK NAZAR					10	D	0		0	112		4748
004 000013	D.S.P. MACSOOD AHMAD	X				7	D	144		200	112		8405
004 000014	MALIK ALLAH WABITA S/O PIR BURKHSH				SHADAB	3	D	144		72	48		130

ARREARS RECOVERY PLAN

3

Step 2: Assigning the Arrears Aging Criteria

Lookup1	Reporting Categories
1	1>=months late <=3
3	3.1>=months late <=6
6	6.1>=months late <=9
9	9.1>=months late <=12
12	12.1>=months late <=24
24	24.1>=months late <=1000

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ARREARS RECOVERY PLAN

4

Step 3: Calculating the Arrears in “Months” for each consumer

- i. Create a new column after “Arrears” Column with the name of “Months”.
- ii. Calculate the months by using the formula = [Arrears/(W-Bill+S-Bill+Acquifer)]. The MS Excel Formula is [N11/(K11+L11+M11)]
- iii. Copy the formula to the remaining rows by double clicking the icon

N	
ARREARS	Months
7336	65.5

WAMT	SAMT	ACQUIFER	ARREARS	Month
0	112		7336	=+N14/(K14+L14+M14)
0	175	0	5378	30 73

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ARREARS RECOVERY PLAN

5

Step 4: Assigning Arrears Aging Criteria with each consumer using VLOOKUP formula.

- Create a new column with the name of "Reporting Line" along with "Months" Column.
- Assign the VLOOKUP formula in the column next to the "Reporting Line" by:
 =VLOOKUP (lookup_value, table_array, col_index_num, [range_lookup])
 =VLOOKUP (O11,\$E\$2:\$F\$2,\$2)

Month Reporting Label Unique Identifier

65.50	=+VLOOKUP(O14,\$M\$2:\$N\$7,2)	
30.73	24.1>=months late <=1000	004 /000004

ARREARS Months Reporting Label

7336	65.50	24.1>=months late <=1000
5378	30.73	
1003	1.11	
255	1.14	

Table Array: Reporting Categories

Lookup1	Reporting Categories
1	1>=months late <=3
3	3.1>=months late <=6
6	6.1>=months late <=9
9	9.1>=months late <=12
12	12.1>=months late <=24
24	24.1>=months late <=1000

lookup value

Business Planning B1131 Module 4: Strategies for Financial Management Session 2

ARREARS RECOVERY PLAN

6

Step 5: Creating PIVOT TABLE

- | First Method | Second Method |
|--|--|
| i. Click "Alt + N + V + Enter" and a new window "Create PivotTable" will open. | i. Click "Ctrl + A" to select all data of the sheet. |
| ii. Click the "Select a table or range" and select the table | ii. Click the "Insert" tab and select "Pivot Table" option |
| iii. Click the "New Worksheet" | iii. A new window "Create PivotTable" will open. |
| iv. Click "Ok" | iv. Click the "Select a table or range" and select the table |
| | v. Click the "New Worksheet" |
| | vi. Click "Ok" |

Drop Value Fields Here

PivotTable Fields

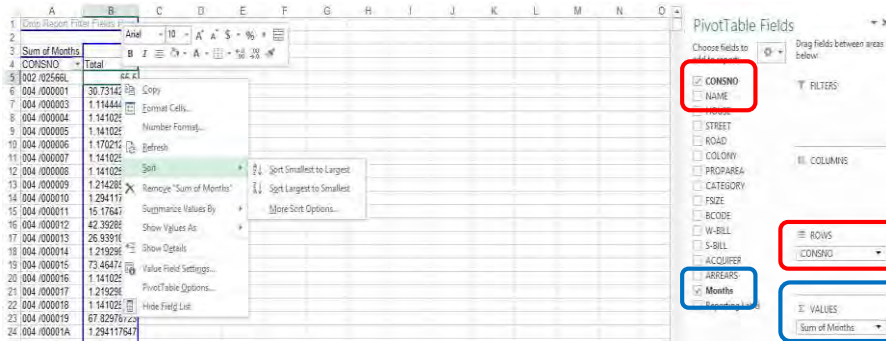
Business Planning B1131 Module 4: Strategies for Financial Management Session 2

ARREARS RECOVERY PLAN

7

Step 6: Add values to the PIVOT TABLE

- i. Drag “Consno” and “Name” to the “Rows”
- ii. Drag “Months” to the “Values” and sort it by right clicking the “Months” column and select “Sort Largest to Smallest”

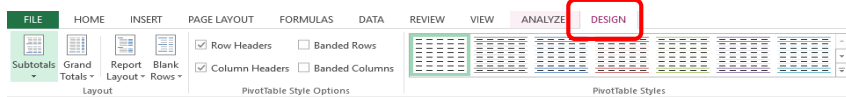


ARREARS RECOVERY PLAN

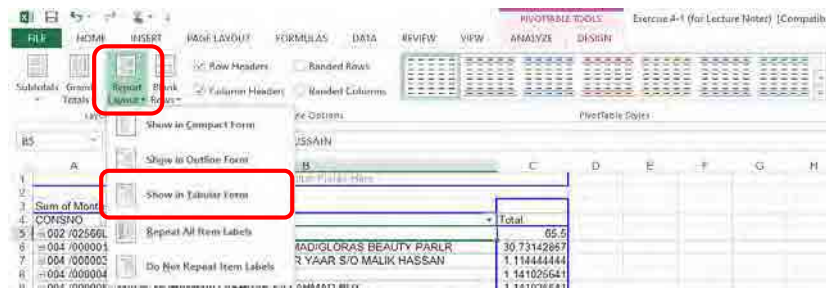
8

Step 6: Add values to the PIVOT TABLE

- iii. Click on “PivotTable Tools” then “Design” tab



- iv. Select “Show in Tabular Form” from the “Report layout”

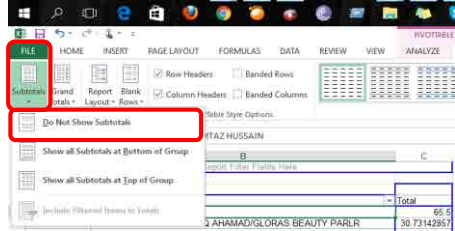


ARREARS RECOVERY PLAN

9

Step 6: Add values to the PIVOT TABLE

- v. Select "Do Not Show Subtotals" from the "Subtotals" tab.



- vi. Drag "Arrears" in the "Values"
- vii. Drag "Report Label" to the "Filter"
- viii. The PivotTable Field will look like as show in the figure



- ix. Rename the Sheet "PT-(1)"

ARREARS RECOVERY PLAN

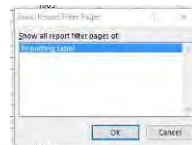
10

Step 6: Creating "Arrears Aging Reports" using the PIVOT TABLE

- i. Click on the "Analyze" tab in the "PivotTable Tools"
- ii. Select "Show Report Filter Pages" from the "Options"



- iii. Click 'Ok' to the newly opened window "Show Report Filter Pages".
- iv. This will opening separate sheets for "Arrears Aging Report" with the "Pivot Table" as per "Arrears Aging Criteria" defined in Step 2.



1) >=months late <=3	3.1) >=months late <=6	6.1) >=months late <=9	9.1) >=months late <=12	12.1) >=months late <=24	24.1) >=months late <=100
----------------------	------------------------	------------------------	-------------------------	--------------------------	---------------------------

EXERCISE

Due Collection Improvement



1. Selection of priority ward

1-1. Export of a recent billing database from the billing software

1-2. Billing database analysis:

by ward-wise (X-axis: ward, Y-axis: amount due)

by number of customers-wise (X-axis: ward, Y-axis: number of customers)

1-3. Selection of priority ward

2. Investigation of the selected priority ward

- 2-1. Age-wise analysis (X-axis: age, Y-axis: amount due)
 - 2-2. House area- wise analysis (X-axis: house area, Y-axis: amount due)
- 2-3. Selection of priority customer group

3. Due collection improvement

- 3-1. Allocation of assistant field inspectors (AFIs)
- 3-2. Setting target amount of due collection

Group discussion:

30 minutes

- Allocation of assistant field inspectors (AFIs)
- Setting target amount of due collection

Then,

Presentation: 15 minutes

**Due Collection Improvement
OJT Implementation Procedure**

Introduction

Many WASAs have faced an issue of delay or negligence of water supply/ sewerage tariff payment by many customers for long time. As a result, unpaid bills have accumulated in every WASA. It is thus critical to increase these tariff collections or reduce arrears. This paper would help WASAs conduct a billing database analysis to prepare a tariff collection improvement plan.

This paper suggests the following steps for the tariff collection improvement:

- 1) Selection of priority ward
- 2) Investigation of the selected priority ward
- 3) Due collection improvement

The details are:

No.	Items	Check
1. Selection of priority ward		
1-1	Export of a recent billing database from the billing software	
1-2	Billing database analysis: by ward-wise (X-axis: ward, Y-axis: amount due) by number of customers-wise (X-axis: ward, Y-axis: number of customers)	
1-3	Selection of priority ward	
2. Investigation of the selected priority ward		
2-1	Age-wise analysis (X-axis: age, Y-axis: amount due)	
2-2	House area- wise analysis (X-axis: house area, Y-axis: amount due)	
2-3	Selection of priority customer group	
3. Due collection improvement		
3-1	Allocation of assistant field inspectors (AFIs)	
3-2	Setting target amount of due collection	

1. Selection of priority ward

For selection of the priority ward we shall have to carry out the billing database analysis. For this purpose, the following approach is recommended.

1-1 Export of a recent billing database from the billing software

The first step is to acquire the billing database in excel file. This can be done using the ‘Export’ function from the billing database software used by all WASAs. Once the database is obtained in excel file, we can proceed for its analysis.

We are concerned with the following items in the excel file, also shown in the following figure.

- Ward Number
- House Area size
- Current Demand (monthly tariff)
- Dues (accumulated unpaid balance)

DDR	W. No.	ACCTNUMR	NAME	PROPERTY NO.	TARRIF	AREA MARLA	METER NO	METER READING STATUS	CURRENT DEMAND	DUES
Nishter Town	199	77039950		S86R M.C	DOMESTIC			N	309	26114
Nishter Town	199	65328691		S36 PNO 41/2	DOMESTIC			N	652	82040
Nishter Town	199	65338168		S51 8C S 9/B	DOMESTIC			N	652	75392
Nishter Town	199	66007935		S86 R 18 K.M.	COMMERCIAL		192	N	4378	233685
Nishter Town	199	66091808		S86R 1020 SURVEY 2001	DOMESTIC		20	N	690	70367
Nishter Town	199	66185066		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185082		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185095		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185103		S6R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185116		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		5	N	309	31733
Nishter Town	199	66185129		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185132		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185145		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185158		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185174		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185208		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185211		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185224		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185237		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733
Nishter Town	199	66185240		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3	N	309	31733

1-2 Billing Database Analysis:

Before starting the Billing database analysis, we need additional information including;

- Categorization of plot area in Small, Medium & Big Houses
- Calculation of Overdue Months
- Categorization of overdue years
- Pivot Table

Step 1: Categorization of plot area in Small, Medium and Big plots

For developing idea regarding the economic status of customers, plot area is a suitable factor. Usually in the urban areas, the lower-class people reside in houses less than 5 marlas (small) while middle class reside in house between 6 to 10 marlas (medium) and upper-class families reside in above 10 marla (big) houses.

- Create a column after “Area Marla” and name is ‘Plot Area Category’.
- In the first row, enter the following formula: =IF(G2>10,"big",IF(G2>5,"mid","small"))
- Apply it to all rows using double click on lower right corner of the cell.

DDR	W. No.	ACCTNUMR	NAME	PROPERTY NO.	TARRIF	AREA MARLA	Plot Area Category	METER NO	METER READING STATUS	CURRENT DEMAND	DUES
Nishter Town	199	77039950		S86R M.C	DOMESTIC		3 small		N	309	26114
Nishter Town	199	65328691		S36 PNO 41/2	DOMESTIC		5 small		N	652	82040
Nishter Town	199	65338168		S51 8C S 9/B	DOMESTIC		5 small		N	652	75392
Nishter Town	199	66007935		S86 R 18 K.M.	COMMERCIAL		192 big		N	4378	233685
Nishter Town	199	66091808		S86R 1020 SURVEY 2001	DOMESTIC		20 big		N	690	70367
Nishter Town	199	66185066		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185082		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185095		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185103		S6R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185116		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		5 small		N	309	31733
Nishter Town	199	66185129		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185132		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185145		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185158		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185174		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185208		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185211		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185224		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185237		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733
Nishter Town	199	66185240		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733

Step 2: Calculating the ‘Over Due Months’ for each consumer

The purpose of this step is to calculate the number of the months that the bill has been overdue for each customer.

- i) Create a new column after “Dues” and name it “Over Due Months”.
- ii) Calculate the months by using the formula: = (Dues/Current Demand). The MS Excel Formula is: =(L2/K2).
- iii) Apply the formula to the remaining rows by double clicking in the bottom right corner of this cell.

DDR	W. No.	ACCTNUMR	NAME	PROPERTY NO.	TARRIF	AREA MARLA	Plot Area Category	METER NO	METER READING STATUS	CURRENT DEMAND	DUES	OVER DUE MONTHS
Nishter Town	199	77039950		S86R M.C	DOMESTIC		3 small		N	309	26114	84.5
Nishter Town	199	65328691		S36 PNO 41/2	DOMESTIC		5 small		N	652	82040	125.8
Nishter Town	199	65338168		S51 8C S 9/B	DOMESTIC		5 small		N	652	75392	115.6
Nishter Town	199	66007935		S86 R 18 K.M.	COMMERCIAL		192 big		N	4378	233685	53.4
Nishter Town	199	66091808		S86R 1020 SURVEY 2001	DOMESTIC		20 big		N	690	70367	102.0
Nishter Town	199	66185066		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185082		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185095		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185103		S6R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185116		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		5 small		N	309	31733	102.7
Nishter Town	199	66185129		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185132		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185145		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185158		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185174		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185208		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185211		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185224		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185237		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7
Nishter Town	199	66185240		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7

Step 3: Categorization of Over Due Years

The purpose of this step is to calculate the number of the months that the bill has been overdue for each consumer.

- i) Create a new column after “Overdue Months” and name it “Over Due Years”.
- ii) Calculate the overdue years by using the formula: =IF(M2>24,">2 yr",IF(M2>12,"1-2 yr","0-1 yr"))

- iii) Apply the formula to the remaining rows by double clicking in the bottom right corner of this cell.

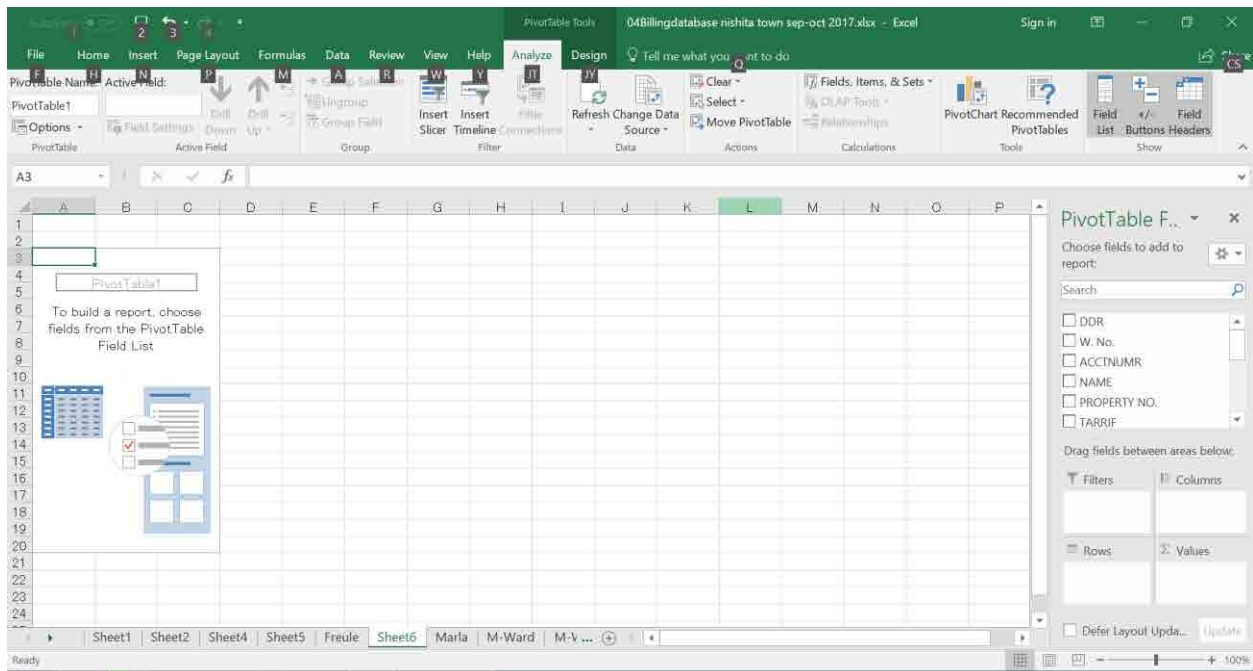
DDR	W. No.	ACCTNUMR	NAME	PROPERTY NO.	TARRIF	AREA MARLA	Plot Area Category	METER NO	METER READING STATUS	CURRENT DEMAND	DUES	OVER DUE MONTHS	OVER DUE YEARS
Nishtar Town	199	77039950		S86R M.C	DOMESTIC		3 small		N	309	26114	84.5	>2 yr
Nishtar Town	199	65328691		S36 PNO 41/2	DOMESTIC		5 small		N	652	82040	125.8	>2 yr
Nishtar Town	199	65338168		S51 8C S 9/B	DOMESTIC		5 small		N	652	75392	115.6	>2 yr
Nishtar Town	199	66007935		S86 R 18 K.M.	COMMERCIAL		192 big		N	4378	233685	53.4	>2 yr
Nishtar Town	199	66091808		S86R 1020 SURVEY 2001	DOMESTIC		20 big		N	690	70367	102.0	>2 yr
Nishtar Town	199	66185066		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185082		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185095		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185103		S6R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185116		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		5 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185129		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185132		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185145		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185158		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185174		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185208		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185211		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185224		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185237		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr
Nishtar Town	199	66185240		S86R 7 S SITTARA SURVEY 2001	DOMESTIC		3 small		N	309	31733	102.7	>2 yr

Then we will go into an analysis for the selection of priority ward.

Step 4: Creating Pivot Table

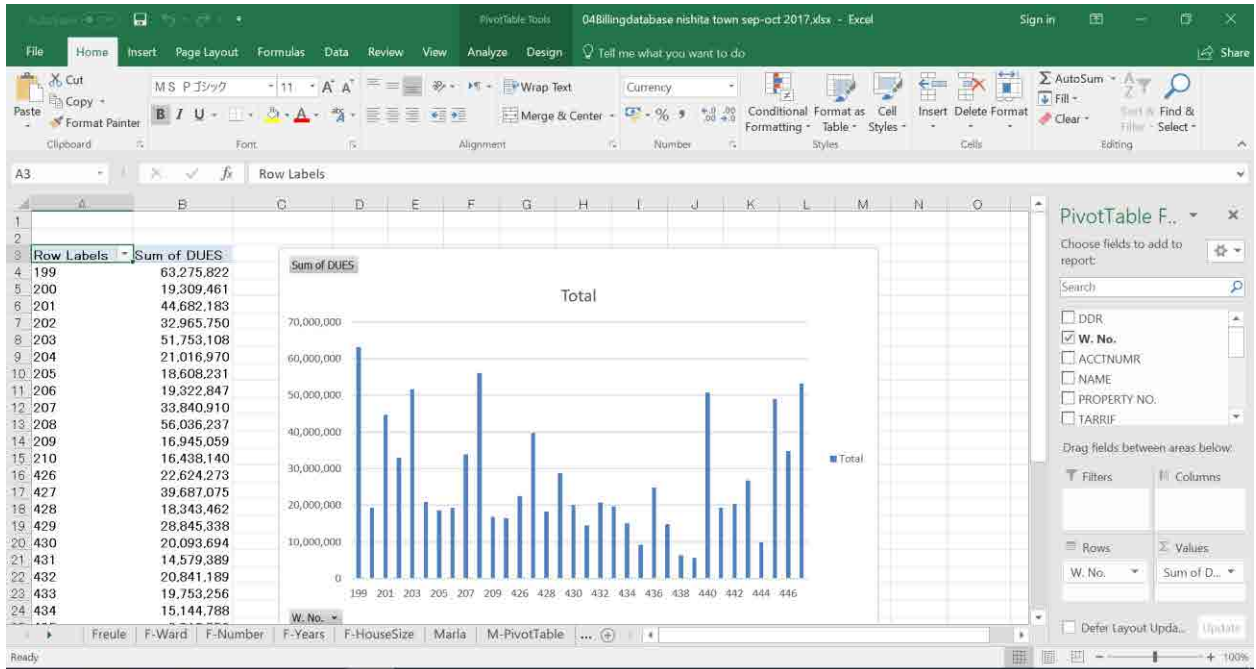
- i) Press “Ctrl + A” to select all data on excel sheet.
- ii) Press “Alt + N + V + Enter” and a new window “Create PivotTable” will open.
- iii) Click the “New Worksheet”
- iv) Click “Ok”

Now the pivot table has been created in a separate sheet.



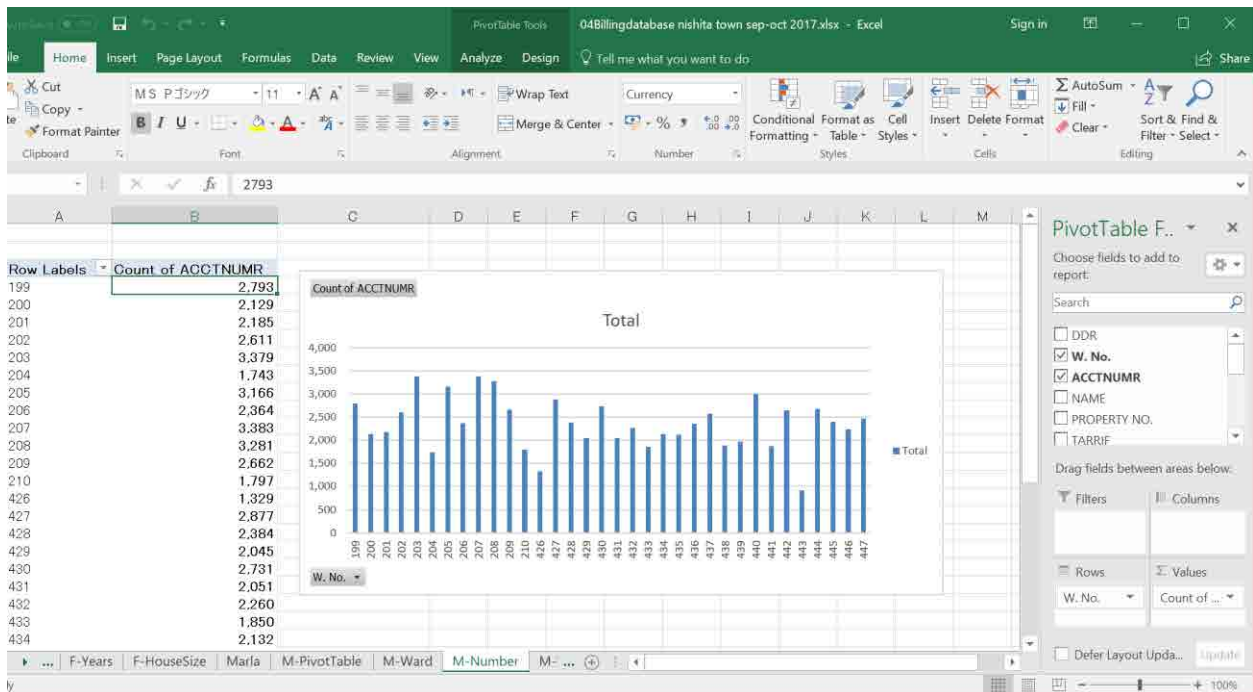
Step 5: Billing database analysis by ward-wise (X-axis: ward, Y-axis: amount due)

- Drag “W.No” to the Row Labels box.
- Drag “Dues” to the Values box, and right-click the “Dues” column and select “Value Field Setting”.
- Click on “Sum” and press ‘Enter’.
- Go to the “Insert Tab” and select “Recommended Charts”.
- Now you are able to see which ward has highest due amount. In this case ward’199’ has the highest due amount.



Step 6: Billing database analysis by number of customers-wise (X-axis: ward, Y-axis: number of customers)

- Go back to the Database and repeat “Creating the PIVOT Table”.
- Drag the “W.No” to the Row Labels box.
- Drag “ACCTNUMR” to the Values box, go to “Value Field Settings” by right-clicking, and select “Count”.
- Go to the “Insert Tab” and select “Column Charts”.



1-3. Selection of priority ward

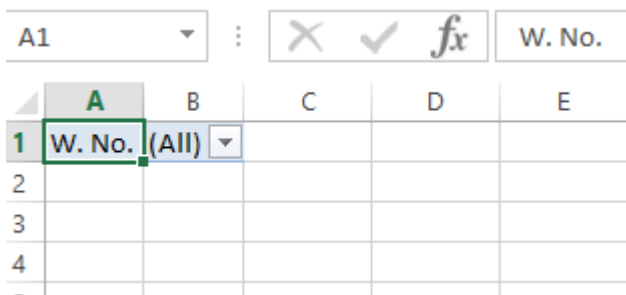
The above analysis shows that Ward number “199” has the highest amount in comparison to other wards. Therefore, this ward should be focused as the recovery can be equivalent to the other two or three wards.

2. Investigation of the selected priority ward

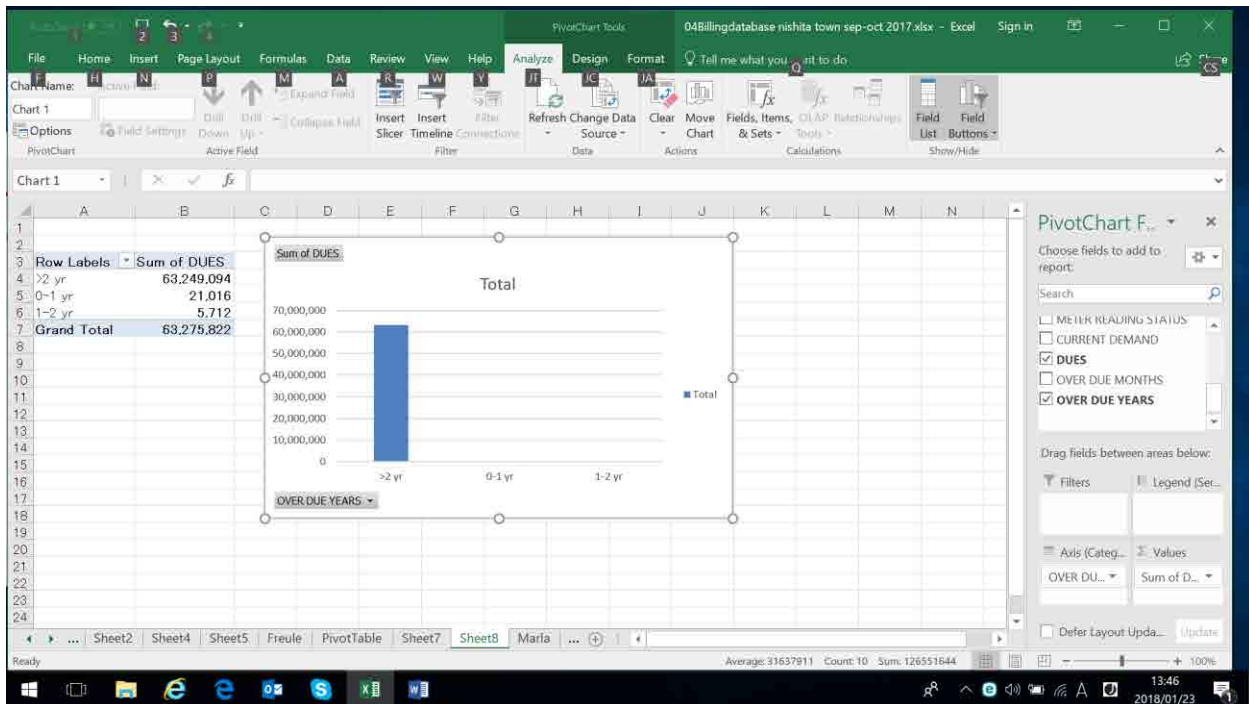
Next, we will investigate characteristics of the selected ward, 199, to target customer groups in the ward.

2-1 Age-wise analysis (X-axis: age, Y-axis: amount due)

- Go back to the database and repeat the “Creating the PIVOT Table”.
- Drag W. No to Filters



- From the “All” dropdown menu, select 199 and click “ok”. Now ward 199 data will be used for analysis.
- Drag the “Overdue years” to Row Labels box.
- Drag “Dues” to Values box, go to the “Value Field Settings” by right-clicking, and select Sum.
- Go to the “Insert Tab” and select “Column Charts”.



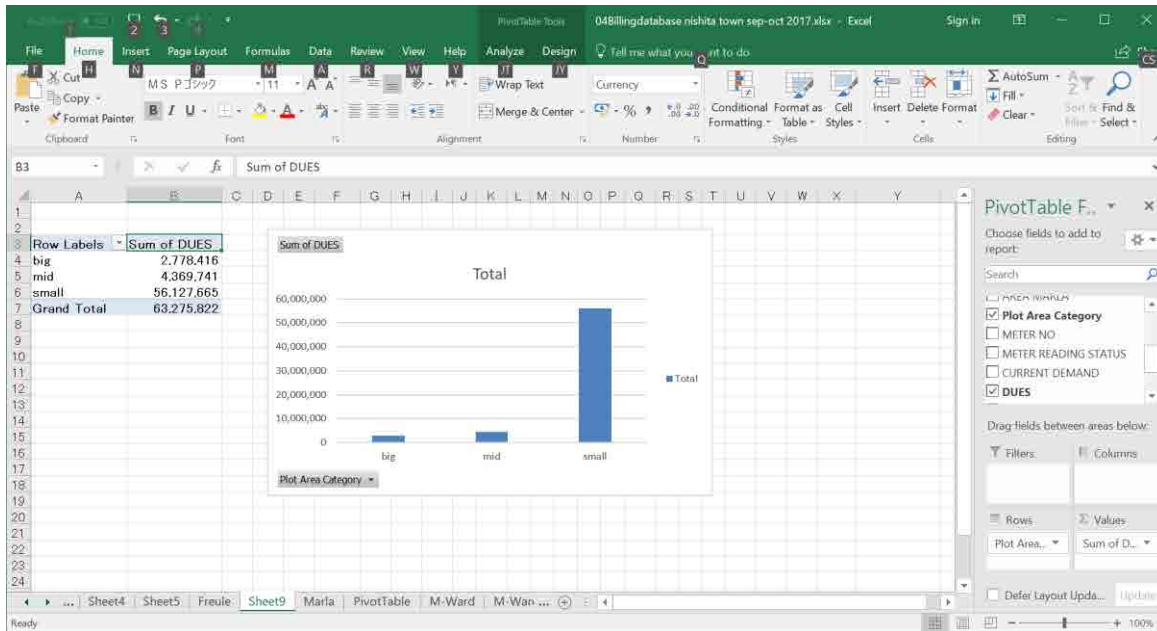
2-2 House area- wise analysis (X-axis: house area, Y-axis: amount due)

- Go back to the database and repeat the “Creating the PIVOT Table”.
- Drag W. No to Filters

A1	W. No.
1	W. No. (All)
2	
3	
4	

- From the “All” dropdown menu, select 199 and click “ok”. Now ward 199 data will be used for analysis.
- Drag the “Plot Area Category” to Row Labels box.

- Drag “Dues” to Values box, go to the “Value Field Settings” by right-clicking, and select Sum.
- Go to the “Insert Tab” and select “Column Charts”.



2-3 Selection of priority customer group

The analysis results suggest that most of the due amount is overdue for more than two years and the customer group with small houses makeup significant portion of due amount. Therefore, we should focus on small plot area customers with more than two (2) year overdues of the ward 199.

3. Due collection improvement

Group discussion will be done. The agenda would be:

- 3-1. Allocation of assistant field inspectors (AFIs)
- 3-2. Setting target amount of due collection

Actual water consumption volume and tariff revision in Sudan

January 25, 2018

1

Introduction

- Groundwater of the Gash Basin is the main source of water for Kassala city.
- It has been reported that groundwater level declined.
- It is necessary for the residents to conserve water and pay water production costs.
- The Local Government in Tokyo sets: the more volume they use, higher water tariff rates per M3 they have to pay.

2

Current tariff, customer numbers and monthly revenues

- The current tariff in Kassala City is a flat rate and customers pay a monthly fixed rate no matter how much water they consume.
- The following table shows: categories, year 2012-3 tariff, customer number and monthly revenues.
- The monthly revenues present a cash income amount if all the customers pay their tariffs.

3

Current tariff, customer number and monthly revenues

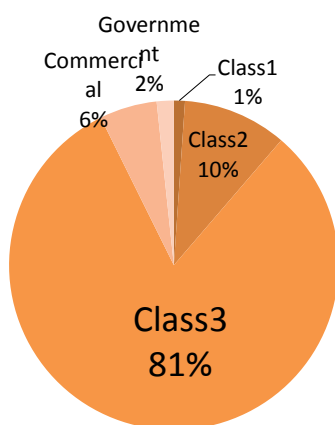
Categories	Class	Inch's/ Type	Year 2012-3 Tariff	Customer Number as of Dec. 2012			Monthly Revenue (SDG) (In case of 100% correcting rate)
				East Office	West Office	Total	
Households							
	Class1	1	40	286	97	383	15,320
	Class2	3/4	35	3,352	250	3,602	126,070
	Class3	1/2	20	16,263	12,428	28,691	573,820
Commercial							
	A	Small Water shops, Factories	280	6	14	20	5,600
	B	Restaurants, Hotels	80	387	349	736	58,880
	C	Small Juice Shops	45	719	518	1,237	55,665
Government							
	A	Government Building School, Hospital, Hall	80-550	180	160	340	27,200
	B	Schools which do not have commercial buildings	45	191	58	249	11,205
Total				21,384	13,874	35,258	873,760

4

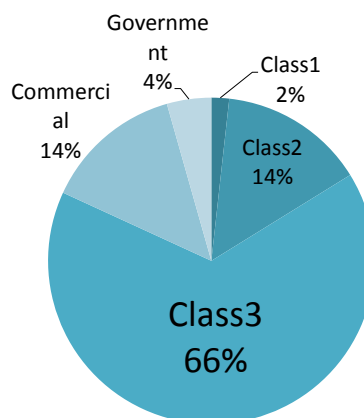
- In SWC East and West Offices, the Class 3 customers accounted for 81% and 66% in terms of customer numbers and revenues, respectively.
- Tariff rate increase of the Class 3, 2, Commercial A, B, C, Government A would generate a substantial revenue increase.

5

Number of customer in Kassala City



Revenues in Kassala City



6

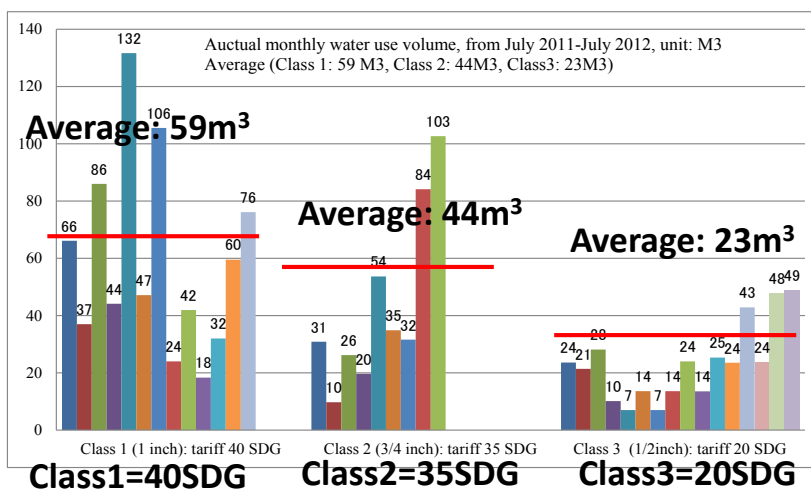
Installation of water meters to measure actual consumption volume of each customer from Jul. 2011 to Jul.2012

In 2011, SWC staffs installed water meters to keep records of each customer water consumption volume of private houses, offices, hotels, restaurants and others.



7

Actual consumption volumes of “Domestic”



8

Actual Consumption volumes of “Commercial” and “Government”

Categories	Class	Actual Monthly M3	Year 2012-3 Tariff	Actual Unit Payment (SDG)
Commercial A				
	Gas station 1	98	280	2.86
	Hotel 1	125	280	2.24
	Cow farmer 1	338	280	0.83
	Foot ball club 1	572	280	0.49
	College 1	596	205	0.34
Commercial B				
	Small hotel 1	83	80	0.96
	Small hotel 2	104	80	0.77
	Restaurant 1	131	80	0.61
	Small hotel 3	145	80	0.55
	Restaurant 2	341	157	0.46
	Restaurant 3	187	80	0.43
Government A				
	University 1	301	280	0.93
	Hospital 1	1777	550	0.31
	Office 1	336	80	0.24
	High school 1	393	80	0.20
	Hall 1	1305	160	0.12
	School 2	776	80	0.10

9

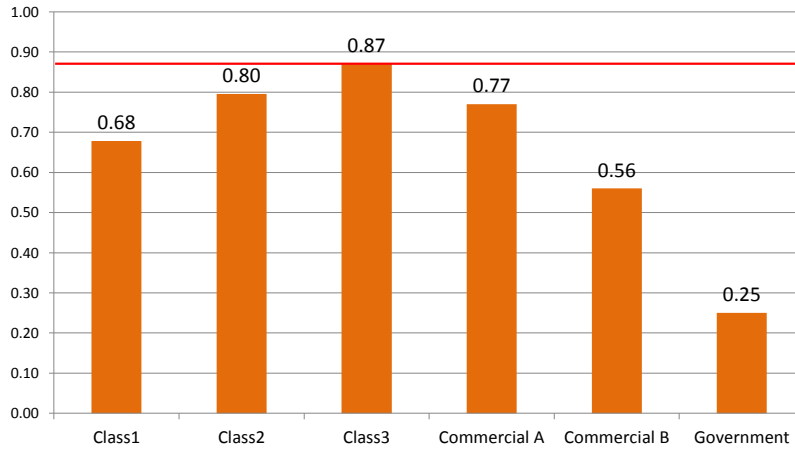
Summary of monthly consumption, tariff and actual unit payment per M³

Categories	Class	Customer No.	Average M3	Year 2012-3 Tariff	Actual Unit Payment (SDG/m ³)
Households					
	Class1	13	59	40	0.68
	Class2	9	44	35	0.80
	Class3	16	23	20	0.87
Commercial				Ave. Tariff	
	A	5	346	280	0.77
	B	6	165	93	0.56
	C	0	0	0	-
Government				Ave. Tariff	
	A	6	815	80-550	0.25
	B	0	0	0	-
Total		55			

10

Actual unit payment (SDG) per M³ in Kassala City

The "Commercial" and "Government" unit payment rates per M3 should be equal or more than that of the Class 3, 0.87 SDG.



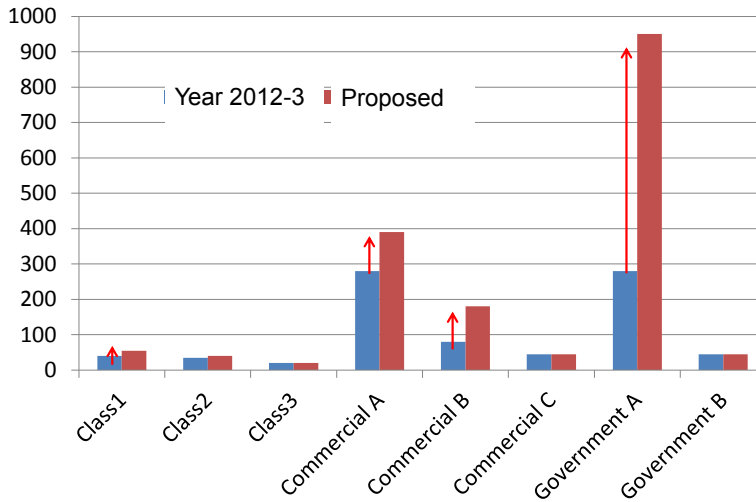
11

Tariff revision proposal

الريادات للمدينة لمرحلة Revenue	الترجيح Proposed Tariff/m ³	الترجيح Proposed Tariff	الترجيح Year 2012-3 Tariff/m ³	الترجيح Year 2012-3 Tariff	متوسط الاستهلاك (م ³) للمدينة في الفترة 2011-2012 Average Monthly m ³	عدد العملاء أو المشتركين في شهر ديسمبر 2012 Customer Number as of Dec-2012	بوصة Inch's	الفئات أو التصنيفات Categories
21,065	0.93	55	0.68	40	59	383	واحد	للمدينة لدرجة 1
144,080	0.91	40	0.8	35	44	3,602	الشراب	لدرجة 2
573,820	0.87	20	0.87	20	23	28,691	نصف	لدرجة 3 التجاري
7,800	1.13	390	0.77	280	346	20	مزارع دواجن والقار، مناطق تجارية من غيرة ومصانع	(أ)
132,480	1.09	180	0.56	80	165	736	مصانع فنادق	(ب)
55,665		45		45		1,237	مناطق تجارية لبيع الخضراوات والفواكه	(ج)
323,000	1.17	950	0.25	80-550	815	340	مباني حكومية	لحكومة (أ)
11,205		45		45		249	المدارس التي ليس لها مالت تجارية	(ب)
1,269,115						35,258		لمرحلة

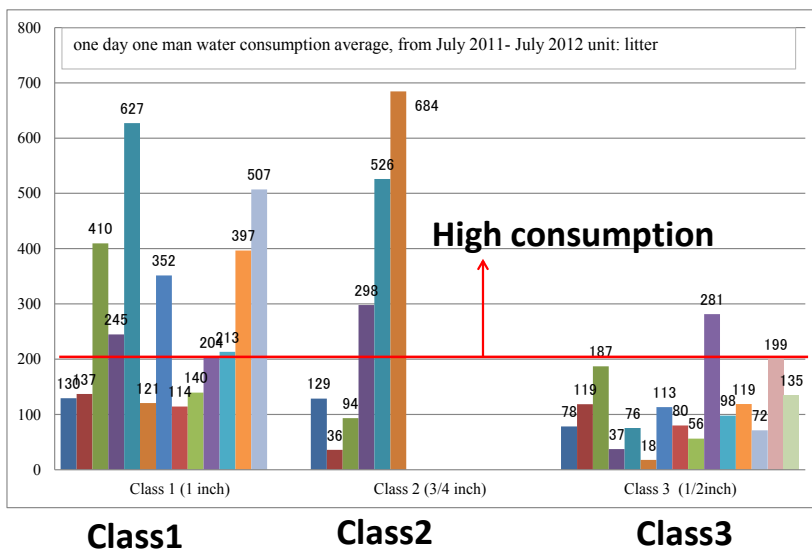
12

Current and proposed Tariff (SDG) in Kassala City



13

One day one man water consumption average of "Domestic", unit: litter



14

Recommendation

1. It **is necessary to revise the year 2012-3 tariff**, by setting higher rates for the large volume consumers to make the tariff fair.
2. Higher rates would enable the large volume consumers to give an **incentive to conserve water**.
3. Some households consume more than 200 liters in per day per person. Others use more than 600 liters. It is very necessary for the SWC to increase awareness of water conservation, especially in summer.
4. After the tariff revision, it will be necessary to install **water meters for the large volume consumers**, to begin with the "Government". Because there is much difference in monthly water consumption among the consumers of "Government".

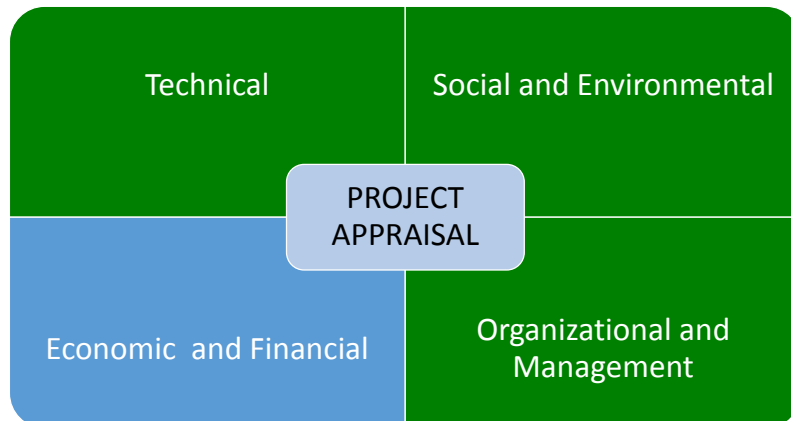


بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ
In the name of Allah, the Beneficent, the Merciful

Business Planning

Capital Budgeting, Financial and Economic Appraisal

Asif Iqbal
Financial Management
Specialist



Financial Appraisal:
CBA based on purely financial terms

Economic Appraisal:
CBA includes societal perspective



FINANCIAL APPRAISAL

3

- **Appraisal on purely financial terms**
- **Incremental financial benefits & costs to the project & the IRR or NPV**
- **Methods of financial appraisal (discounted cash flow techniques) – consider time value of money**
 - Net Present Value (NPV)
 - Internal Rate of Return (IRR)
 - Benefit Cost Ratio (BCR)

These differing appraisal techniques may give contradictory conclusion



LEARNING FOCUS

4

- 1) Understanding of Technique
- 2) Calculation Methods
- 3) Interpretation of Results and how to base decisions on Results.



Which Project will you choose?

Table 1: Expected Net After-Tax Cash Flows

Year (t)	Project A	Project B
0	-\$2,000	-\$2,000
1	1,000	200
2	800	600
3	600	800
4	200	1,200

Project A: Net Cash Inflow of \$ 600

Project B: Net Cash Inflow of \$ 800

TIME VALUE OF MONEY

*The value of money decreases as the time passes.
Costs and benefits occur at different point of time.
How to compare benefits with costs ?*

- a. Compounding $F=P(1+r)^n$ → Future Value
- b. Discounting $P=F/(1+r)^n$ → Present Value

Net Present Value (NPV)

"The revenues and costs of a project are estimated and then are discounted and compared with the initial investment."

Preferred option - highest positive NPV
Reject projects with negative NPVs

Disadvantages of NPV

Rank projects in order of ascending NPV (smaller project with lower NPV might be more attractive due to higher ratio of discounted benefits to costs)

Example: NPV

Example: NPV analysis

Using the project cash flows presented in Table 1, compute the NPV of each project's cash flows and determine for each project whether it should be accepted or rejected. Assume that the cost of capital is 10%.

Table 1: Expected Net After-Tax Cash Flows

Year (<i>t</i>)	Project A	Project B
0	-\$2,000	-\$2,000
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2	800	600
3	600	800
4	200	1,200

Example: NPV

Example: NPV analysis

Using the project cash flows presented in Table 1, compute the NPV of each project's cash flows and determine for each project whether it should be accepted or rejected. Assume that the cost of capital is 10%.

Table 1: Expected Net After-Tax Cash Flows

Year (t)	Project A	Project B
0	-\$2,000	-\$2,000
1	1,000	200
2	800	600
3	600	800
4	200	1,200

NPV:

Project A: \$ 157.6

Project B: \$ 98.4

Internal Rate of Return (IRR)

“The IRR is the discount rate that, when applied to cash inflows of a project, sets them equal to the initial investment”

Preferred option - with the IRR most in excess of a specified rate of return

IRR of 10% means that with a discount rate of 10%, the project breaks even

Interest rate used for discounting future cash flows to compute present value of those cash flows.

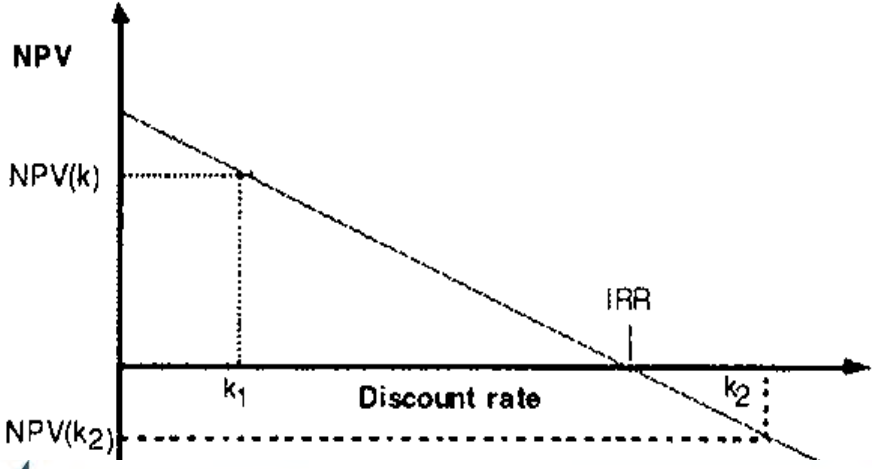
IRR exceeds the hurdle cost of capital - discount rate, the project is accepted

Disadvantage of using IRR method

Not suitable for ranking of competing projects

Two projects may have same IRR but different NPVs when time horizon differs

NPV and Discount Rate



IRR FORMULA

$$IRR = r_a + \frac{NPV_a (r_b - r_a)}{(NPV_a - NPV_b)}$$

r_a = lower discount rate

r_b = higher discount rate

NPV_a = NPV using the lower discount rate

NPV_b = NPV using the higher discount rate

Example: IRR

Table 1: Expected Net After-Tax Cash Flows

<i>Year (t)</i>	<i>Project A</i>	<i>Project B</i>
0	-\$2,000	-\$2,000
1	1,000	200
2	800	600
3	600	800
4	200	1,200



Example: IRR

Table 1: Expected Net After-Tax Cash Flows

<i>Year (t)</i>	<i>Project A</i>	<i>Project B</i>
0	-\$2,000	-\$2,000
1	1,000	200
2	800	600
3	600	800
4	200	1,200

IRR:
Project A: 14.5%
Project B: 11.8%



Benefit Cost Ratio

Benefit Cost Ratio (BCR) or Profitability Index (PI)
“The BCR is the discounted net revenue divided by the initial investment”

Preferred option - ratio most in excess of 1
Project with a BCR of less than 1 should generally not proceed
Advantage is simplicity of the method

Disadvantage of using BCR method
Suboptimal decision as a project with higher BCR will be selected over a project with lower BCR even when the latter project has the capacity to generate much greater economic benefits because it has a higher NPV value and involves greater scale

Example: BCR

Table 1: Expected Net After-Tax Cash Flows

Year (t)	Project A	Project B
0	-\$2,000	-\$2,000
1	1,000	200
2	800	600
3	600	800
4	200	1,200

Example: BCR

Table 1: Expected Net After-Tax Cash Flows

Year (t)	Project A	Project B
0	-\$2,000	-\$2,000
1	1,000	200
2	800	600
3	600	800
4	200	1,200

BCR/PI:
Project A: 1.08
Project B: 1.05



Exercise1: Financial Appraisal of PFI Panel Installation.

	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
	0	1	2	3	4	5
Investment Expenditure						
Maintenance Expenditure						
Electricity Charge Saving						
Net Cash flows						

Calculate NPV, IRR & BCR?



Exercise1: Financial Appraisal of PFI Panel Installation.

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	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
	0	1	2	3	4	5
Investment Expenditure	(2,000,000)					
Maintenance Expenditure			(140,000)		(140,000)	-
Electricity Charge Saving		660,000	660,000	660,000	660,000	660,000
Net Cash flows	(2,000,000)	660,000	520,000	660,000	520,000	660,000

Calculate NPV, IRR & BCR?



Exercise1: Financial Appraisal of PFI Panel Installation.

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	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
	0	1	2	3	4	5
Investment Expenditure	(2,000,000)					
Maintenance Expenditure			(140,000)		(140,000)	-
Electricity Charge Saving		660,000	660,000	660,000	660,000	660,000
Net Cash flows	(2,000,000)	660,000	520,000	660,000	520,000	660,000

NPV= 178,573
IRR= 15.56%
BCR= 1.09



Sensitivity Analysis

- Possible to identify those parameters and assumptions to which the outcome of the analysis is most sensitive
- Challenges the robustness of the results to changes in the assumptions made (i.e. discount rate, time horizon, estimated value of costs and benefits, etc.)

Scenario Analysis

- Scenarios are formulated: best case, worst case, etc.
- Potential values assigned for each cost and benefit variable

Case Study- Water Bottling Plan in Faisalabad

1. Please review and rationalize (if any) assumptions for Water Bottling Plant as used by WASA Fsb and mentioned in Case.
2. Determine initial investment, revenues and expenditures based on revised assumptions considering life of the project is 5 years.
3. Perform Financial Appraisal including NPV, IRR and BCR.
4. Perform sensitivity analysis for 10% change in production and 10% change in electricity Cost.

Economic Appraisal

Economic soundness of the project - **Societal Perspective**

Considers non-market impacts

- Externality: Cost or benefit that affects a party that did not choose to incur that cost or benefit.
- Example: Environmental degradation by a dam or improved income by construction of Road

Frequently used analytical techniques:

- Cost Benefit Analysis (CBA): Impacts can be quantified in monetary terms
- Cost Effectiveness Analysis (CEA): Impacts cannot be quantified in monetary terms



Economic Appraisal

1. Identify Benefits and Costs to the Society e-g
 - i. Decrease in Diarrhea.
 - ii. Time and effort savings
2. Quantify these Benefits and Costs.
3. Add them into Financial Cash flows.
4. Calculate ENPV, EIRR & BCR.



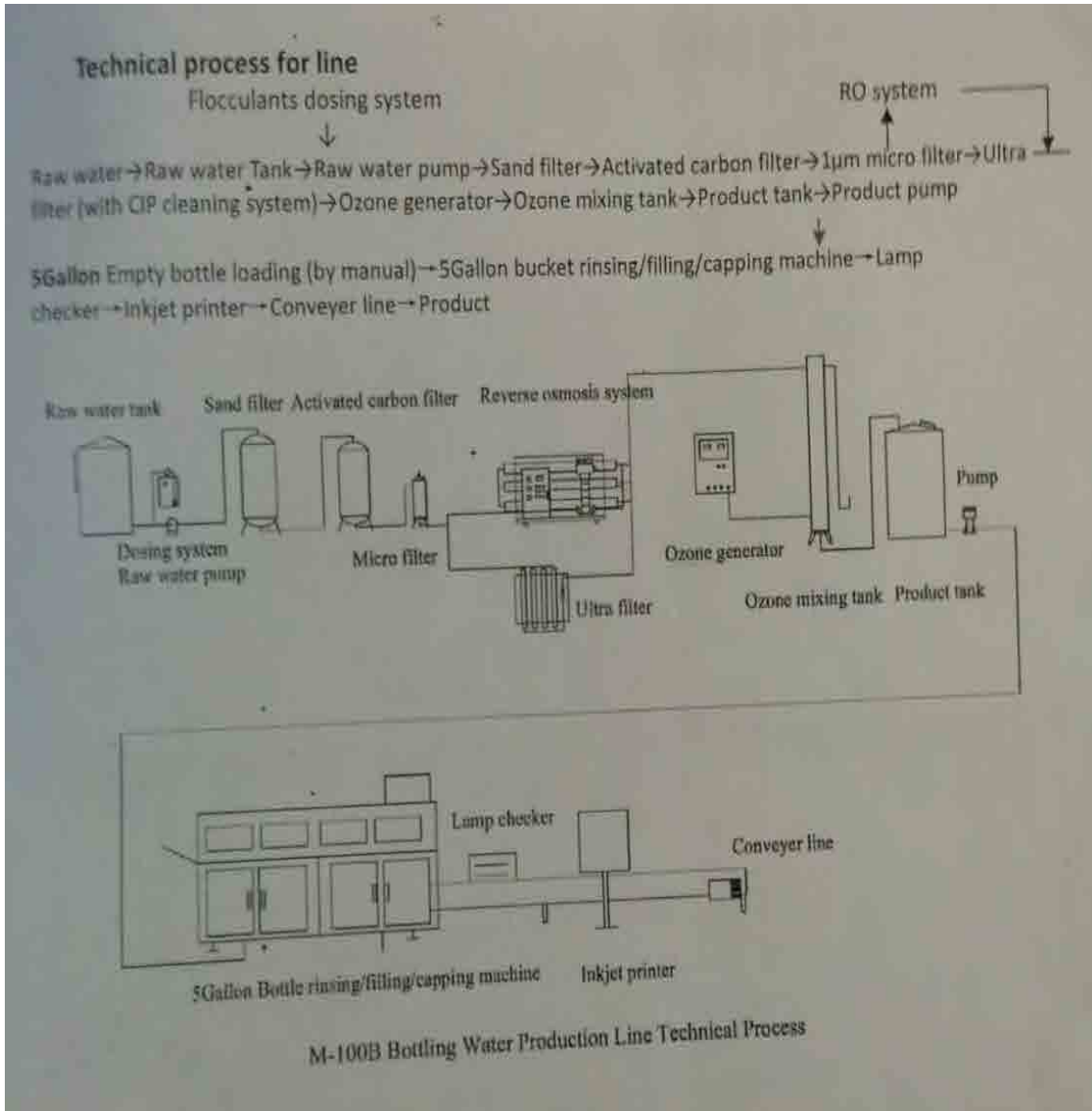
THANK YOU!



Case Study: Water Bottling Project of WASA Faisalabad

WASA Faisalabad has built a Water Bottling Plant to target Faisalabad consumers. Because, 1) the underground water is brackish, 2) the WASA assumed people would choose bottled water as it is safe, healthful, taste refreshing, and available at various prices and sizes, having no chlorine taste or odor.

Design of the Project: Given below picture is showing the complete technical process of the water bottling project.



Financial Forecast of Project

The following table shows an assumption of WASA Faisalabad when they started the new business in August 2015.



Unit: Rs.	Assumptions / Inputs
Initial Investment	8,600,000
Production per day	1,500
Working days per month	22
Unit price	63
Workers' salary	Rs. 40,000 x 10 workers x 2 shift
Electricity	Rs. 3 per bottle
Membrane cartridge	44,640 for 6 month
Transportation	Rs.8.9 per bottle
Empty bottle per cost	Rs. 6.12 per bottle
PVC bottle cap	Rs. 4.8 per unit
Admini. staff salary	Rs. 50,000 x 5 staffs

Now assume you are also planning to deploy a Water Bottling Plant in your city and add a revenue stream.

Assignment:

- Please review and rationalize (if any) assumptions for Water Bottling Plant as mentioned above.
- Forecast initial investment, revenues and expenditures assuming life of the project is 5 years.
- Perform Financial Appraisal including NPV, IRR and BCR.
- Perform sensitivity analysis for 10% change in production and 10% change in electricity Cost.



Financial Evaluation of Water Bottling Plant

Assumptions/ inputs	Monthly (Rs.)	Annual (Rs.)
---------------------	---------------	--------------

A. Review and Rationalization of Assumptions:

Initial Investment:

Investment to build the factory

Revenue:

production per day
 working days per month
 unit price
Total Revenue

Expenditures:

workers' salary
 electricity
 membrane cartridge
 transportation
 empty bottle per cost
 PVC bottle cap
 admini. staff salary
Total expenditure
Surplus/ (Loss)

B. Annual Cashflows:

Description	Years					
	0	1	2	3	4	5
Initial Investment						
Annual Surplus/ (Loss)						
Cashflows						

C. Financial Appraisal

NPV @ 12%

IRR

Simulation Exercise: Financial Appraisal of investment on Power Factor Improvement Panel.

Power Factor Improvement

POWER FACTOR is the ratio between the useful (true) power (kW) to the total (apparent) power (kVA) consumed by electrical equipment such as motors and lights. It is an indicator of how efficiently electrical power is converted into useful work output. The ideal power factor is as close to 1.0 as possible. Anything less than the value means that extra power is required to achieve the actual power used.



Figure 1 Capacitor bank inside electrical control pan

Sample of Electric Bills for Comparison

The WASA used to pay about 55,000Rs/month for power factor penalty before its installation.

WASA COMPANY - ELECTRICITY CONSUMER BILL (RMB)											
Service-Our Price		DATE	PERIOD	REMARKS	DATE	DATE	DATE	DATE	DATE	DATE	DATE
172 0011100 U	B26 (153)	194.00	27517200011002		05 JUL 13	11 JUL 13	25 JUL 13				
<p>Power Factor = 0.74</p> <p>[Power Factor] Worse than 0.9 → Penalty</p>											
<p>[Low Power Factor Penalty] Penalty given based on Power Factor</p>											

Before Power Factor

WASA COMPANY - ELECTRICITY CONSUMER BILL (RMB)											
Service-Our Price		DATE	PERIOD	REMARKS	DATE	DATE	DATE	DATE	DATE	DATE	DATE
172 0011100 U	B26 (153)	194.00	27517200011002		05 JUL 13	11 JUL 13	25 JUL 13				
<p>Power Factor = 0.98</p> <p>[Power Factor] Better than 0.9 → No Penalty</p>											
<p>[Low Power Factor Penalty] No Penalty</p>											

After Power Factor



WASA Lahore will install the PFI panel at the end of December 2016 to reduce the power factor penalty.

- Investment Expenditures of the PFI panel the year 2016: Rs. 2,000,000
- Maintenance Cost : 7% of installation cost every two (2) years (at the year 2018 and 2020)
- Power factor penalty saving from the year 2017 to 2021: Rs. 55,000/month

Please fill out the following table. Then calculate NPV at interest rate, 12% and IRR.

Cost and benefit analysis, Rate of return on investment of the PFI, November 24, 2016, name _____

	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Investment expenditures						
Maintenance expenditures						
Electricity charge saving (no penalty payment)						
Total (benefit- cost)						
Present values at interest rate, 12%						

IRR =

NPV at interest rate, 12% =

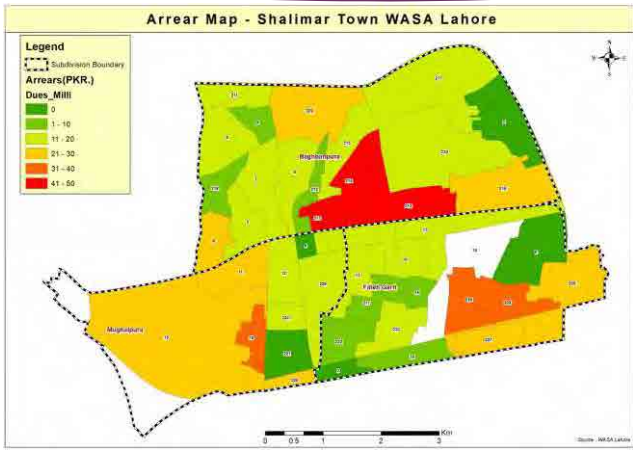


Business Planning

Day 7

GIS activity to identify potential area for recovery

output Maps for Arrear Recovery Plan



output Maps for Arear Recovery Plan



output Maps for Arear Recovery Plan



output Maps for Arear Recovery Plan





In the name of Allah, the Beneficent, the Merciful بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

MODULE - 5

Session 2-3

BUSINESS PLAN FORMULATION and IMPLEMENTATION



Layout of Session 3

1

- **Session 3– Module 1**
 - Vision & Mission
 - SWOT Analysis
 - GAP Analysis & Target Setting
- **Session 3– Module 2**
 - **3 Years** Performance Improvement Plan
 - Water Supply
 - Sewerage & Drainage
 - Energy Management
 - **3 Years** Communication Plan



Layout of Session 2-3

1

- **Session 3 (02:00~03:00) – Module 3**
 - 3 Years Training Plan with Budget
- **Session 3 (03:00~04:00) – Module 3**
 - 3 Years Performance Improvement Plan of Revenue Management System

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THANKS

添付資料 4.34

2017 年秋期研修カリキュラム

Curriculum for Fall 2017

Course	Module	Time (days)	Methodology	Evaluation (points)				Passing marks
				Attendance	Participation	Assignments	Total	
O&M of Tube Well and Pump Facility	1. O&M of Water Distribution System	4	<ul style="list-style-type: none"> • Lectures • Practical Training 	20	0	80	100	50
Leakage Detection	1. Basic knowledge of Leakage Prevention Work	1	<ul style="list-style-type: none"> • Lectures 	20	0	80	100	50
	2. Leakage detection and repair at the site (OJT)	1	<ul style="list-style-type: none"> • Practical Training 					
	3. Install & operation of the equipment at the site (OJT)	1	<ul style="list-style-type: none"> • Practical Training 					
	4. Visit to pipe factory	1	<ul style="list-style-type: none"> • Practical Training 					
	Action Plan	1	<ul style="list-style-type: none"> • Practical Training 					
O&M of Sewer And Storm Water Drainage	1. Safety control and measure for sewerage and drainage	1	<ul style="list-style-type: none"> • Lectures • Practical Training 	25	0	75	100	50
	2. Operation and maintenance of drainage system	1	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Operation and maintenance of sewer system	3	<ul style="list-style-type: none"> • Lectures • Practical Training 					
O&M for Electrical Equipment	1. Electrical Panel and Instrumentation Equipment	5	<ul style="list-style-type: none"> • Lectures • Practical Training 	30	0	70	100	50
	2. Generators		<ul style="list-style-type: none"> • Lectures • Practical Training 					

O&M for Mechanical Equipment	1. Centrifugal Pumps, Induction Motors and Valves	5	<ul style="list-style-type: none"> • Lectures • Practical Training 	30	0	70	100	50
	2. Chlorination and Filtration System		<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Water Meter Selection and Maintenance		<ul style="list-style-type: none"> • Lectures • Practical Training 					
	4. Heavy Machines		<ul style="list-style-type: none"> • Lectures • Practical Training 					
Asset Management	1. Introduction of Asset Management and Asset Management Information System (AMIS)	1	<ul style="list-style-type: none"> • Lectures • Practical Training 	25	0	75	100	70
	2. Risk Management of Asset	1	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Asset Database Analysis	1	<ul style="list-style-type: none"> • Lectures 					
	4. Asset Replacement Plan		<ul style="list-style-type: none"> • Practical Training 					
	5. Asset Condition Assessment (including field work)	2	<ul style="list-style-type: none"> • Practical Training 					
	6. GIS	1	<ul style="list-style-type: none"> • Practical Training 					
Business Planning	1. Business Planning & GAP analysis	1.5	<ul style="list-style-type: none"> • Lectures • Practical Training 	10	10	80	100	70
	2. Strategies for Service Delivery Improvements	2.5	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Strategies for Human Resource Development	1.5	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	4. Strategies for Financial Management	1.5	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	5. Business plan formulation and implementation	1	<ul style="list-style-type: none"> • Lectures • Practical Training 					

添付資料 4.35

2018 年春期研修カリキュラム

Curriculum for Spring 2018

Course	Module	Time (days)	Methodology (%)	Evaluation (points)				Passing marks
				Attendance	Participation	Assignments	Total	
O&M of Tube Well and Pump Facility	1. O&M of Water Distribution System	4	<ul style="list-style-type: none"> • Lectures • Practical Training 	20	0	80	100	50
Leakage Detection	1. Basic knowledge of Leakage Prevention Work	1	<ul style="list-style-type: none"> • Lectures 	20	0	80	100	50
	2. Leakage detection and repair at the site (OJT)	1	<ul style="list-style-type: none"> • Practical Training 					
	3. Install & operation of the equipment at the site (OJT)	1	<ul style="list-style-type: none"> • Practical Training 					
	Action Plan	1	<ul style="list-style-type: none"> • Practical Training 					
O&M of Sewer And Storm Water Drainage	1. Safety control and measure for sewerage and drainage	1	<ul style="list-style-type: none"> • Lectures • Practical Training 	25	0	75	100	50
	2. Operation and maintenance of drainage system	1	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Operation and maintenance of sewer system	3	<ul style="list-style-type: none"> • Lectures • Practical Training 					
O&M for Electrical Equipment	1. Electrical Panel and Instrumentation Equipment	5	<ul style="list-style-type: none"> • Lectures • Practical Training 	15	0	85	100	50
	2. Generators		<ul style="list-style-type: none"> • Lectures • Practical Training 					

O&M for Mechanical Equipment	1. Centrifugal Pumps, Induction Motors and Valves	5	<ul style="list-style-type: none"> • Lectures • Practical Training 	30	0	70	100	50
	2. Chlorination and Filtration System		<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Water Meter Selection and Maintenance		<ul style="list-style-type: none"> • Lectures • Practical Training 					
	4. Heavy Machines		<ul style="list-style-type: none"> • Lectures • Practical Training 					
Asset Management	1. Introduction of Asset Management and Asset Management Information System (AMIS)	1	<ul style="list-style-type: none"> • Lectures • Practical Training 	25	0	75	100	50
	2. Risk Management of Asset	1	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Asset Database Analysis	1	<ul style="list-style-type: none"> • Lectures 					
	4. Asset Replacement Plan		<ul style="list-style-type: none"> • Practical Training 					
	5. Asset Condition Assessment (including field work)	2	<ul style="list-style-type: none"> • Practical Training 					
	6. GIS	1	<ul style="list-style-type: none"> • Practical Training 					
Business Planning	1. Business Planning & GAP analysis	1.5	<ul style="list-style-type: none"> • Lectures • Practical Training 	10	10	80	100	70
	2. Strategies for Service Delivery Improvements	2.5	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	3. Strategies for Human Resource Development	1.5	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	4. Strategies for Financial Management	1.5	<ul style="list-style-type: none"> • Lectures • Practical Training 					
	5. Business plan formulation and implementation	1	<ul style="list-style-type: none"> • Lectures • Practical Training 					

添付資料 4.36

2017年秋期研修「O&M of Tube Well and Pump Facility」のコースへの
評価、講師への評価、受講生の合否、受講生からのコメントへの対応

i) O&M of Tube well & Pump Facility
- Fall 2017 Training -

i-a) Course evaluation

Table 1 Course Evaluation – Mr. Zia Mustafa : Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)	Somewhat Satisfied (2)	Satisfied (3)	Very Satisfied (4)	Total Answer	Average
1	Class Lectures	0	1	4	9	14	3.6
2	Class Exercise	0	1	3	10	14	3.6
3	Field activities/exercises during site visit	0	2	3	9	14	3.5
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	1	4	9	14	3.6
5	Schedule & Length of training	0	2	4	8	14	3.4
6	Technical knowledge of the trainer	0	0	1	13	14	3.9
7	Presentation skills of the trainer	0	0	2	12	14	3.9
8	Training relevant to your job duties	1	6	0	7	14	2.9
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	6	4	3	1	14	1.9

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

i-b) Trainee's evaluation

Sr. No	Participants' Name	Organization	Designation	Attendance 20%	Assignment 1 Key Issues 40%	Assignment 2 WSP 40%	Total Marks	Pass or Fail
1	Mr. Muhammad Ishaq	WASA Multan	Sub Engineer	20	32	36	88	Pass
2	Mr. Basharat Ali	WASA Multan	Sub Engineer	20	32	36	88	Pass
3	Mr. Muhammad Pervaiz Rana	WASA Quetta	Assistant Engineer	20	30	20	70	Pass
4	Mr. Ali Jan	WASA Quetta	Supervisor	20	30	20	70	Pass
5	Mr. Salahuddin Achakzai	WASA Quetta	Supervisor	20	30	20	70	Pass
6	Mr. Hafiz Ghufuran	WASA Lahore	XEN	7.5	35	32	74.5	Pass
7	Mr. Ahmed Waheed	WASA Lahore	SDO	15	35	32	82	Pass
8	Mr. Muhammad Khalil	WASA Lahore	SDO	20	35	32	87	Pass
9	Mr. Waseem Azhar	WASA Lahore	SDO	15	35	32	82	Pass
10	Mr. Umair	WASA Lahore	Sub Engineer	15	35	32	82	Pass
11	Mr. Usama Saeed	WASA Lahore	Sub Engineer	20	35	32	87	Pass

12	Mr. Raja Bilal Farooq	WASA Rawalpindi	Sub Engineer	20	30	28	78	Pass
13	Mr. Zohaib Aftab	WASA Rawalpindi	Sub Engineer	20	30	28	78	Pass
14	Mr. Dad Muhammad	WASA Quetta	Supervisor	20	30	20	70	Pass
15	Mr. Sarmad Waheed	WASA Gujranwala	Sub Engineer	20	30	30	80	Pass
16	Mr. AbuBaker Ijaz	WASA Faisalabad	Deputy Director	20	35	38	93	Pass
17	Mr. Muhammad Naeem	WASA Faisalabad	Sub Engineer	15	35	38	88	Pass

i-c) Trainee's Comments

i-c-1) Mr. Zia Mustafa

i-c-1a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No Comments.					√
2	No Comments.					√
3	No Comments.					√
4	No Comments.					√
5	No Comments.					√
6	Trainer and Training is very good especially Mr. Zia Mustafa Sahib and other facilities. Thank you Mr. Zia Mustafa. They have command on their subject and much knowledge about their subject.					√
7	Invite those personnel that are relevant according to the training course.	Selections of personnel is made by WASA's				√
8	These kind of trainings must be held continuously/sequence so that the trainee may be able to equip himself as much as the field requirements and this exercise will be only fruitful when the implementation atmosphere may be provided in practical field. JICA officials are also cooperative and well deserving personnel. Training time period should be as enough to acknowledge the whole purpose of training module and experience.	Timing Will be addressed as per company policy			√	

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
9	The training was organized very nicely by the instructor. He was very much dedicated towards enhancing the learning level of the participants. Coming at their level, he explained the different techniques very deeply. Al Jazari academy was built for up gradation/Updating of knowledge of the Pakistan government employees in order to enhance the working efficiency of the organizations, they are working. For this, I am especially thankful to JICA and the services they have provided.					√
10	Personally, I am so much satisfied with trainer especially Mr. Zia Mustafa sahib and other staff. This training will help me in operation & maintenance of water supply in my city.					√
11	All staffs and teachers cooperate well, loyal, hard worker. Served us very well.					√
12	Overall the whole training was satisfying but the handouts and lectures were not according to the problems we are facing in practical life.	The developed lectures are already as per Field Problems of WASAs			√	
13	No Comments.					√
14	No Comments.					√

i-c-1b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Everything was satisfactory except the quality of food.	Will be addressed later on			√	
2	Poor cleanliness of rooms. Food standard was poor.	Will be addressed later on			√	
3	Rooms were not cleaned. Food quality was not up to standards. Attention should be given to hostel cleanliness	Hostel and Food Concerns will be addressed later on			√	
4	Hostel's cleanliness is not appropriate. Especially cleanliness in rooms was very poor. Food was not good. Quality and Quantity both were poor.	Hostel and Food Concerns will be addressed later on			√	
5	Standard of cleanliness of rooms was not appropriate. Standard of cleanliness must be improved. Quality of Food was poor. Make quality of food better.	Hostel and Food Concerns will be addressed later on			√	
6	Personally I am not satisfied with food, especially breakfast. Hostel room is not good, cleaning and washroom is damaged. Hostel rooms, food especially breakfast is not good. Hostel rooms is so much dirty. Please make sure the cleanliness of the Hostel Rooms every day.	Hostel and Food Concerns will be addressed later on			√	
7	Improve Food Quality.	Will be addressed later on			√	
8	No Comments.					√
9	As far as other arrangements are concerned, those were satisfactory. Hostel accommodation facility was provided but the food was not of the standard quality.	Food Concerns will be addressed later on.			√	

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
10	Breakfast – Food – Lunch – Dinner and these things is not good. Just make sure the daily cleanliness of hostel rooms and change the menu of meal (Breakfast, Lunch, Dinner)	Food Concerns will be addressed later on.			√	
11	Provide suitable atmosphere, food and facilities etc. At the end, food needed improvement and served well.	Food Concerns will be addressed later on.			√	
12	No Comments.					√
13	Officers participating for different cities of Pakistan arrangements described at serial (No. 9) are totally not satisfied. The guest from other cities really not satisfactory which creating bad name of our city.	Hostel and Food Concerns will be addressed later on			√	
14	All is well but there is a need for improvement in food quality. Those who came from outside Punjab for training purpose, they should take a good image of Punjab and urban unit with them.	Food Concerns will be addressed later on			√	

添付資料 4.37

2018 年春期研修「O&M of Tube Well and Pump Facility」のコースへの
評価、講師への評価、受講生の合否、受講生からのコメントへの対応

i) O&M of Tube well & Pump Facility
- Spring 2018 Training -

i-a) Course evaluation

Table 1 Course Evaluation – Mr. Zia Mustafa: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)	Somewhat Satisfied (2)	Satisfied (3)	Very Satisfied (4)	Total Answer	Average
1	Class Lectures	0	0	10	5	15	3.3
2	Class Exercise	0	1	7	7	15	3.4
3	Field activities/exercises during site visit	0	0	11	4	15	3.3
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	10	5	15	3.3
5	Schedule & Length of training	3	1	8	3	15	2.7
6	Technical knowledge of the trainer	0	0	8	7	15	3.5
7	Presentation skills of the trainer	0	1	5	8	14	3.5
8	Training relevant to your job duties	0	1	4	9	14	3.6
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	6	8	15	3.5

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

i-b) Trainee's evaluation

Sr. No	Participants' Name	Organization	Designation	Attendance 20%	Assignment 1 Key Issues 25%	Assignment 2 WSP 25%	Assignment 3 Action Plan 30%	Total Marks	Pass or Fail
1	Miss Mehmona Ishtiaq	WASA Lahore	SDO	20	18	18	23	79	Pass
2	Mr. Tariq Jameel	WASA Lahore	SDO	20	18	18	23	79	Pass
3	Mr. Areez Irfan	WASA Lahore	SDO	20	18	18	23	79	Pass
4	Hafiz Sarfraz Ahmed	WASA Lahore	SDO	20	18	18	23	79	Pass
5	Mr. Abdul Samad Nisar	WASA Lahore	SDO	20	18	18	-	56	Pass
6	Mr. Jamshed Farooq	WASA Lahore	Sub Engineer	20	18	18	23	79	Pass
7	Mr. M. Irshad	WASA Lahore	Sub Engineer	18.8	18	18	23	79	Pass
8	Mr. Muhammad Arslan	WASA Lahore	Sub Engineer	20	18	18	23	79	Pass
9	Mr. Hassan Ali	WASA Lahore	Sub Engineer	20	18	18	23	79	Pass

10	Mr. Muhammad Shakeel Ahmed	WASA Multan	Sub Engineer	20	20	22	22	84	Pass
11	Mr. Zia ur Rehman	WASA Multan	Sub Engineer	20	20	22	22	84	Pass
12	Mr. Hassan Mustafa	WASA Faisalabad	Assistant Director	20	22	18	23	83	Pass
13	Syed Zulqernein Haider	WASA Faisalabad	Assistant Director	20	22	18	23	83	Pass
14	Mr. Amir Gul	WSSC Peshawar	Manager WSSP	18.8	17	14	24	73.8	Pass
15	Mr. Jahanzeb	WSSC Kohat	Assistant Manager WSSC	15	-	14	24	53	Pass
16	Mr. Maqsood Ahmed	WSSC Peshawar	Assistant Manager WSSP	10	-	-	24	34	Fail

i-c) Trainee's Comments

i-c-1) Mr. Zia Mustafa

i-c-1a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	First of all, I want to say thanks to JICA for arranging of such a short term training programs. In training course I have learnt many new things, specially related with water supply network design on pc with EPANET software. Now, I have knowledge that how many ways to measure pressure at pipeline at source T/W or OHR by using pressure meter. It is a chance to improve technical skills and to use it in the field.					√
2	There should be more emphasize on the field visits and during these, there should be formation of group of participants as number of participants are more and to provide every participant equal opportunity to understand what one trainer is explaining in crowd of participants.	Will be addressed later on.			√	
3	It was very fruitful session for all of us. Thanks					√
4	It's a very informative and I have learnt a lot. I suggest such kind of training must be organized at a broad level so more and more people join training and after attending the training, they must be able to solve the problems.					√

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
5	Continue this kind of training in WASA's about O&M of water supply and sewerage.					√
6	The trainer should improve the delivering skills of lecture. Software exercise should be increased.	Regarding software exercise, 1 day is already fully dedicated for its training.				√
7	This training is very useful for me. That was a good learning way for all of us. Required more trainings of different works at WASA's	Wil be addressed later on.			√	
8	In my opinion. Overall, the course contents are satisfactory, but the course is named as O&M of Tube Well & Pump Facility, there should be a section about energy auditing at sites and repairing & maintenance of PFI Plants.	The energy audit & maintenance of PFI plants are related to some other training courses of academy and concerns will be addressed.			√	
9	It was informative, if we implement in field, all O&M action plans, we obviously get much benefit.					√
10	Quantity of displayed animation should be increased. Hands on experience of more water supply devices must be provided. (flowmeter, gauges, recorders etc	Wil be addressed later on.			√	
11	Duration of class training should be minimized because class timing has long duration. Increase the number of days and reduce the timing during a day.	Class training duration are as per company policy.				√
12	Length of the training should be extended. Duration class should be minimized as some SDOs work in operations. It becomes hectic for them to cope with training. Class should be of	Length and duration of training are as per company policy.			√	

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
	maximum 2hours/day to make it more productive.					
13	No comments.					√
14	There is a need to arrange training on various water testing, designing of various components of water supply system (pump, rising main, distribution network, reservoir)	Design of water distribution system has already been addressed in tube well course training.				√
15	Please include informative ideas. EPANET software CDs.	Will be addressed later on.			√	

i-c-1b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					√
2	No comments.					√
3	No comments.					√
4	No comments.					√
5	No comments.					√
6	Electrical problem, somewhat, disturbed the lab exercise. Wifi is not working properly.	Concerns will be addressed later on.			√	
7	No comments.					√
8	No comments.					√
9	No comments.					√
10	No comments.					√
11	No comments.					√
12	No comments.					√
13	No comments.					√
14	No comments.					√
15	No comments.					√

添付資料 4.38

2017年秋期研修「Leak Detection」のコースへの評価、講師への評価、
受講生の合否、受講生からのコメントへの対応

ii) Leakage Detection and Repair
- Fall 2017 Training -

ii-a) Course evaluation

Table 1 Course Evaluation: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)	Somewhat Satisfied (2)	Satisfied (3)	Very Satisfied (4)	Total Answer	Average
1	Difficulty Level of Training content	0	0	9	5	14	3.4
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	5	9	14	3.6
3	Relevance of On-Site Training Activities	0	1	5	8	14	3.5
4	Overall Presentation Quality of Trainer	0	0	3	11	14	3.8
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	3	10	14	3.6
6	Time & Length of Training	0	3	6	5	14	3.1
7	Practical Activities & Exercise at Class Room	0	1	7	6	14	3.4
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	1	6	7	14	3.4
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	0	4	10	14	3.7
10	Overall Quality of Training	0	0	5	9	14	3.6

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 3 Course Evaluation: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	14	0

Table 5 Course Evaluation: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Development of basic knowledge of leak detection.	14	0

	Understand installation and operation of leak detection equipment.	14	0
	Understand installation and operation of pressure recorder and ultrasonic flow meter.	13	1
	Develop Leak Detection Action Plan	13	1

ii-b) Trainer's evaluation

Table 1 Trainer's Evaluation: Mr. Zia Mustafa

Sr. No	Items	Below Average (1)	Average (2)	Good (3)	Very good (4)	Excellent (5)	Total Answer	Average
1	Qualification & Experience	0	0	3	3	8	14	4.4
2	Technical Knowledge of the Content	0	0	3	2	9	14	4.4
3	Explanation of the Content	0	0	2	8	4	14	4.1
4	Demonstration & Professional Capability of Handling Equipment	0	0	2	5	6	13	4.3
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	4	8	13	4.5
6	Management of on-site Training	0	1	2	4	7	14	4.2
7	Time Management	0	0	3	3	8	14	4.4
8	Presentation Skills	0	0	1	7	6	14	4.4
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	8	4	14	4.1

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

ii-c) Trainee's evaluation

Sr. No	Participants' Name	Organization	Designation	Attendance 20%	Assignment 1 20% Current Practices of Leakages Control	Assignment 2 20% Equipment Reflection Report	Assignment 3 20% Equipment Reflection Report	Assignment 4 20% LDAP	Total Marks	Pass or Fail
1	Mr. Muhammad Ikram	WASA Multan	Sub Engineer	20	13	15	-	15	63	Pass
2	Mr. Muhammad Arshad	WASA Multan	Sub Engineer	16	13	15	-	15	59	Pass
3	Mr. Hassan Mustafa	WASA Faisalabad	Assistant Director (tech)	16	14	17	15	18	80	Pass
4	Mr. Mohsin Ali Asghar	WASA Faisalabad	Sub Engineer	20	14	17	15	18	84	Pass
5	Mr. Ali Jan	WASA Quetta	Supervisor	20	12	12	12	13	69	Pass
6	Mr. Muhammad Naseem	WASA Quetta	Supervisor	20	12	12	12	13	69	Pass
7	Mr. Salah ud Din	WASA Quetta	Sub Engineer	20	12	12	12	13	69	Pass

8	Mr. Abdul Rehman	WASA Gujranwala	Sub Engineer	20	12	-	15	18	65	Pass
9	Mr. Salman Ahmed	WASA Gujranwala	Assistant Director Engg	20	12	-	15	18	65	Pass
10	Mr. Muhammad Khaleeq Afzal	WASA Rawalpindi	Assistant Director	20	12	13	13	14	72	Pass
11	Mr. Noshad Aslam	WASA Rawalpindi	Sub Engineer	14	12	13	13	14	66	Pass
12	Mr. Rashid Chaudhri	WASA Lahore	SDO	14	14	14	14	16	72	Pass
13	Mr. Muhammad Munir Afzal	WASA Lahore	SDO	20	14	14	14	16	78	Pass
14	Ms. Mavra Khan	WASA Lahore	Assistant Engg /SDO	20	14	14	14	16	78	Pass
15	Mr. Imran	WASA Lahore	SDO	20	14	14	14	16	78	Pass
16	Mr. Bilal	WASA Lahore	Sub Engineer	18	14	-	14	16	62	Pass
17	Mr. Mudasar	WASA Lahore	Sub Engineer	12	14	14	14	16	70	Pass
18	Mr. Nazim	WASA Lahore	Sub Engineer	20	14	14	14	16	78	Pass

19	Mr. Umair	WASA Lahore	Sub Engineer	20	14	14	14	16	78	Pass
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Form A: Question 12: Suggestions for further improvement of Training Material:

Sr. No.	Comments – Module 1-3	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	It should be clear and short time and should be point to point on related training subject.	The provided training is already comprehensive and is addressing all concerns from theory to practical activities in Field. Regarding short duration training, it will be addressed as per Company Policy.			√	
2	Training material could be more helpful if provided in colored copies	Will be addressed as per Company Policy.			√	
3	Already satisfactory					√
4	Site watching is good. Time and experience show very somewhat satisfied.					√
5	The material should concise with field, for real time problems	The material provided is already concise, considering all Field Problems.				√
6	Short time training	Will be addressed as per Company Policy.			√	
7	Training material/slides/presentation was up to the task					√
8	Short time training and main water supply course point to point					√
9	Make the lectures less boring.	Lecture are already developed as per requirements of the participants of 5 WASA's				√
10	The material should be as per field. In slides trainer try to cover but it can be improved further	The provided training material is already according to Field Conditions, however, future improvement would be brought for next training cycle.			√	

Form A Question 13 Comments on overall training and length:

Sr. No	Comments – Module 1-3	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Training length should be decreased and it should be on point to point so that the time didn't wasted.	Will be addressed as per Company Policy			√	
2	Training length and time was satisfactory.					√
3	Training length and time was satisfactory.					√
4	Training length is very long time & good performance.	Will be addressed as per Company Policy			√	
5	Very informative as professional of this field. The timing & training length is ok.					√
6	All is good, training length and training timing.					√
7	Training length was more. It should be comprised on two to three days regarding the course content as it can be covered in less time.	Will be addressed as per Company Policy			√	
8	Good training					√
9	Training length and training timing are too long. Three days are enough.	Will be addressed as per Company Policy			√	
10	Both training length and timings are okay					√
11	Over all training timing & training length is satisfactory					√
12	The length & timings were ok. They deliver in a very good way					√

Form A Question 14 Kindly provide two suggestions for further improvement related to site visits and field training activities:

Sr. No.	Comments Module 1-2-3	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Visit the complicated site so that the experience improved. These slides are easily handle able that visited.	Will be addressed for next training cycle			√	
2	Site and field visits were satisfactory.					√
3	Need more practical time. Arrange more practical sites and exercises.	Will be addressed for next training cycle			√	
4	Satisfactory.					√
5	Instead of preplanned visits for use of leakage instruments, must coordinate with WASA for real time challenge.	The visited sites are already being planned in coordination with WASA to address their problems				√
6	Suggestions for further improvement that all site visits to one by one and choice one topic.	Already addressed this concern				√
7	Field visit should be in groups. If the participants are more there should be more trainers on the field visit as in groups you required more than one trainer. If there is one trainer one equipment and the no of participants are more. Then it is difficult for the participants to understand listen and cannot have a clear look on the trainer while performing the task.	As one set of Equipment has been provided by JICA to Aljazari Academy. therefore, at a time, one trainer can demonstrate the Equipment			√	
8	Best care and two Nos. factory visits.	Will be addressed as per Course Requirement			√	
9	Although site visits are good. But I think that we should work on larger lines i.e. 300 mm, 500 mm, 600 mm (Leak Detection Repair on site)	Will be addressed for next training cycle if leakage of larger pipeline is arranged by WASA			√	

10	No suggestions, it was okay					√
11	Original leakage sites should be selected & whole procedure should be performed, detection of pipe & leakage repair of leakage. If such sites are selected where leakage detection is harder, it would be more beneficial.	The leak sites are already been selected in accordance coordination with WASA Lahore				√
12	Field visit are very knowledgeable. We learn many things in these visits.					√
13	The sites should be having real time problems	The selected sites are already addressing the real time problems of WASA				√

Form B Question 10 Any suggestion or comment:

Sr. No.	Comments Module 1-2-3	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	The training was overall very informative and helpful.					√
2	Overall training are very good and it will be helpful for future.					√
3	Hostels are not being look after properly, even the locks of the room are out of order/major construction defaults in the locks, electric sockets, AC in Rooms are out of order. There is no Wi-Fi in the hostel. No proper Attendant in the Hostel. IT should be lot better than it is.	Hostel and Food Concerns will be addressed later on			√	
4	Make the slides a little more interesting.	Lecture are already developed as per requirements of the participants of 5 WASA's				√
5	Just real detection of leakage through All Equipment so that All Equipment procedure can be understand more accurately.	The leakage detection sites are already selected on real scenario of WASA's and equipment have been used on these sites.				√

添付資料 4.39

2018年春期研修「Leak Detection」のコースへの評価、講師への評価、
受講生の合否、受講生からのコメントへの対応

ii) Leak Detection Course
- Spring 2018 Training -

ii-a) Course evaluation

Table 1 Course Evaluation – Mr. Zia Mustafa: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	4	10	14	3.7
2	Class Exercise	0	0	4	10	14	3.7
3	Field activities/exercises during site visit	0	0	3	11	14	3.8
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	3	11	14	3.8
5	Schedule & Length of training	1	1	5	7	14	3.3
6	Technical knowledge of the trainer	0	0	3	11	14	3.8
7	Presentation skills of the trainer	0	0	5	9	14	3.6
8	Training relevant to your job duties	0	1	1	11	13	3.8
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	2	2	10	14	3.6

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

ii-b) Trainee's evaluation

Sr. No	Participants' Name	Organization	Designation	Attendance 20%	Assignment 1 20% Current Practices of Leakages Control	Assignment 2 20% Equipment Reflection Report	Assignment 3 20% Equipment Reflection Report	Assignment 4 20% LDAP	Total Marks	Pass or Fail
1	Mr. Riaz Ellahi William	WASA Lahore	Deputy Director	20	14	11	13	18	76	Pass
2	Mr. Adnan Ahmed	WASA Lahore	Junior Construction Engineer	20	14	11	13	16	74	Pass
3	Mr. Husnain Ahmed	WASA Lahore	Assistant Director	20	14	11	13	18	76	Pass
4	Mr. Mohsin Ali	WASA Lahore	SDO	20	14	11	13	16	74	Pass
5	Mr. Muhammad Zeeshan	WASA Lahore	Sub Engineer	20	14	11	13	16	74	Pass
6	Mr. Farhan Abbas	WASA Lahore	Sub Engineer	15		11	13	18	57	Pass
7	Mr. Muhammad Usman	WASA Lahore	Sub Engineer	20	14	11	13	18	76	Pass

8	Mr. Muhammad Kamran	WASA Lahore	Sub Engineer	20	14	11	13	16	74	Pass
9	Mr. Muhammad Mustafa	WASA Multan	Senior Sub Engineer	20	-	18	18	18	74	Pass
10	Mr. Abdul Qadir Abid	WASA Multan	Sub Engineer	20	-	18	18	18	74	Pass
11	Mr. Abdul Haleem	WSSC Peshawar	Sub Engineer	20	-	18	18	18	74	Pass
12	Mr. Waheed Gul	WSSC Peshawar	Sub Engineer	20	-	18	18	18	74	Pass
13	Mr. Muhammad Irfan	WASA Rawalpindi	Inspector Tube Well	20	10	13	16	18	77	Pass
14	Mr. Awais Liaqat	WASA Rawalpindi	Sub Engineer	20	10	13	16	18	77	Pass
15	Mr. Shahzad Malik	MC, APE, BWP	Driver Disposal	20	-	18	-	18	56	Pass

ii-c) Trainee's Comments

ii-c-1) Mr. Zia Mustafa

ii-c-1a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					✓
2	No comments.					✓
3	Enhance the schedule and length of training please.	The schedule and length of training are as per Company Policy				✓
4	No comments.					✓
5	Very effective and fruitful session. This should remain continued to train official staff.					✓
6	Academy is good. Teachers teach very well, this training will be very helpful in future.					✓
7	No comments.					✓
8	There is no Facility of Wi-Fi in Hostel. We complain about 5 times daily but not yet Wi-Fi/Internet functional. Water dispenser is not working. We complain about and after three days, the problem is resolved. I advised that if before a visit /Field visit, explain about the Technical Equipment then it's better to know about.	Will be addressed later.			✓	
9	All is ok.					✓

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
10	No comments.					✓
11	Some issues safety, Wi-Fi, drinking water. Kindly resolve these problems	Will be addressed later			✓	
12	No comments.					✓
13	Our training courses included previous, both are very good and have provided extra technical knowledge which will be required us on job in offices and field work. All arrangements are very satisfactory conditions and will be make us more experienced and provide extra technical knowledge. Academy is in satisfactory condition and all staff are cooperative along with good and satisfactory atmosphere. After training, it's my humble request that last ceremony should be start at earliest which will be make us more extra knowledge and experienced.	Will be addressed as per Company Policy.			✓	

v-c-1b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					✓
2	No comments.					✓
3	No comments.					✓
4	No comments.					✓
5	No comments.					✓
6	No comments.					✓
7	No comments.					✓
8	There is no facility of Wi-Fi in hostel. We complain about 5 times daily but not yet, Wi-Fi / internet is functional. Water dispenser is not working. We complained about it, after three days the problem is solved.	Will be addressed later.			✓	
9	No comments.					✓
10	No comments.					✓
11	Some issues; Safety. Wi-Fi Drinking water. Kindly solve these.	Will be addressed later.			✓	
12	No comments.					✓
13	No comments.					✓

添付資料 4.40

2017 年秋期研修「O&M of Sewer and Storm Water Drainage」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iii) O&M of Sewer and Storm Water Drainage
- Fall 2017 Training -

iii-a) Course evaluation

Table 1 Course Evaluation in Module 1-3: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training content	0	0	10	4	14	3.3
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	8	6	14	3.4
3	Relevance of On-Site Training Activities	0	0	8	6	14	3.4
4	Overall Presentation Quality of Trainer	0	0	6	8	14	3.6
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	6	8	14	3.6
6	Time & Length of Training	1	3	9	1	14	2.7
7	Practical Activities & Exercise at Class Room	0	0	8	6	14	3.4
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	2	10	2	14	3.0
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	1	3	5	5	14	3.0
10	Overall Quality of Training	0	0	11	3	14	3.2

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 3 Course Evaluation in Module 1-3: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	14	0

Table 5 Course Evaluation in Module 1-3: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Understanding & use of Personal Protective Equipment (PPE).	13	0
	Learning about 'Traffic management around O & M site'.	13	0
	Application of 'Sludge Measurement Technique' at storm water drain	11	0
	Use of 'Metal Locator' & 'Gas Monitor'.	13	0
	Ability to conduct 'Manhole Inspection'	14	0
	Assessment of 'Lift Station Infrastructure'.	14	0
	Development of an action plan for the improvement of O & M system.	14	0

iii-b) Trainer's evaluation

Table 1 Trainer's Evaluation in Module 1-3: Mr. Muhammad Irfan

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	1	1	7	5	14	4.1
2	Technical Knowledge of the Content	0	0	4	7	3	14	3.9
3	Explanation of the Content	0	0	2	7	4	13	4.2
4	Demonstration & Professional Capability of Handling Equipment	0	0	1	8	5	14	4.3
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	3	6	5	14	4.1
6	Management of on-site Training	0	0	3	5	6	14	4.2
7	Time Management	0	0	3	7	4	14	4.1
8	Presentation Skills	0	0	0	5	9	14	4.6
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	1	3	10	14	4.6

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

iii-c) Trainee's evaluation

Sr. No.	Name	Organization	Designation	RESULT - MODULE 01					
				02 Oct, 2017					
				Class Work	Field Work	Action Plan	Attendance	Sub-Total	Pass / Fail
				15%	20%	40%	25%	100%	
1	Ms. Zainab Abbas	WASA-Lahore	Chief Chemist	8	17	35	25	85	Pass
2	Ms. Fiza Anjum	WASA-Lahore	Assistant Director	11	17	35	25	88	Pass
3	Mr. Kashif Rasool	WASA-Lahore	SDO	0	0	0	13	13	Fail
4	Mr. Nouman Khaliq	WASA-Lahore	SDO	9	15	35	25	84	Pass
5	Mr. Muhammad Zohaib	WASA-Lahore	SDO	11	14	35	0	60	Pass
6	Mr. Muhammad Ali Haider	WASA-Lahore	SDO	12	16	36	25	89	Pass
7	Mr. Muhammad Haris Shiekh	WASA-Lahore	SDO	9	16	36	25	86	Pass
8	Mr. Hamza Sharif	WASA-Lahore	Sub-Engineer	9	16	36	25	86	Pass
9	Mr. Umar Farooq	WASA-Lahore	Sub-Engineer	6	15	35	25	81	Pass
10	Mr. Muhammad Khurram	WASA-Gujranwala	Assistant Director	12	14	34	25	85	Pass
11	Mr. Jahanzeb Irshad Chatha	WASA-Gujranwala	Sub-Engineer	11	16	34	25	86	Pass
12	Mr. Muhammad Shakeel Ahmed	WASA-Multan	Sub-Engineer	8	15	35	25	83	Pass
13	Mr. Malik Muhammad Arif Abbas	WASA-Multan	Assistant Director	9	14	35	25	83	Pass
14	Mr. Faizan Shakoor	WASA-Faisalabad	Assistant Director	Absent					
15	Mr. Mohsin Ali Asghar	WASA-Faisalabad	Sub-Engineer	Absent					
16	Mr. Muhammad Raiz	MC-Bahawalpur	Chief Sanitary Inspector	2	14	36	0	52	Pass
17	Mr. Nazar ul Islam	MC-Bahawalpur	Sanitary Inspector	0	15	36	0	51	Pass
18	Mr. Ghulam Abbas	MC-Bahawalpur	Municipal Officer (I&S)	9	17	36	25	87	Pass
19	Mr. Javid Khilji	WASA-Quetta	Assistant Engineer	Absent					
20	Mr. Salahuddin	WASA-Quetta	Sr. Supervisor	Absent					

Total Nominations	20
Participants Appeared	16
Pass	15
Fail	1
Pass %age	94

RESULT - MODULE 02					
03 Oct, 2017					
Class Work	Field Work	Action Plan	Attendance	Sub-Total	Pass / Fail
15%	20%	40%	25%	100%	
0	18	35	25	78	Pass
15	0	35	0	50	Pass
Absent					
12	13	35	25	85	Pass
15	0	35	0	50	Pass
15	17	36	25	93	Pass
15	15	36	25	91	Pass
12	14	36	25	87	Pass
14	15	35	25	89	Pass
15	16	34	25	90	Pass
15	0	34	0	49	Pass
12	15	35	25	87	Pass
12	16	35	25	88	Pass
Absent					
Absent					
9	0	36	0	45	Fail
9	0	36	0	45	Fail
15	16	36	25	92	Pass
Absent					
Absent					

Total Nominations	20
Participants Appeared	15
Pass	13
Fail	2
Pass %age	87

RESULT - MODULE 03					
04 - 06 Oct, 2017					
Class Work	Field Work	Action Plan	Attendance	Sub-Total	Pass / Fail
15%	20%	40%	25%	100%	
0	0	35	17	52	Pass
11	17	35	25	88	Pass
Absent					
11	15	35	17	77	Pass
12	17	35	25	89	Pass
12	16	36	25	89	Pass
12	16	36	25	89	Pass
11	16	36	25	88	Pass
5	15	35	25	80	Pass
11	15	34	25	85	Pass
14	14	34	25	87	Pass
9	14	35	25	83	Pass
11	15	35	25	86	Pass
Absent					
Absent					
11	16	36	25	88	Pass
9	17	36	25	87	Pass
9	16	36	25	86	Pass
Absent					
Absent					

Total Nominations	20
Participants Appeared	15
Pass	15
Fail	0
Pass %age	100

COURSE RESULT					
Average of Sub-Totals					
Class Work	Field Work	Action Plan	Attendance	Grand Total	Pass / Fail
15%	20%	40%	25%	100%	
3	12	35	22	71	Pass
12	11	35	17	75	Pass
0	0	0	13	13	Fail
11	14	35	22	82	Pass
13	10	35	8	66	Pass
13	16	36	25	90	Pass
12	16	36	25	89	Pass
11	15	36	25	87	Pass
8	15	35	25	83	Pass
13	15	34	25	87	Pass
13	10	34	17	74	Pass
10	15	35	25	84	Pass
11	15	35	25	86	Pass
Absent					
Absent					
7	10	36	8	61	Pass
6	11	36	8	61	Pass
11	16	36	25	88	Pass
Absent					
Absent					

Total Nominations	20
Participants Appeared	16
Pass	15
Fail	1
Pass %age	94

iii-d) Participants Suggestions & Faculty's Response

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action				
	Category	Details	Description	Urgent	Normal	Later	Not Valid	
1.	Technical Issues	Trainings must also be provided at respective WASA station.	Training follow-up visits have already been conducted where various trainings were exercised for local staff.				√	
		Training must be made more advance.	Although every effort is made to add modern techniques, still suggestion will be considered for up-coming cycles.		√			
		A separate field specialist must be deputed for training related with machines and electrical instruments.	Trainees can attend Academy designed Electrical & Mechanical training courses for detailed learning on desired topics.					√
		Real time activities (sewer cleaning, drain cleaning etc.) must be incorporated.	Due to reduction in training duration after the requests received from WASA trainees in previous cycles, these activities will be covered in OST.					√

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action			
	Category	Details		Description	Urgent	Normal	Later
2.	Time and Duration	Training duration should be increased.	For 3 rd and up-coming training cycles, duration is compressed from 09 to 05 days, so increase in time is not possible in this phase.				√
3.	Other Concerns	Whole training team is quite hardworking.	Comments are received with thanks, and team is ambitious to deliver much better trainings in future.				√
		Class room must be improved.	A well-equipped and new training block has been constructed recently, inside Academy premises.				√

添付資料 4.41

2018 年春期研修「O&M of Sewer and Storm Water Drainage」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iii) O&M of Sewer and Storm Water Drainage
- Spring 2018 Training -

iii-a) Course evaluation

Table 1 Course Evaluation – Mr. Muhammad Irfan: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	4	16	20	3.8
2	Class Exercise	0	0	6	14	20	3.7
3	Field activities/ exercises during site visit	0	0	6	14	20	3.7
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	6	14	20	3.7
5	Schedule & Length of training	0	4	11	5	20	3.1
6	Technical knowledge of the trainer	0	0	1	19	20	4.0
7	Presentation skills of the trainer	0	0	2	18	20	3.9
8	Training relevant to your job duties	0	0	10	10	20	3.5
9	Logistics arrangements (classroom, vehicles, food, hostels, communication etc.)	0	1	5	14	20	3.7

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

iii-b) Trainee's evaluation

Sr. No.	Name	Organization	Designation	RESULT - MODULE 01						RESULT - MODULE 02					
				19 Feb, 2018						20 Feb, 2018					
				Class Work	Field Work	Action Plan	Attendance	Sub-Total	Pass / Fail	Class Work	Field Work	Action Plan	Attendance	Sub-Total	Pass / Fail
15%	20%	40%	25%	100%		15%	20%	40%	25%	100%					
1	Mr. Hafiz Ghufuran Sadiq	WASA-Lahore	XEN (O&M-II)	8	0	34	25	67	Pass	0	0	34	0	34	Fail
2	Mr. Muhammad Zohaib	WASA-Lahore	SDO	9	15	33	25	82	Pass	15	15	33	25	88	Pass
3	Miss. Hafiza Fatima Zahid	WASA-Lahore	Technical Officer	12	18	34	25	89	Pass	15	18	34	25	92	Pass
4	Mr. Nabil Ahmed	WASA-Lahore	Sub-Engineer	12	16	35	25	88	Pass	14	15	35	25	89	Pass
5	Mr. Muhammad Ahsan	WASA-Lahore	Sub-Engineer	2	15	30	25	72	Pass	0	13	30	25	68	Pass
6	Mr. Farhan Abbas	WASA-Lahore	Sub-Engineer	11	18	34	25	88	Pass	14	16	34	25	89	Pass
7	Mr. Mudassir Shoukat	WASA-Lahore	Sub-Engineer	9	17	34	25	85	Pass	6	13	34	25	78	Pass
8	Mr. Syed Touseef Ali Zaidi	WASA-Lahore	Sub-Engineer	12	17	34	25	88	Pass	14	15	34	25	88	Pass
9	Mr. Naif Khalid	WASA-Lahore	Sub-Engineer	8	16	34	25	83	Pass	12	14	34	25	85	Pass
10	Mr. Shakeel Ahmad	WASA-Gujranwala	Sub-Engineer	0	0	0	25	25	Fail	0	0	0	25	25	Fail
11	Mr. Muhammad Abdul Rehman	WASA-Gujranwala	Sub-Engineer	11	0	35	25	71	Pass	15	0	35	25	75	Pass
12	Mr. Muhammad Qasim	WASA-Multan	Sr. Sub-Engineer	8	18	34	25	85	Pass	14	14	34	25	87	Pass
13	Mr. Muhammad Fiaz	WASA-Multan	Sub-Engineer	0	0	34	25	59	Pass	15	8	34	25	82	Pass
14	Mr. Irfan-ul-Haq	WASA-Faisalabad	Assistant Director	12	18	34	25	89	Pass	11	17	34	25	87	Pass
15	Mr. Syed Zulqarnain Hayder	WASA-Faisalabad	Sub-Engineer	8	18	33	25	84	Pass	12	15	33	25	85	Pass
16	Mr. Muhammad Ali Gulraiz	WASA-Rawalpindi	Sub-Engineer	9	16	35	25	85	Pass	15	15	35	25	90	Pass
17	Mr. Adil Afzal	WASA-Rawalpindi	Sub-Engineer	12	16	34	25	87	Pass	14	16	34	25	89	Pass
18	Mr. Muhammad Javaid Akhtar	PHED [North]	Assistant Engineer [P&D-I]	11	18	35	25	89	Pass	14	17	35	25	91	Pass
19	Mr. Muhammad Askar Khan	WSSP	Assistant Manger [S&D]	11	17	33	25	86	Pass	12	16	33	25	86	Pass
20	Mr. Zafarullah Khan	WSSP	Assistant Manger [S&D]	14	17	33	25	89	Pass	14	16	33	25	88	Pass
21	Mr. Muhammad Ahsan Adnan	WSSC - Kohat	Assistant Manger [S&D]	14	17	34	25	90	Pass	9	16	34	25	84	Pass
				Total Nominations		21				Total Nominations		21			
				Participants Appeared		21				Participants Appeared		20			
				Pass		20				Pass		19			
				Fail		1				Fail		2			
				Pass %age		95				Pass %age		95			

Sr. No.	Name	Organization	Designation	RESULT - MODULE 03						COURSE RESULT					
				21-23 Feb, 2018						Average of Sub-Totals					
				Class Work	Field Work	Action Plan	Attendance	Sub-Total	Pass / Fail	Class Work	Field Work	Action Plan	Attendance	Grand Total	Pass / Fail
15%	20%	40%	25%	100%		15%	20%	40%	25%	100%					
1	Mr. Hafiz Ghufuran Sadiq	WASA-Lahore	XEN (O&M-II)	12	17	34	25	88	Pass	7	6	34	17	63	Pass
2	Mr. Muhammad Zohaib	WASA-Lahore	SDO	12	16	33	25	86	Pass	12	15	33	25	85	Pass
3	Miss. Hafiza Fatima Zahid	WASA-Lahore	Technical Officer	11	18	34	25	88	Pass	13	18	34	25	90	Pass
4	Mr. Nabil Ahmed	WASA-Lahore	Sub-Engineer	14	16	35	25	90	Pass	13	16	35	25	89	Pass
5	Mr. Muhammad Ahsan	WASA-Lahore	Sub-Engineer	8	14	30	25	77	Pass	3	14	30	25	72	Pass
6	Mr. Farhan Abbas	WASA-Lahore	Sub-Engineer	12	17	34	25	88	Pass	12	17	34	25	88	Pass
7	Mr. Mudassar Shoukat	WASA-Lahore	Sub-Engineer	6	15	34	25	80	Pass	7	15	34	25	81	Pass
8	Mr. Syed Touseef Ali Zaidi	WASA-Lahore	Sub-Engineer	14	16	34	25	89	Pass	13	16	34	25	88	Pass
9	Mr. Naif Khalid	WASA-Lahore	Sub-Engineer	14	16	34	25	89	Pass	11	15	34	25	85	Pass
10	Mr. Shakeel Ahmad	WASA-Gujranwala	Sub-Engineer	0	8	0	8	16	Fail	0	3	0	19	22	Fail
11	Mr. Muhammad Abdul Rehman	WASA-Gujranwala	Sub-Engineer	9	0	35	8	52	Pass	12	0	35	19	66	Pass
12	Mr. Muhammad Qasim	WASA-Multan	Sr. Sub-Engineer	14	16	34	25	89	Pass	12	16	34	25	87	Pass
13	Mr. Muhammad Fiaz	WASA-Multan	Sub-Engineer	14	16	34	25	89	Pass	10	8	34	25	77	Pass
14	Mr. Irfan-ul-Haq	WASA-Faisalabad	Assistant Director	14	18	34	25	91	Pass	12	18	34	25	89	Pass
15	Mr. Syed Zulqarnain Hayder	WASA-Faisalabad	Sub-Engineer	8	16	33	25	82	Pass	9	16	33	25	83	Pass
16	Mr. Muhammad Ali Gulraiz	WASA-Rawalpindi	Sub-Engineer	12	15	35	25	87	Pass	12	15	35	25	87	Pass
17	Mr. Adil Afzal	WASA-Rawalpindi	Sub-Engineer	12	15	34	25	86	Pass	13	16	34	25	87	Pass
18	Mr. Muhammad Javaid Akhtar	PHED [North]	Assistant Engineer [P&D-I]	8	16	35	25	84	Pass	11	17	35	25	88	Pass
19	Mr. Muhammad Askar Khan	WSSP	Assistant Manger [S&D]	9	16	33	25	83	Pass	11	16	33	25	85	Pass
20	Mr. Zafarullah Khan	WSSP	Assistant Manger [S&D]	11	15	33	25	84	Pass	13	16	33	25	87	Pass
21	Mr. Muhammad Ahsan Adnan	WSSC - Kohat	Assistant Manger [S&D]	14	16	34	25	89	Pass	12	16	34	25	87	Pass

Total Nominations	21
Participants Appeared	21
Pass	20
Fail	1
Pass %age	95

Total Nominations	21
Participants Appeared	21
Pass	20
Fail	1
Pass %age	95

iii-c) Trainee's Comments

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action			
	Category	Details		Description	Urgent	Normal	Later
1.	Technical Issues	Theoretical portion must be more concise, while field activities must be greater than before.	In upcoming trainings more field work exercises and demonstrations will be added keeping in view other constraints e.g. weather etc..	√			
		During field exercises, group must be organized comprising of 05 training participants, with one guide, so that participants may learn more easily.	Suggestion is quite worthy, so fair effort will be made to manage and deliver group wise, where ample site space and time is available in this regard.	√			
		Knowledge of wastewater treatment should be introduced in this course.	Although a separate module is needed to cater this critical topic, but still the fundamentals of wastewater treatment can be added, if & if time is not a constraint in up-coming cycles.				√

Sr. No.	Participants' Suggestions		Faculty Response	Need for Action			
	Category	Details		Description	Urgent	Normal	Later
		Such training must be continued by JICA & Al-Jazari Academy for betterment of humanity.	JICA & Al-Jazari Academy is committed to serve & enhance O&M capacity of water sector of Pakistan.				√
2.	Time and Duration	Training duration should be increased.	In the light of feedback received in 1 st & 2 nd training cycles, the training duration for 3 rd and 4 th cycles is compressed from 09 days to 05, so increase in time is not possible.				√
3.	Other Concerns	Pick & drop service from bus terminal to Academy should be provided, because it is very difficult to reach Academy for those participants who arrives outside from Lahore.	For facilitating the training participants, this matter will be discussed with Principal and Academy administration.		√		

添付資料 4.42

2017年秋期研修「O&M of Electrical Equipment」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iv) O&M of Electrical Equipment
- Fall 2017 Training -

iv-a) Course evaluation

Table 1 Course Evaluation – Mr. Jawad Shahid: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	1	11	12	3.9
2	Class Exercise	0	0	4	8	12	3.7
3	Field activities/exercises during site visit	0	0	4	8	12	3.7
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	1	11	12	3.9
5	Schedule & Length of training	1	2	4	5	12	3.1
6	Technical knowledge of the trainer	0	0	1	11	12	3.9
7	Presentation skills of the trainer	0	0	1	11	12	3.9
8	Training relevant to your job duties	0	0	5	7	12	3.6
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	5	6	12	3.4

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 2 Course Evaluation – Mr. Ihsan ul Haq: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	4	8	12	3.7
2	Class Exercise	0	0	4	8	12	3.7
3	Field activities/exercises during site visit	0	0	5	7	12	3.6
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	3	9	12	3.8
5	Schedule & Length of training	0	0	3	5	12	3.1
6	Technical knowledge of the trainer	0	0	2	10	12	3.8
7	Presentation skills of the trainer	0	0	0	12	12	4.0
8	Training relevant to your job duties	0	0	2	10	12	3.8
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	6	4	12	3.3

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

iv-b) Trainee's evaluation

				MODULE 01					
				01 Jan To 02 Jan. 2018					
Sr. No.	Name	Organization	Designation	Attendance	Exercise 1	Exercise-2	Action Plan	Sub-Total	Pass / Fail
				30%	20%	25%	25%	100%	
1	Mr. Waseem ud din	WASA Quetta	Assistant Engineer	22.8	15.0	20.0	25.0	82.8	Pass
2	Mr. Kamran Khan	WASA Quetta	Sub-Engineer	25.2	15.0	20.0	25.0	85.2	Pass
3	Mr. Muhammad Fiaz	WASA Multan	Sub Engineer	30.0	12.0	22.0	25.0	89.0	Pass
4	Mr. Abdul Qadir Abid	WASA Multan	Sub Engineer	30.0	20.0	25.0	25.0	100.0	Pass
5	Mr. Sadheer Ahmed Abbasi	WASA Rawalpindi	Sub Engineer	25.2	20.0	20.0	25.0	90.2	Pass
6	Mr. Amir Hussain Shah	WASA Rawalpindi	Sub Engineer	25.2	20.0	16.0	25.0	86.2	Pass
7	Mr. Makhdoom Babar	WASA Faisalabad	Deputy Director	30.0	20.0	23.0	25.0	98.0	Pass
8	Mr. Asad Ali	WASA Faisalabad	Deputy Director	10.0	0.0	0.0	25.0	35.0	Fail
9	Mr. Ali Husnain	WASA Gujranwala	Assistant Director	25.2	20.0	13.0	25.0	83.2	Pass
10	Mr. Waqar Sarwar	WASA Gujranwala	Sub Engineer	25.2	20.0	18.0	25.0	88.2	Pass
11	Mr. Sh. Muhammad Imran	WASA Lahore	SDO	25.8	18.0	23.0	25.0	91.8	Pass
12	Mr. Mohd. Saad Siddique	WASA Lahore	SDO (E&M)	30.0	20.0	22.0	25.0	97.0	Pass
13	Mr. Muhammad Irshad	WASA Lahore	Sub Engineer	Not Attended					
14	Mr. Zain Rasheed	WASA Lahore	Sub Engineer	30.0	10.0	16.0	25.0	81.0	Pass
15	Mr. Wahaj Khan	WASA Lahore	Sub Engineer	0.0	0.0	0.0	25.0	25.0	Fail
16	Mr. Zohaib	WASA Lahore	SDO (E&M)	Not Attended					
17	Mr. Omair Masood	WASA Lahore	SDO (E&M)	30.0	20.0	22.0	25.0	97.0	Pass

Total Participants	15
Pass	13
Fail	2
Pass %age	86.7

MODULE 02								FINAL RESULTS					
								Average of Sub-Totals					
Attendance	Exercise-1	Exercise-2	Exercise HSE	Total Exercises	Action Plan	Sub-Total	Pass / Fail	Exercise	Attendance	Action Plan	Grand Total	Pass / Fail	Comment
30%	15%	15%	15%	45%		100%		45%	30%	25%	100%		
24	11	12	14	37	18	79	Pass	26	24	18	68	Pass	
24	9	10	14	33	12	69	Pass	24	24	12	60	Pass	
30	10	11	12	33	20	83	Pass	35	30	20	85	Pass	
Did not attend the course							Did not attend the course						
30	8	11	13	32	20	82	Pass	35.75	30	20	85.75	Pass	
15	0	0	0	0	14	29	Fail	7.5	15	14	36.5	Fail	
21	0	12	10	22	16	59	Pass	18.5	21	16	55.5	Pass	
18	14	0	0	14	18	50	Pass	14.5	18	18	50.5	Pass	
30	10	13	15	38	20	88	Pass	38	30	20	88	Pass	
30	13	12	14	39	18	87	Pass	39	30	18	87	Pass	
30	12	12	15	39	20	89	Pass	36	30	20	86	Pass	
12	0	0	0	0	0	12	Fail	19.5	12	0	31.5	Fail	
24	10	11	12	33	13	70	Pass	35.5	24	13	72.5	Pass	
30	10	12	14	36	20	86	Pass	37	30	20	87	Pass	
18.6	0	12	15	27	0	45.6	Pass	31.5	18.6	0	50.1	Pass	
Did not attend the course							Did not attend the course						

Total Participants	14
Pass	12
Fail	2
Pass %age	86

Total Participants	14
Pass	12
Fail	2
Pass %age	86

iv-c) Trainee's Comments

iv-c-1) Mr. Jawad Shahid:

iv-c-1a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Class participation of the candidates present in the training may be taken into kind consideration of marking & course weightage. Secondly, energy audit course are also required to be introduced as it is a specialized skill which is basically required at our WASAs. Furthermore the visit which would be conducted by the JICA experts, over WASA Faisalabad should be scheduled after consultation with the concerned so that the benefits of the visit may be maximized.	Class Participation already has weightage. Energy Audit was previously conducted during OJT sessions, now we formally including it in our five days electrical training course.	✓			
2	The length of training session is very short. Please increase it. It would be one month to two months. Some people complaint that hostel is full of ghosts. Please console this problem.	The duration of training is set after consultation with all stake holders and is tailored in a way to facilitate all participants i.e from XENs to Sub-Engineers.		✓		
3	Field activities should be increased.	This has already been done. Follow up visit at each WASA only comprises of onsite activities				✓
4	Field activities/exercises during site visits should be more.				✓	
5	Training will be helpful in future.					✓

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
6	We are satisfied with this training, some training should be arranged for lower staff please.	OJT centers are to be established in each WASA where lower staff will be trained by the WASA officials who got trained in academy along with support from Al-Jazari faculty.		✓		
7	Training program was very informative and very much relevant to our work.					✓
8	A good experience for me in whole five days. I convey this knowledge to our subordinates and guide them.					✓
9	Provision of training certificates. Provision of TADA.	Certificates should be issued to the participants who passed the courses at the academy. This issue will be raised to the stakeholders to address it as soon as possible.	✓			
10	Very skill full training overall.					✓
11	All the lectures were very satisfying and exercises and field work were excellent. Real videos and pictures should be added to notify the problems and wrong way implementation and suggest the standard procedures of operation & maintenance.	Suggestion noted, SOPs are already included in the course. However nonstandard practices and harmful effect of bypasses we are including in training.	✓			

iv-c-1b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					✓
2	No comments.					✓
3	No comments.					✓
4	No comments.					✓
5	No comments.					✓
6	No comments.					✓
7	No comments.					✓
8	No comments.					✓
9	No comments.					✓
10	Need to improve bedroom cleaning in hostel.	Proper SOPs are developed with the course instructors and admin department. Situation will be better next time.	✓			
11	No comments.					✓

iv-c-2) Mr. Ihsan ul Haq:

iv-c-2a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Provision of certificate and opportunity for different training from JICA Company in Japan. So that WASA authority can gain more skills and opportunity.	Certificates will be issued on a later date. Immediate certificate award can be discussed with the management. Request of Japan Trainings will be conveyed to JICA experts				✓
2	Provision of training in foreign country.	The matter may be forwarded to WASA high-up				✓
3	The lectures and exercises were very helpful for us and we try to implement the HSE, and provide the PPE, to our staff for their safety and save the life of our staff. Such HSE training Program should be arranged in all WASAs so that lower staff can be trained and awareness can be achieved.	Thank You. Since you are being trained therefore kindly train the support staff & for any further help. Our assistance is always available.		✓		
4	Very skillful training overall.	Thank you. Kindly explain to others & implement		✓		
5	We are satisfied by this training. Please arrange training for lower staff.	Kindly implement as you are being trained & for further support forward the request through your respective WASAs. We are always available. And share the knowledge and skills with the lower staff.		✓		

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
6	More field visits must be done to increase hands on experience.	Our Team conducts follow-up visits for hands on activity. Communications may help for betterment. We are always ready for assistance. Unfortunately HSE was not part of the original scope, so time constraints are there.		✓		
7	Basics of HSE should be given to every employee of WASA.	Through PCGIP WASAs have basic PPEs. Also Employees may forward request to procure PPEs. WASA officers are responsible to provide basic PPEs. PPEs will help with motivation and trainings on how to use them.	✓			
8	Field activities/exercises during site visits and class lecture time should be increased.	Since the course is regarding O & M of Electrical equipment therefore field activities/exercises during site visits and class lecture time may be increased if course is solely meant for HSE.		✓		

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
9	Less time provided for HSE training.	Time Slot will be increased when HSE course shall run independently.		✓		
10	Training session should be increased about 1 to 2 months.	Trainings have been designed upon the pattern of international practices. So time duration may be extended according to special needs			✓	

iv-c-2b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					
2	No comments.					
3	No comments.					
4	Need to improve bedroom cleaning.	Proper SOPs are developed with the course instructors and admin department. Situation will be better next time.	✓			
5	No comments.					

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
6	No comments.					
7	No comments.					
8	No comments.					
9	No comments.					
10	No comments.					

添付資料 4.43

2018 年春期研修「O&M of Electrical Equipment」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

iv) O&M of Electrical Equipment
- Spring 2018 Training -

iv-a) Course evaluation

Table 1 Course Evaluation – Mr. Jawad Shahid: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	2	18	20	3.9
2	Class Exercise	0	0	5	15	20	3.8
3	Field activities/exercises during site visit	0	0	3	17	20	3.9
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	6	14	20	3.7
5	Schedule & Length of training	1	0	9	10	20	3.4
6	Technical knowledge of the trainer	0	0	3	17	20	3.9
7	Presentation skills of the trainer	0	0	2	18	20	3.9
8	Training relevant to your job duties	0	2	6	12	20	3.5
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	0	8	12	20	3.6

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 2 Course Evaluation – Mr. Ihsan ul Haq: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	8	12	20	3.6
2	Class Exercise	0	0	8	12	20	3.6
3	Field activities/exercises during site visit	0	0	8	10	18	3.6
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	9	11	20	3.6
5	Schedule & Length of training	1	1	10	8	20	3.3
6	Technical knowledge of the trainer	0	0	5	15	20	3.8
7	Presentation skills of the trainer	0	0	5	15	20	3.8
8	Training relevant to your job duties	0	0	10	10	20	3.5
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	0	7	13	20	3.7

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

iv-b) Trainee's evaluation

Sr No.	Name	Organization	Designation	Attendance	Ex-P1	Ex-P2	Ex-P3	Ex G-1	Ex G-2	Ex- HSE	Action Plan	Total Electrical Panels (100)	Total Generators (100)	Total (200)	Percentage Marks	Status
1	Mr. Saadullah	WASA Multan	Sub Engineer	30	8	10	10	10	10	11.5	13	71	74.5	145.5	72.75	Pass
2	Mr. Muhammad Mustafa	WASA Multan	Sr. Sub Engineer	30	10	12	10	10	11	12	13	75	76	151	75.5	Pass
3	Mr. Farrukh Zeb	WSSP	Assistant Manager	30	14	15	12	12	13	12	16	87	83	170	85	Pass
4	Engr. Sheharyar	WSSP	Assistant Manager	30	10	15	12	12	13	13.5	16	83	84.5	167.5	83.75	Pass
5	Ms. Fatima Eiman	WASA Lahore	DD Hydrology	30	12	15	12	13	13	15	16	85	87	172	86	Pass
6	Mr. Riaz William	WASA Lahore	DD P&E	30	10	10	12	11	11	11.25	15	77	78.25	155.25	77.625	Pass
7	Mr. Ammar Arshad	WASA Lahore	SDO Electricity	30	15			15		11.25	17	62	73.25	135.25	67.625	Pass
8	Ms. Mamoonah Ishtiaq	WASA Lahore	SDO Electricity	24	12	15	12	14	14	15	20	83	87	170	85	Pass
9	Mr. Tariq Jameel	WASA Lahore	SDO Jubile tw	30	14	13	14	12	12	13.5	18	89	85.5	174.5	87.25	Pass
10	Mr. Areez Irfan	WASA Lahore	SDO Kahna	24	10	10	12	11			16	72	51	123	61.5	Pass
11	Ms. Maria Khalid	WASA Lahore	SDO WWT	30	10	15	12	12	14	15	17	84	88	172	86	Pass
12	Mr. M. Waseem Malik	WASA Lahore	Sub Engineer	30	14	12	12	15	11	15	17	85	88	173	86.5	Pass
13	Mr. Amir Tufail	WASA Lahore	Sub Engineer	30	12	15	12	13	14	15	18	87	90	177	88.5	Pass
14	Mr. Ahmad Gill	WASA Faisalabad	Assistant Director	30	12	15	12	13	14	15	19	88	91	179	89.5	Pass
15	Mr. Muhammad Farooq	WASA Faisalabad	Sub Engineer	30	15	15	12	14	13	12	17	89	86	175	87.5	Pass
16	Mr. Sudheer Ahmed Abbasi	WASA Rawalindi	Sub Engineer	30	15	15	13	15	11	10.5	15	88	81.5	169.5	84.75	Pass
17	Mr. Malik Mehmood Iqbal	MC Ahmad pur East, Bahawalpur	MO (I&S)	30	12	12	10	13	12	15	13	77	83	160	80	Pass
18	Mr. Syed Ali Raza	MC Ahmad pur East, Bahawalpur	Junior Clerk	30	12	12	10	14	12	15	16	80	87	167	83.5	Pass
19	Mr. Sarmad Waheed	WASA Gujranwala	Sub Engineer	24	15	15	12	15	13	15	16	82	83	165	82.5	Pass
20	Mr. Jahanzaib Khan	WASA Kohat	Assistant Manager ws	30	13	15	12	15	14	12	19	89	90	179	89.5	Pass

Total Participants	20
Pass Participants	20
Pass Percentage	100%

iv-c) Trainee's Comments

iv-c-1) Mr. Jawad Shahid:

iv-c-1a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	The training content was very well planned & delivered. The academy is doing an excellent job and I hope I get to attend more trainings. i am a civil engineer & could easily understand the context of the training. It was a training setup for all engineering. The most prominent and useful part of the training were the exercises which helped to understand the concept.					✓
2	Although not relevant to my job duties, but this training is a huge source of learning delivery of every concept or lecture is through practical demonstration. I appreciate the concept of short exercises after every lecture as these increases or enhance the conceptual learning.					✓
3	He gives the complete overall picture of information in the lectures.					✓
4	Mr. Jawad is a good instructor he have a good knowledge about in field which is very necessary for us & every field staff in WASA.					✓
5	Training on using different tools like power analyzer, voltmeter, and ammeter one by one will be more beneficial.	We Already included hands on experience of equipment. During follow up visit each participant will use it again.		✓		

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
6	Training was related to my job and it was very informative.					✓
7	The arrangement of training in Aljazari academy was very good. As we are from TMA, we never attended such well organized and informative training. This training will help us a lot to overcome problems in our organization. Academy should arrange more trainings like this in future, it will help a lot to solve problems.			✓		

iv-c-1b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					
2	No comments.					
3	No comments.					
4	No comments.					
5	No comments.					
6	No comments.					
7	No comments.					

iv-c-2) Mr. Ihsan ul Haq:

iv-c-2a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	It was very informative and related to my job.					✓
2	Mr. Ihsan ul Haque have very good knowledge of safety measure for work in field.					✓
3	The lecture was delivered really very well.					✓
4	I am thankful to all team of academy for providing such good and useful training specially 3-phase and HSE related information was very useful, I will try my level best to implement my learnings from training in my organization.					✓
5	Usage of safety equipment must be performed in the class.				✓	

iv-c-2b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	The hostel facility must be improved.			✓		
2	No comments.					
3	No comments.					
4	No comments.					
5	No comments.					

添付資料 4.44

2017 年秋期研修「O&M of Mechanical Equipment」のコースへの評価、
講師への評価、受講生の合否、受講生からのコメントへの対応

v) O&M of Mechanical Equipment
- Fall 2017 Training -

v-a) Course evaluation

Table 1 Course Evaluation – Mr. Mubasher Cheema: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	9	6	15	3.4
2	Class Exercise	0	2	9	4	15	3.1
3	Field activities/exercises during site visit	0	0	9	6	15	3.4
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	3	6	6	15	3.2
5	Schedule & Length of training	2	2	7	3	14	2.8
6	Technical knowledge of the trainer	0	0	6	9	15	3.6
7	Presentation skills of the trainer	0	0	7	8	15	3.5
8	Training relevant to your job duties	0	2	7	6	15	3.3
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	8	5	14	3.3

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 2 Course Evaluation – Mr. Ihsan ul Haq : Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	2	6	7	15	3.3
2	Class Exercise	1	0	9	5	15	3.2
3	Field activities/exercises during site visit	0	5	6	4	15	2.9
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	2	6	7	15	3.3
5	Schedule & Length of training	4	4	6	1	15	2.3
6	Technical knowledge of the trainer	0	1	7	7	15	3.4
7	Presentation skills of the trainer	0	2	4	9	15	3.5
8	Training relevant to your job duties	0	3	10	2	15	2.9
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	11	2	14	3.1

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

v-b) Trainee's evaluation

				MODULE 01					
				01 Jan To 02 Jan. 2018					
Sr. No.	Name	Organization	Designation	Attendance	Exercise 1	Exercise-2	Action Plan	Sub-Total	Pass / Fail
				30%	20%	25%	25%	100%	
1	Mr. Waseem ud din	WASA Quetta	Assistant Engineer	22.8	15.0	20.0	25.0	82.8	Pass
2	Mr. Kamran Khan	WASA Quetta	Sub-Engineer	25.2	15.0	20.0	25.0	85.2	Pass
3	Mr. Muhammad Fiaz	WASA Multan	Sub Engineer	30.0	12.0	22.0	25.0	89.0	Pass
4	Mr. Abdul Qadir Abid	WASA Multan	Sub Engineer	30.0	20.0	25.0	25.0	100.0	Pass
5	Mr. Sadheer Ahmed Abbasi	WASA Rawalpindi	Sub Engineer	25.2	20.0	20.0	25.0	90.2	Pass
6	Mr. Amir Hussain Shah	WASA Rawalpindi	Sub Engineer	25.2	20.0	16.0	25.0	86.2	Pass
7	Mr. Makhdoom Babar	WASA Faisalabad	Deputy Director	30.0	20.0	23.0	25.0	98.0	Pass
8	Mr. Asad Ali	WASA Faisalabad	Deputy Director	10.0	0.0	0.0	25.0	35.0	Fail
9	Mr. Ali Husnain	WASA Gujranwala	Assistant Director	25.2	20.0	13.0	25.0	83.2	Pass
10	Mr. Waqar Sarwar	WASA Gujranwala	Sub Engineer	25.2	20.0	18.0	25.0	88.2	Pass
11	Mr. Sh. Muhammad Imran	WASA Lahore	SDO	25.8	18.0	23.0	25.0	91.8	Pass
12	Mr. Mohd. Saad Siddique	WASA Lahore	SDO (E&M)	30.0	20.0	22.0	25.0	97.0	Pass
13	Mr. Muhammad Irshad	WASA Lahore	Sub Engineer	Not Attended					
14	Mr. Zain Rasheed	WASA Lahore	Sub Engineer	30.0	10.0	16.0	25.0	81.0	Pass
15	Mr. Wahaj Khan	WASA Lahore	Sub Engineer	0.0	0.0	0.0	25.0	25.0	Fail
16	Mr. Zohaib	WASA Lahore	SDO (E&M)	Not Attended					
17	Mr. Omair Masood	WASA Lahore	SDO (E&M)	30.0	20.0	22.0	25.0	97.0	Pass

Total Participants	15
Pass	13
Fail	2
Pass %age	86.7

MODULE 02						MODULE 03						MODULE 04					FINAL RESULTS				
02 Jan To 03 Jan. 2018						03 Jan To 05 Jan. 2018						05 Jan. 2018					Average of Sub-Totals				
Attendance	Exercise-1	Exercise-2	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise-1	Exercise-2	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercises	Action Plan	Grand Total	Pass / Fail
30%	30%	15%	25%	100%		30%	30%	15%	25%	100%		30%	45%	25%	100%		30%	45%	25%	100%	
11.4	27.0	0.0	25.0	65.3	Pass	0.0	0.0	0.0	25.0	25.0	Fail	30.0	25.0	25.0	80.0	Pass	16.1	22.2	25.0	63.3	Pass
30.0	26.0	13.0	25.0	94.0	Pass	30.0	30.0	14.0	25.0	99.0	Pass	30.0	45.0	25.0	100.0	Pass	28.8	40.8	25.0	94.6	Pass
30.0	26.0	12.0	25.0	93.0	Pass	30.0	30.0	14.0	25.0	99.0	Pass	30.0	45.0	25.0	100.0	Pass	30.0	40.3	25.0	95.3	Pass
30.0	28.0	12.0	25.0	95.0	Pass	30.0	30.0	14.0	25.0	99.0	Pass	30.0	45.0	25.0	100.0	Pass	30.0	43.5	25.0	98.5	Pass
30.0	23.0	15.0	25.0	93.0	Pass	30.0	30.0	14.0	25.0	99.0	Pass	30.0	35.0	25.0	90.0	Pass	28.8	39.3	25.0	93.1	Pass
30.0	12.0	15.0	25.0	82.0	Pass	30.0	30.0	14.0	25.0	99.0	Pass	30.0	35.0	25.0	90.0	Pass	28.8	35.5	25.0	89.3	Pass
30.0	26.0	13.0	25.0	94.0	Pass	30.0	26.0	15.0	25.0	96.0	Pass	30.0	45.0	25.0	100.0	Pass	30.0	42.0	25.0	97.0	Pass
30.0	20.0	10.0	25.0	85.0	Pass	30.0	27.0	15.0	25.0	97.0	Pass	30.0	40.0	25.0	95.0	Pass	25.0	28.0	25.0	78.0	Pass
15.0	18.0	0.0	25.0	58.0	Pass	20.0	28.0	13.0	25.0	86.0	Pass	30.0	40.0	25.0	95.0	Pass	22.6	33.0	25.0	80.6	Pass
30.0	27.0	13.0	25.0	95.0	Pass	30.0	29.0	12.0	25.0	96.0	Pass	30.0	45.0	25.0	100.0	Pass	28.8	41.0	25.0	94.8	Pass
22.8	24.0	11.0	25.0	82.8	Pass	22.8	18.0	15.0	25.0	80.8	Pass	22.8	35.0	25.0	82.8	Pass	23.6	36.0	25.0	84.6	Pass
30.0	29.0	13.0	25.0	97.0	Pass	30.0	30.0	13.0	25.0	98.0	Pass	30.0	45.0	25.0	100.0	Pass	30.0	43.0	25.0	98.0	Pass
Not Attended						Not Attended						Not Attended					Not Attended				
30.0	23.0	11.0	25.0	89.0	Pass	30.0	27.0	14.0	25.0	96.0	Pass	30.0	45.0	25.0	100.0	Pass	30.0	36.5	25.0	91.5	Pass
0.0	0.0	0.0	25.0	25.0	Fail	20.0	24.0	15.0	25.0	84.0	Pass	30.0	45.0	25.0	100.0	Pass	12.5	21.0	25.0	58.5	Pass
Not Attended						Not Attended						Not Attended					Not Attended				
30.0	29.0	13.0	25.0	97.0	Pass	30.0	30.0	13.0	25.0	98.0	Pass	30.0	45.0	25.0	100.0	Pass	30.0	43.0	25.0	98.0	Pass

Total Participants	15
Pass	14
Fail	1
Pass %age	93.3

Total Participants	15
Pass	14
Fail	1
Pass %age	93.3

Total Participants	15
Pass	15
Fail	0
Pass %age	100.0

Total Participants	15
Pass	15
Fail	0
Pass %age	100

v-c) Trainee's Comments

v-c-1) Mr. Mubasher Cheema:

v-c-1a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Make the training more relevant to WASA and field jobs. Also arrange visits in different WASAs for more understanding of different operating systems.	Making it relevant is always a continuous improvement process with evolving conditions and we will continue to do so. Arranging visits to WASA sites can be limited due to time constrains		✓		
2	Field activities should be more.	A valid suggestion and we would adopt as much as possible, again time constraint is the issue		✓		
3	Everything was very good.	Thank you.				✓
4	Please organize different training for Sub-Engineers, Assistant directors & Deputy directors as per knowledge, capacity building and job responsibility of the trainer / candidate or officer. Please use better technologies that can be adapted in WASA. Also include positive points of WASAs, to encourage other WASA & that can be adapted by other WASAs. Educational visits to private or developed companies should be included for exposure.	In this phase of the project, trainings topics are as per the project scope. More topics or operational areas can be covered in the next phase. We cover both areas for improvement and best practice examples from WASAs, later part needs to improve. Visit to other companies or facilities are limited due to logistical constraints. WASAs requested to shorten the training modules		✓		
5	Keep maximum percentage of practical work especially about submersible pump	This cycle we covered insulation testing procedure, specific to	✓			

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
		submersible pumps. Next cycle we plan to add more				
6	No comments.					✓
7	We had a wonderful experience here in training, Mr. Mubasher conducted training with great effort and gave us very good environment. We learned a lot related our job duties. Certificates should be provided after training to encourage participants.	Thank you for your participation. Certificates will be issued later.			✓	
8	We enjoyed and learned a lot in training. Behavior of trainers, management and all staff was very nice n supportive. This training will improve our performance. JICA should continue such training programs in future. We request JICA to provide certificates for all trainings.	Thank you for your participation. Certificates will be issue.			✓	
9	Increase the duration of the training period and make much more field visits. Training about every machinery in use by WASA should be included. Make maximum field exercises. Training should also be categorized with respect to the problems relevant to WASAs.	Modules durations were reduced upon overwhelming feedback from WASAs. Visit to field or facilities are limited due to time constraints. We try to focus on WASA O&M issues and will continue to do so		✓		
10	Such training should be carried out periodically to train us and sustain our knowledge.	These trainings will continue with a planned schedule		✓		
11	There is some room of improvement for field activities	We agree there is always room for improvement and we are		✓		

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
		working on it, especially hands on exercises				
12	No comments.					✓
13	Training material can be in more detail. Field activities should be more. Training regarding O&M of disposal pumps and electrical equipment should also be conducted.	Detailed notes are available upon request. Disposal pumps are also centrifugal pumps, visits to disposal station were not done due to time constraints. We have a separate module for electrical components		✓		
14	No comments.					✓

v-c-1b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					✓
2	No comments.					✓
3	No comments.					✓
4	No comments.					✓
5	Please provide safety tools to candidates to go to sites for check & balance and training session videos in USB, when he leaves academy & keep LED in hostel rooms. Please JICA & Al-Jazari Academy should also visit other WASAs.	We tried to provide safety tools which are required for the site. LED and videos in USB, we will with the Management. Training session is for only 5 days so it's not possible to go several WASA sites	✓			
6	A DVD is provided us for the glimpse of training Program rather it should be replaced with USB because DVD players have been obsolete now a days.	We will discuss with the management if it is feasible.		✓		
7	No comments.					✓
8	Arrangements were very good and we are thankful for this.	Thank you for your participation				✓
9	The first most important suggestion that the printed forms notes should be in color print because that cannot easily readable/visible of pictures.	We have provided soft copy of the training material to save the expense and the environment.				✓

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
10	Kindly provide hand bags to carry files.	We can discuss with the management			✓	
11	There is some room of improvement for food quality.	Sure, we will continue to strive for the best	✓			
12	Jug and glasses should be provided in hostel rooms. Wall clock should be there in rooms of hostel. Heaters should be provided in lounge of hostel. Washroom cleaning in hostels should be improved. Transport should be provided for participants living in hostel. Hangers are small in changing room. Power socket should be there near beds. Internet should be provided 24/7 in hostel.	Logistics arrangements were improved but we will try to do better.		✓		
13	No comments.					✓
14	Wall clocks in hostel should be placed. Jug & glass should be placed in every room. Heaters should be provided in lounge of hostel. Maintain snooker table. Transport should be provided for participants living in hostel. Washroom cleaning in hostels should be improved. Air freshener should be in rooms. There should be partition in changing room. Towel should be changed regularly	Logistics arrangements were improved but we will try to do better.		✓		

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
	Provide room service at night too. Internet service should be 24/7 in hostel rooms.					

v-c-2) Mr. Ihsan ul Haq:

v-c-2a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Make HSE more relevant to WASAs.	It's relevant to WASA but we will try better.		✓		
2	Time for training is very short.	Primarily this course is for O&M of mechanical equipment, we may plan a separate HSE module in the next phase of this project			✓	
3	Field activities should be more.	We will try to include more.	✓			
4	HSE time is very short, need to increase time for HSE to get better understanding about HSE.	Primarily this course is for O&M of mechanical equipment, we may plan a separate HSE module in the next phase of this project			✓	
5	Training period for HSE is too short and please provide some tools or outfits related to HSE when candidates completes his training and keep maximum percentage for field work related to HSE.	Primarily this course is for O&M of mechanical equipment, we may plan a separate HSE module in the next phase of this project.		✓		
6	Has to improve field exercises. Increase time of training. Presentation should be in Urdu language with effective communication skills not only reading of PPT slides.	Primarily this course is for O&M of mechanical equipment, we may plan a separate HSE module in the next phase of this project.		✓		

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
		We will increase the use of Urdu language.				
7	We learned a lot in HSE training. Implementing on it we can save losses of lives and resources. In very short time Ihsan sb taught us HSE very well. Kindly increase time for HSE.	Thank you for your participation. Primarily this course is for O&M of mechanical equipment, we may plan a separate HSE module in the next phase of this project.		✓		
8	More time should be given to present and for field activities.	Primarily this course is for O&M of mechanical equipment, we may plan a separate HSE module in the next phase of this project. Will replace some class time with more hands-on exercises.		✓		
9	Capacity building of WASA Quetta shall be considered, as it need more attention. It even does meet standards of WASA Lahore, we are far behind.	Please keep coming to trainings. Unfortunately, the project scope does not directly cover WASA Quetta.			✓	
10	HSE should be in more detail.	Primarily this course is for O&M of mechanical equipment, we may plan a separate HSE module in the next phase of this project.		✓		

v-c-2b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					✓
2	No comments.					✓
3	No comments.					✓
4	No comments.					✓
5	No comments.					✓
6	Should provide hand bags to carry files with him. Provide the material in soft form in USB port not in CD form. Ensure darkness in the classroom when using projector for presentation and videos.	We can discuss with the management			✓	
7	Hostel hall should be covered with glass so that heater can work properly.	We can discuss with the management			✓	
8	No comments.					✓
9	No comments.					✓
10	No comments.					✓

添付資料 4.45

2018 年春期研修「O&M of Mechanical Equipment」のコースへの評価、
講師への評価、受講生の合否、受講生からのコメントへの対応

v) O&M of Mechanical Equipment
- Spring 2018 Training -

v-a) Course evaluation

Table 1 Course Evaluation – Mr. Mubasher Cheema: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	4	13	17	3.8
2	Class Exercise	0	0	9	8	17	3.5
3	Field activities/exercises during site visit	0	0	10	7	17	3.4
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	9	8	17	3.5
5	Schedule & Length of training	0	2	10	5	17	3.2
6	Technical knowledge of the trainer	0	0	6	11	17	3.6
7	Presentation skills of the trainer	0	0	2	15	17	3.9
8	Training relevant to your job duties	0	1	10	6	17	3.3
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	8	8	17	3.4

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 2 Course Evaluation – Mr. Ihsan ul Haq : Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	8	8	16	3.5
2	Class Exercise	0	0	9	7	16	3.4
3	Field activities/exercises during site visit	0	0	8	8	16	3.5
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	12	4	16	3.3
5	Schedule & Length of training	0	2	9	5	16	3.2
6	Technical knowledge of the trainer	0	0	8	8	16	3.5
7	Presentation skills of the trainer	0	0	8	8	16	3.5
8	Training relevant to your job duties	0	0	11	5	16	3.3
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	8	7	16	3.4

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

v-b) Trainee's evaluation

				MODULE 01							MODULE 02							
				April 9th To April 10th, 2018							April 10th To April 11th, 2018							
Sr. No.	Name	Organization	Designation	Attendance	Exercise 1	Exercise-2	Total Exercise	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise-1	Exercise-2	Total Exercise	Action Plan	Sub-Total	Pass / Fail	
				30%	20%	25%		25%	100%		30%	30%	15%		25%	100%		
1	Mr. Basharat Ali	WASA Multan	Sub Engineer	28.5		10.0	10.0	25.0	63.5	Pass	28.5	29.0	13.0		42.0	25.0	95.5	Pass
2	Mr. Syed Ali Raza	MC. APE,BWP	Junior Clerk	30.0	18.0	22.0	40.0	25.0	95.0	Pass	30.0	29.0	14.0		43.0	25.0	98.0	Pass
3	Mr. Muhammad Shehzad Malik	MC. APE,BWP	Disposal Driver	30.0	12.0	24.0	36.0	25.0	91.0	Pass	30.0	29.0	14.0		43.0	25.0	98.0	Pass
4	Mr. Farman Ali	WSSP	Manager – WS & WWM	30.0	20.0	25.0	45.0	25.0	100.0	Pass	30.0	26.0	12.0		38.0	25.0	93.0	Pass
5	Mr. Suhail Feroz	WSSP	Assistant Manager WS	24.0	20.0	25.0	45.0	25.0	94.0	Pass	24.0	26.0	13.0		39.0	25.0	88.0	Pass
6	Mr. Waqas Liaqat	WASA Lahore	XEN	30.0	20.0	22.0	42.0	25.0	97.0	Pass	30.0	29.0	15.0		44.0	25.0	99.0	Pass
7	Ms. Fatima Eiman	WASA Lahore	Assistant Director	30.0	20.0	25.0	45.0	25.0	100.0	Pass	30.0	27.0	14.0		41.0	25.0	96.0	Pass
8	Mr. Muhammad Fayyaz	WASA Lahore	sdo	Not Attended							Not Attended							
9	Mr. Muhammad Faisal Sarwar	WASA Lahore	sdo	24.0	20.0	22.0	42.0	25.0	91.0	Pass	24.0	29.0	13.0		42.0	25.0	91.0	Pass
10	Mr. Qasim Tariq	WASA Lahore	Sub Engineer	28.5	20.0	23.0	43.0	25.0	96.5	Pass	28.5	29.0	10.0		39.0	25.0	92.5	Pass
11	Mr. Rana Rehman Ali Zia	WASA Lahore	Sub Engineer	30.0	7.0	24.0	31.0	25.0	86.0	Pass	30.0	28.0	13.0		41.0	25.0	96.0	Pass
12	Mr. Muhammad Waqas Younis	WASA Lahore	Sub Engineer	30.0	12.0	23.0	35.0	25.0	90.0	Pass	30.0	27.0	14.0		41.0	25.0	96.0	Pass
13	Mr. Muhammad Ishaq	WASA Multan	Sub Engineer	Not Attended							Not Attended							
14	Mr. Mohsin Javed	WASA Lahore	Sub Engineer	30.0	20.0	13.0	33.0	25.0	88.0	Pass	30.0	28.0	13.0		41.0	25.0	96.0	Pass
15	Mr. Muhammad Umer Farooq	WASA Lahore	Sub Engineer	30.0	20.0	22.0	42.0	25.0	97.0	Pass	30.0	20.0	10.0		30.0	25.0	85.0	Pass

				MODULE 03							MODULE 04						
				April 11th To April 12th, 2018							April 13th, 2018						
Sr. No.	Name	Organization	Designation	Attendance	Exercise-1	Exercise-2	Total Exercise	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise		Total Exercise	Action Plan	Sub-Total	Pass / Fail
				30%	20%	25%		25%	100%		30%	45%			25%	100%	
1	Mr. Basharat Ali	WASA Multan	Sub Engineer	28.5	18.0	25.0	43.0	25.0	139.5	Pass	28.5	45.0		45.0	25.0	98.5	Pass
2	Mr. Syed Ali Raza	MC. APE,BWP	Junior Clerk	30.0	20.0	24.0	44.0	25.0	143.0	Pass	30.0	45.0		45.0	25.0	100.0	Pass
3	Mr. Muhammad Shehzad Malik	MC. APE,BWP	Disposal Driver	30.0	20.0	24.0	44.0	25.0	143.0	Pass	30.0	45.0		45.0	25.0	100.0	Pass
4	Mr. Farman Ali	WSSP	Manager – WS & WWM	30.0	20.0	25.0	45.0	25.0	145.0	Pass	30.0	45.0		45.0	25.0	100.0	Pass
5	Mr. Suhail Feroz	WSSP	Assistant Manager WS	24.0	19.0	25.0	44.0	25.0	137.0	Pass	24.0	10.0		10.0	25.0	59.0	Pass
6	Mr. Waqas Liaqat	WASA Lahore	XEN	30.0	17.0	20.0	37.0	25.0	129.0	Pass	30.0	39.0		39.0	25.0	94.0	Pass
7	Ms. Fatima Eiman	WASA Lahore	Assistant Director	30.0	19.0	25.0	44.0	25.0	143.0	Pass	30.0	45.0		45.0	25.0	100.0	Pass
8	Mr. Muhammad Fayyaz	WASA Lahore	sdo	Not Attended							Not Attended						
9	Mr. Muhammad Faisal Sarwar	WASA Lahore	sdo	24.0		10.0	10.0	25.0	69.0	Pass	24.0	10.0		10.0	25.0	59.0	Pass
10	Mr. Qasim Tariq	WASA Lahore	Sub Engineer	28.5	18.0	23.0	41.0	25.0	135.5	Pass	28.5	39.0		39.0	25.0	92.5	Pass
11	Mr. Rana Rehman Ali Zia	WASA Lahore	Sub Engineer	30.0	18.0	25.0	43.0	25.0	141.0	Pass	30.0	33.0		33.0	25.0	88.0	Pass
12	Mr. Muhammad Waqas Younis	WASA Lahore	Sub Engineer	30.0	20.0	25.0	45.0	25.0	145.0	Pass	30.0	45.0		45.0	25.0	100.0	Pass
13	Mr. Muhammad Ishaq	WASA Multan	Sub Engineer	Not Attended							Not Attended						
14	Mr. Mohsin Javed	WASA Lahore	Sub Engineer	30.0	18.0	25.0	43.0	25.0	141.0	Pass	30.0	36.0		36.0	25.0	91.0	Pass
15	Mr. Muhammad Umer Farooq	WASA Lahore	Sub Engineer	30.0	17.0	20.0	37.0	25.0	129.0	Pass	30.0	20.0		20.0	25.0	75.0	Pass

				FINAL RESULTS					
				Average of Sub-Totals					
Sr. No.	Name	Organization	Designation	Attendance	Exercises	Action Plan	Grand Total	Pass / Fail	
				30%	45%	25%	100%		
1	Mr. Basharat Ali	WASA Multan	Sub Engineer	28.5	35.0	25.0	88.5	Pass	
2	Mr. Syed Ali Raza	MC. APE,BWP	Junior Clerk	30.0	43.0	25.0	98.0	Pass	
3	Mr. Muhammad Shehzad Malik	MC. APE,BWP	Disposal Driver	30.0	42.0	25.0	97.0	Pass	
4	Mr. Farman Ali	WSSP	Manager – WS & WWM	30.0	43.3	25.0	98.3	Pass	
5	Mr. Suhail Feroz	WSSP	Assistant Manager WS	24.0	34.5	25.0	83.5	Pass	
6	Mr. Waqas Liaqat	WASA Lahore	XEN	30.0	40.5	25.0	95.5	Pass	
7	Ms. Fatima Eiman	WASA Lahore	Assistant Director	30.0	43.8	25.0	98.8	Pass	
8	Mr. Muhammad Fayyaz	WASA Lahore	sdo	Not Attended					
9	Mr. Muhammad Faisal Sarwar	WASA Lahore	sdo	24.0	26.0	25.0	75.0	Pass	
10	Mr. Qasim Tariq	WASA Lahore	Sub Engineer	28.5	40.5	25.0	94.0	Pass	
11	Mr. Rana Rehman Ali Zia	WASA Lahore	Sub Engineer	30.0	37.0	25.0	92.0	Pass	
12	Mr. Muhammad Waqas Younis	WASA Lahore	Sub Engineer	30.0	41.5	25.0	96.5	Pass	
13	Mr. Muhammad Ishaq	WASA Multan	Sub Engineer	Not Attended					
14	Mr. Mohsin Javed	WASA Lahore	Sub Engineer	30.0	38.3	25.0	93.3	Pass	
15	Mr. Muhammad Umer Farooq	WASA Lahore	Sub Engineer	30.0	32.3	25.0	87.3	Pass	

				MODULE 01							MODULE 02																						
				April 9th To April 10th, 2018							April 10th To April 11th, 2018																						
Sr. No.	Name	Organization	Designation	Attendance	Exercise 1	Exercise-2	Total Exercise	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise-1	Exercise-2	Total Exercise	Action Plan	Sub-Total	Pass / Fail																
				30%	20%	25%		25%	100%		30%	30%	15%		25%	100%																	
16	Mr. Naeem Ahmed	WSSC Kohat	Sub Engineer	Not Attended							Not Attended																						
17	Mr. Amir Tufail	WASA Lahore	Sub Engineer	24.0		10.0	10.0	25.0	59.0	Pass	24.0	28.0	10.0		38.0	25.0	87.0	Pass															
18	Mr. Noman Noor	WASA Faisalabad	Assistant Director	24.0	20.0	25.0	45.0	25.0	94.0	Pass	24.0	28.0	14.0		42.0	25.0	91.0	Pass															
19	Mr. Hafiz Awais Jamal	WASA Faisalabad	Assistant Director	30.0	20.0	25.0	45.0	25.0	100.0	Pass	30.0	30.0	15.0		45.0	25.0	100.0	Pass															
20	Mr. Muhammad Salman	WASA Gujranwala	Assistant Director	30.0	20.0	21.0	41.0	25.0	96.0	Pass	30.0	28.0	12.0		40.0	25.0	95.0	Pass															
21	Mr. Noshad Aslam	WASA Rawalpindi	Sub Engineer	28.5	18.0	15.0	33.0	25.0	86.5	Pass	28.5	20.0	12.0		32.0	25.0	85.5	Pass															
22	Mr. Zohaib Aftab	WASA Rawalpindi	Sub Engineer	30.0	20.0	21.0	41.0	25.0	96.0	Pass	30.0	28.0	11.0		39.0	25.0	94.0	Pass															
				<table border="1"> <tr> <td>Total Participants</td> <td>19</td> </tr> <tr> <td>Pass</td> <td>19</td> </tr> <tr> <td>Fail</td> <td>0</td> </tr> <tr> <td>Pass %age</td> <td>100.0</td> </tr> </table>							Total Participants	19	Pass	19	Fail	0	Pass %age	100.0	<table border="1"> <tr> <td>Total Participants</td> <td>19</td> </tr> <tr> <td>Pass</td> <td>19</td> </tr> <tr> <td>Fail</td> <td>0</td> </tr> <tr> <td>Pass %age</td> <td>100.0</td> </tr> </table>							Total Participants	19	Pass	19	Fail	0	Pass %age	100.0
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				MODULE 03							MODULE 04						
				April 11th To April 12th, 2018							April 13th, 2018						
Sr. No.	Name	Organization	Designation	Attendance	Exercise-1	Exercise-2	Total Exercise	Action Plan	Sub-Total	Pass / Fail	Attendance	Exercise		Total Exercise	Action Plan	Sub-Total	Pass / Fail
				30%	20%	25%		25%	100%		30%	45%			25%	100%	
				Not Attended							Not Attended						
16	Mr. Naeem Ahmed	WSSC Kohat	Sub Engineer														
17	Mr. Amir Tufail	WASA Lahore	Sub Engineer	24.0		10.0	10.0	25.0	69.0	Pass	24.0	23.0		23.0	25.0	72.0	Pass
18	Mr. Noman Noor	WASA Faisalabad	Assistant Director	24.0	19.0	25.0	44.0	25.0	137.0	Pass	24.0	10.0		10.0	25.0	59.0	Pass
19	Mr. Hafiz Awais Jamal	WASA Faisalabad	Assistant Director	30.0	19.0	25.0	44.0	25.0	143.0	Pass	30.0	39.0		39.0	25.0	94.0	Pass
20	Mr. Muhammad Salman	WASA Gujranwala	Assistant Director	30.0	20.0	20.0	40.0	25.0	135.0	Pass	30.0	30.0		30.0	25.0	85.0	Pass
21	Mr. Noshad Aslam	WASA Rawalpindi	Sub Engineer	28.5	19.0	25.0	44.0	25.0	141.5	Pass	28.5	27.0		27.0	25.0	80.5	Pass
22	Mr. Zohaib Aftab	WASA Rawalpindi	Sub Engineer	30.0	20.0	25.0	45.0	25.0	145.0	Pass	30.0	45.0		45.0	25.0	100.0	Pass
				Total Participants							Total Participants						
				19							19						
				Pass							Pass						
				19							19						
				Fail							Fail						
				0							0						
				Pass %age							Pass %age						
				100.0							100.0						

				FINAL RESULTS				
				Average of Sub-Totals				
Sr. No.	Name	Organization	Designation	Attendance	Exercises	Action Plan	Grand Total	Pass / Fail
				30%	45%	25%	100%	
				Not Attended				
16	Mr. Naeem Ahmed	WSSC Kohat	Sub Engineer	24	20.3	25.0	69.3	Pass
17	Mr. Amir Tufail	WASA Lahore	Sub Engineer	24	35.3	25.0	84.3	Pass
18	Mr. Noman Noor	WASA Faisalabad	Assistant Director	30	43.3	25.0	98.3	Pass
19	Mr. Hafiz Awais Jamal	WASA Faisalabad	Assistant Director	30	37.8	25.0	92.8	Pass
20	Mr. Muhammad Salman	WASA Gujranwala	Assistant Director	29	34.0	25.0	87.5	Pass
21	Mr. Noshad Aslam	WASA Rawalpindi	Sub Engineer	30.0	42.5	25.0	97.5	Pass
22	Mr. Zohaib Aftab	WASA Rawalpindi	Sub Engineer					
				Total Participants		19		
				Pass		19		
				Fail		0		
				Pass %age		100.0		

v-c) Trainee's Comments

v-c-1) Mr. Mubasher Cheema:

v-c-1a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	<p>Informative and technical skills enhancement sessions. Industrial tours should also be included for better exposure. In-house laboratories / workshop should also be built. Foreign trainings on this platform should also be arranged for wider exposure. Following subjects should also be covered.</p> <ol style="list-style-type: none"> 1. Estimation, rate analysis, civil / mechanical 2. PPRA rules 3. Service rules 4. PEEDA act 5. B&R regulations 	<p>Suggestions of additional courses are noted, we may consider them in future programs/projects.</p>			✓	
2	Sir Mubashar is such a nice instructor	Thanks				✓
3	No comments.					
4	Management related courses are highly suggested.	We may include them in future programs			✓	
5	No comments.					
6	No comments.					

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
7	I highly appreciate the initiative to properly train the employees of WASA and the efforts put by trainer in delivering knowledge and material so effectively and through practical demonstration. I recommend that you should also train the workers and lower staff or observer.	Thanks, we need your support. Lower staff trainings are to follow.		✓		
8	Mr. Mubasher Cheema has good skills to guide this lecture. Presentation skills of the trainer has good experience. Technical knowledge is very good. Classroom discipline is very good.					✓
9	Sir Mubashar is such a nice trainer.					
10	No comments.					
11	No comments.					
12	No comments.					
13	No comments.					
14	These training session must be repeated to improve our capabilities to adopt the system to provide best services to people.	These trainings are cyclic to deliver continuous improvements				✓
15	I am very satisfied to sir Mubasher Cheema sb class lecture / field activities / class exercises. These training session must be repeated to improve our capabilities to adopt the system to provide best services to people.	Thanks, These trainings are cyclic to deliver continuous improvements				✓
16	First of all, I am grateful to Al-Jazari Academy because it has arranged a very	Thanks,				✓

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
	good training. I have learned a lot with this training. I am also grateful to Mr. Mubasher. His training along with his conduct gave me practical experience about mechanical equipment and 5S. I will try my best to act according to this training so that I and my organization can get benefits from this. I am also thankful to JICA, I have also received help from them. I will discuss the benefits of this training with my chairman. These trainings should be held regularly.	These trainings are cyclic to deliver continuous improvements				
17	I have learned a lot with this training and I will try my best to transfer the knowledge to my colleagues and I will also advise them to strictly follow it but sometimes senior officers become obstacle in it. In that case, I will contact you for the guidance. Thanks.	Thanks, good to know your intentions				✓

v-c-1b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					
2	No comments.					
3	The hostel room and other facilities like mess hall, TV lounge needed to be maintained properly to protect this asset. Once the building and other staff goes out of operation then it's very much impossible to bring it back in operation for a government entity.	We will continue to strive for the better.		✓		
4	No comments.					
5	No comments.					
6	No comments.					
7	No comments.					
8	No comments.					
9	No comments.					
10	No comments.					
11	No comments.					
12	No comments.					
13	No comments.					
14	No comments.					

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
15	No comments.					
16	No comments.					
17	No comments.					

v-c-2) Mr. Ihsan ul Haq:

v-c-2a) Course:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	Although informative and interesting but scope should also be increased regarding ISO certifications.	Good suggestion, as we grow we will consider				✓
2	Ihsan Sb has huge knowledge about field environment.	Thanks				✓
3	No comments.					
4	No comments.					
5	No comments.					
6	No comments.					
7	No comments.					
8	Mr. Ihsan ul haq's safety guide is a very good lecture.	Thanks				✓
9	No comments.					
10	No comments.					
11	No comments.					
12	No comments.					
13	No comments.					
14	Training session of lower staff such as s/worker, APF, PF, JPOs and maintenance staff is also necessary. This will enhance their technical skills. Now my experience of this training session is exceptional.	Lower staff trainings are planned		✓		

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
15	These training session must be repeated to improve our capabilities to adopt the system to provide best services to people.	These are cyclic and continuous				✓
16	First of all, I am grateful to Al-Jazari Academy and JICA. I am also very grateful to Mr. Ihsan ul haq. With their help, I got the practical knowledge of HSE. It has many benefits. With this, health and work of WASA employees can be improved and WASA will get a good reputation with this and WASA employees will also be happy to work and working capabilities of WASA employees will also be enhanced with this. I will discuss the benefits of HSE with my chairman.	Thanks, we need your support				✓
17	I have learned a lot about HSE through this training. HSE is not only applicable in our offices but also in our houses and daily work. I will try to guide my colleagues and my family members about HSE and I will try to ensure that they follow it. Thanks	Thanks, we need your support				✓

v-c-2b) Logistics:

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
1	No comments.					
2	No comments.					
3	This academy is a huge asset for Pakistan and hostel rooms, TV lounge and mess halls are not properly maintained up to the mark to protect this asset for longer period of time.	Thanks				✓
4	No comments.					
5	No comments.					
6	No comments.					
7	No comments.					
8	No comments.					
9	No comments.					
10	No comments.					
11	No comments.					
12	No comments.					
13	There should be a 3-4 course meal.	Within budget we try to deliver the best			✓	
14	No comments.					
15	No comments.					

Trainee's Form	Comments	Response/ Solution	Time Required to Solve			
			Urgent	Normal	Later	Not Applicable
16	No comments.					
17	No comments.					

添付資料 4.46

2017 年秋期研修「Asset Management」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

vi) Asset Management
- Fall 2017 Training -

vi-a) Course evaluation

Table 1 Course Evaluation: Q1 - Q10

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training content	0	4	7	0	11	2.6
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	3	8	1	12	2.8
3	Relevance of On-Site Training Activities	0	1	8	2	11	3.1
4	Overall Presentation Quality of Trainer	0	2	8	2	12	3.0
5	Trainer's Expertise on Topics and Topic Delivery Skills	0	1	6	5	12	3.3
6	Time & Length of Training	5	3	4	0	12	1.9
7	Practical Activities & Exercise at Class Room	1	3	8	0	12	2.6
8	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.	0	3	9	0	12	2.8
9	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	0	1	7	4	12	3.3
10	Overall Quality of Training	0	3	9	0	12	2.8

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 3 Course Evaluation : Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	12	0

Table 5 Course Evaluation : Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Asset, Asset Coding, Asset Condition Assessment and Asset Risk Assessment.	11	1

	Ways to apply condition and risk in Asset Management Decisions and how to make Asset Management Plans.	11	1
	Financial appraisal techniques (NPV, IRR, BCR), Asset Recording & Reporting and Fixed Asset Register.	10	2
	Different features of Asset Management Information System (AMIS) and its usefulness in Asset Management.	11	1
	Excel based tools for analyzing and categorizing the asset data in terms of its condition diameter, age and other attributes.	12	0
	Understanding of asset specific analysis using Microsoft Excel and preparation of graphs through pivot table.	12	0
	Preparation of Asset Replacement Plan	10	2
	Understanding of asset inspection and asset life cycle management.	11	1
	Understanding of basic GIS concept, and applications of GIS in asset management.	12	0
	Learning of basic GIS mapping skills, query functions and preparation of cost estimates.	11	1

vi-b) Trainer's evaluation

Table 1 Trainer's Evaluation : Mr. Asif Iqal

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	3	5	4	12	4.1
2	Technical Knowledge of the Content	0	0	3	2	7	12	4.3
3	Explanation of the Content	0	1	2	6	3	12	3.9
4	Demonstration & Professional Capability of Handling Equipment	0	1	5	3	3	12	3.7
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	5	4	3	12	3.8
6	Management of on-site Training	0	2	4	3	3	12	3.6
7	Time Management	1	2	4	2	3	12	3.3
8	Presentation Skills	0	0	3	4	5	12	4.2
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	4	5	3	12	3.9

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Trainer's Evaluation : Ms. Aneeqa Azeem

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	2	6	4	12	4.2
2	Technical Knowledge of the Content	0	0	2	3	7	12	4.4
3	Explanation of the Content	0	0	2	4	6	12	4.3
4	Demonstration & Professional Capability of Handling Equipment	0	0	2	4	6	12	4.3
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	2	4	6	12	4.3
6	Management of on-site Training	0	0	4	3	5	12	4.1
7	Time Management	0	1	4	5	2	12	3.7
8	Presentation Skills	0	0	2	4	6	12	4.3
9	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	3	4	5	12	4.2

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

vi-c) Trainee's evaluation

Sr No.	Name	Department	GIS Map (10)	Data analysis (10)	Asset Condition assessment (in Field)	AM Plan & Presentation	AM & Replacement Plan (actual) (45)	Total Marks (100)	Total Marks 75%	Attendance Marks (25%)	Final Marks (100%)	Remarks
								A	B= A*75%	C	D=B+C	
1	Rana Zaheer	WASA Lahore	0	0	0	0	0	0	0.0	0.0	0.0	Fail
2	Nisar Ahmad	WASA Lahore	8	8	10	0	0	26	19.5	20.0	39.5	Fail
3	Sadoon Basraa	WASA Lahore	10	10	10	0	0	30	22.5	20.0	42.5	Fail
4	Qandeel Farima	WASA Lahore	10	10	10	19	30	79	59.3	25.0	84.3	Pass
5	Samina Arif	WASA Lahore	9	9	10	19	30	77	57.8	25.0	82.8	Pass
6	Mavra	WASA Lahore	9	10	10	19	35	83	62.3	25.0	87.3	Pass
7	Said Ullah	WASA Multan	8	5	10	13	25	61	45.8	25.0	70.8	Fail
8	Muhammad Adeel	WASA Multan	8	7	10	15	30	70	52.5	25.0	77.5	Pass
9	Zaeema Aman	WASA Lahore	9	10	10	18	0	47	35.3	25.0	60.3	Pass
10	Hina Saleem	WASA Lahore	0	10	10	20	30	70	52.5	19.0	71.5	Pass
11	Ajmal	WASA Gujranwala	7	0	0	13	0	20	15.0	15.0	30.0	Fail
12	Tanzeel	WASA Gujranwala	7	0	10	18	0	35	26.3	20.0	46.3	Fail
13	Muhammad Maqbool	WASA Faisalabad	8	6	10	15	0	39	29.3	20.0	49.3	Fail
14	Chanzeb Khan	WASA Rawalpindi	0	0	10	16	35	61	45.8	12.5	58.3	Pass
15	Ishfaq	WASA Rawalpindi	0	0	10	13	30	53	39.8	22.5	62.3	Pass

vi-d) Trainee's Comments

Participants Feed Back		Response/Solution	Time required to solve			
Category	Detail		Urgent	Normal	Later	Not Applicable
Suggestions for further improvement of training materials	Handouts were not placed in order. It was difficult to find them.	Handouts will be placed according to lecture schedule.	√			
	Add more videos. Related videos shall be added in the course. Practical videos should be added in PPT slides. More related slides shall be involved in the training materials.	Videos were already provided. However, will be considered for next session.			√	
	Please provide good internet connections.	Good connections will be provided for next session.	√			
	Improve field knowledge. Examples or actual field achievements should be provided in the training materials.	Examples or actual field achievements were already provided to the participants.				√
Comments on overall training and length	Time duration should be short (max, two days). Training duration should be increased if the course is too much like we feel here. Training length & timing is perfect. The training length should be extended. Timing should match the office timing of officers/ participants.	In next session, training duration will be reduced from eight (8) to six (6) days.	√			
	The GIS course is too short. Kindly increase its time and length.	Will be considered as per requirement.	√			
Suggestions for further	Field activities should be added. We can learn more by	Field training has been already provided.		√		

improvement related to site visits and field training activities	site visits. There should be an arrangement to practically draw field information and then use this data to analyze. Field activities should be easy. More visits should be added in the course. Overall field related activities are satisfactory, but more field assets should be visited in future. Visit more sites nearby rather than less visits of those far away.	However, will be considered for next training session.				
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添付資料 4.47

2018 年春期研修「Asset Management」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

vi) Asset Management
- Spring 2018 Training -

vi-a) Course evaluation

Table 1 Course Evaluation – Mr. Asif Iqbal: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	1	5	8	14	3.5
2	Class Exercise	0	0	8	6	14	3.4
3	Field activities/exercises during site visit	0	1	10	3	14	3.1
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	4	10	14	3.7
5	Schedule & Length of training	0	3	6	5	14	3.1
6	Technical knowledge of the trainer	0	1	3	10	14	3.6
7	Presentation skills of the trainer	0	0	5	9	14	3.6
8	Training relevant to your job duties	0	2	7	5	14	3.2
9	Logistics arrangements (classroom, vehicles, food, hostels, communication etc.)	1	0	4	9	14	3.5

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 2 Course Evaluation – Mr. Nizam Ud Din: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	2	6	8	3.8
2	Class Exercise	0	0	2	6	8	3.8
3	Field activities/exercises during site visit	0	1	0	7	8	3.8
4	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	2	6	8	3.8
5	Schedule & Length of training	1	1	1	5	8	3.3
6	Technical knowledge of the trainer	0	0	1	7	8	3.9
7	Presentation skills of the trainer	0	1	1	6	8	3.6
8	Training relevant to your job duties	0	1	1	5	8	3.6
9	Logistics arrangements (classroom, vehicles, food, hostels, communication etc.)	0	0	2	6	8	3.8

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

vi-b) Trainee's evaluation

Sr. No.	Name	Department	AMIS (5)	Data analysis (10)	Asset Condition assessment (in Field) (10)	GIS Based Maps (10)	AM & replacement Plan (40)	Total Marks (75)	Attendance Marks (25)	Final Marks (100)	Remarks
1	Mr. Malik Arif Abbas	WASA Multan	5	9	8	8	0	30	25	55	Pass
2	Mr. Muhammad Nadeem	WASA Multan	5	10	8	8	0	31	25	56	Pass
3	Mr. Engr. Maqsood Ahmed	WSS Peshawar	5	10	9	8	25	57	25	82	Pass
4	Engr. Malik Salman Shafiq	WSS Peshawar	5	10	9	9	25	58	25	83	Pass
5	Mr. Ikram ullah	WSSC Mardan	5	10	8	9	25	57	25	82	Pass
6	Mr. Zafar Iqbal	WASA Rawalpindi	5	9	7	7	0	28	22.5	50.5	Pass
7	Mr. Khaliq Afzal	WASA Rawalpindi	5	9	8	8	0	30	22.5	52.5	Pass
8	Mr. Muhammad Riaz Malik	MC Bahawalpur	5	9	7	7	0	28	25	53	Pass
9	Mr. Muhammad Salman	WASA Gujranwala	5	9	Absent	5	0	19	15	34	Fail
10	Mr. Ghulam Hussain	WASA Lahore	5	9	8	9	35	66	25	91	Pass
11	Mr. Jahangir Israr	WASA Lahore	5	9	8	8	35	65	25	90	Pass
12	Mr. Haseeb Ahmad	WASA Lahore	5	10	8	9	0	32	25	57	Pass
13	Mr. Hafiz Muhammad Awais	WASA Lahore	5	9	8	8	0	30	25	55	Pass
14	Ms. Warda Raheem	WASA Lahore	5	10	7	8	35	65	25	90	Pass
15	Mr. Rana Asif Ali	WASA Lahore	5	Absent	7	Absent	0	12	15	27	Fail

vi-c) Trainee's Comments

Participants Feed Back		Response/Solution	Time required to solve			
Category	Detail		Urgent	Normal	Later	Not Applicable
Comments for Mr. Asif	Kindly nominate officials from WSS Peshawar for upcoming courses as these types are very informative and can help a lot.	The participation from WSSC Peshawar, Mardan and Kohat was very good. The academy will visit these entities and customize course to fulfill their needs as well. For now, it is necessary for Academy to obtain the nomination from Peshawar, Mardan and Kohat.	√	√		
	These training is very helpful and useful regarding the organization upgrading and individual skills.	Academy will continue the asset management course.	√			
	Internet facility should also be given.	Administrative matter. already resolved				√
	Such training should be conducted on regular basis, so the chances of learning new tools will enhance the capacity building of employees.	Academy will continue the course on regular basis.	√			
	Training period per day may be shortened and training duration should be 3 days.	The training duration will be reduced to five (5) days.	√			
	The bus used for field visit was full of dust.	Administration matter. Academy will provide a good bus.	√			
Field visit experience was too good, but vehicle used was not good.	√					
Comments for Mr. Nizam	Internet facility should be given.	Administrative matter. Already resolved.				√

添付資料 4.48

2017 年秋期研修「**Business Planning**」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

vii) Business Planning
- Fall 2017 Training -

vii-a) Course evaluation

Table 1 Course Evaluation: Q1 – Q9

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Difficulty Level of Training content	0	4	9	2	15	2.9
2	Quality of Training Material (PPT Slides, Handouts, Lecture Notes Etc.)	0	0	7	9	16	3.6
3	Overall Presentation Quality of Trainer	0	0	5	11	16	3.7
4	Trainer's Expertise on Topics and Topic Delivery Skills	0	0	4	12	16	3.8
5	Time & Length of Training	1	5	7	3	16	2.8
6	Practical Activities & Exercise at Class Room	0	2	10	4	16	3.1
7	Difficulty Level of Assessment and Evaluation (Assignment, Exercises, Project, Action Plan etc.)	0	5	9	2	16	2.8
8	Logistic Arrangement Such As (Class Room, Vehicles, Tea and Lunch etc.)	1	1	6	8	16	3.3
9	Overall Quality of Training	0	0	10	6	16	3.4

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 3 Course Evaluation: Q11

Q. No.	Question	Yes	No
11	Recommendation to Your Colleague	14	2

Table 5 Course Evaluation: Q15

Q. No.	Learning Outcomes	Accomplished	Not Accomplished
15. a)	Identify components of business plan	16	0
	Carry out the SWOT analysis	16	0
	Understand the benchmarking in WSS Utilities	16	0
	Carry out GAP analysis through qualitative and quantities data	16	0
	Able to target setting on the basis of GAP analysis	16	0
	Ability to conduct KSA and Job role analysis	14	2
	Using MS Excel for HR Database analysis and further planning.	14	2
	Practice on data to extract information from HR database using MS Excel.	14	2
	Identify causes of revenue management issues	16	0
	Formulate strategies for improvement a. Outdated database b. Bill distribution and collection c. Arrears Additional source of revenue	15	1
	Consolidation of all modules into business plan format.	16	0
	Understanding Financial Appraisal Techniques including NPV, IRR and BCR.	15	1
	Presentation of business plan.	15	1

vii-b) Trainer's evaluation

Table 1 Trainer's Evaluation: Mr. Asif Iqbal

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	2	5	9	16	4.4
2	Technical Knowledge of the Content	0	0	2	2	12	16	4.6
3	Explanation of the Content	0	0	1	7	8	16	4.4
4	Demonstration & Professional Capability of Handling Equipment	0	0	2	4	10	16	4.5
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	1	6	9	16	4.5
6	Time Management	0	0	4	6	6	16	4.1
7	Presentation Skills	0	0	0	5	10	15	4.7
8	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	6	8	16	4.4

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 2 Trainer's Evaluation: Ms. Aneeqa Azeem

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	3	3	5	5	16	3.8
2	Technical Knowledge of the Content	0	2	1	8	5	16	4.0
3	Explanation of the Content	0	2	3	6	5	16	3.9
4	Demonstration & Professional Capability of Handling Equipment	0	3	1	6	6	16	3.9
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	2	3	3	8	16	4.1

6	Time Management	0	0	3	6	7	16	4.3
7	Presentation Skills	0	4	1	4	7	16	3.9
8	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	2	1	6	7	16	4.1

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 3 Trainer's Evaluation: Mr. Muhammad Kashif

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	1	4	3	5	13	3.9
2	Technical Knowledge of the Content	0	1	4	2	6	13	4.0
3	Explanation of the Content	0	1	2	5	4	12	4.0
4	Demonstration & Professional Capability of Handling Equipment	0	1	3	4	4	12	3.9
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	1	4	2	6	13	4.0
6	Time Management	0	0	3	4	6	13	4.2
7	Presentation Skills	0	1	2	4	6	13	4.2
8	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	2	5	6	13	4.3

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

Table 4 Trainer's Evaluation: Mr. Rao Ali

Sr. No	Items	Below Average (1)*	Average (2)*	Good (3)*	Very good (4)*	Excellent (5)*	Total Answer	Average**
1	Qualification & Experience	0	0	3	6	7	16	4.3
2	Technical Knowledge of the Content	0	0	0	9	7	16	4.4
3	Explanation of the Content	0	0	1	8	7	16	4.4
4	Demonstration & Professional	0	0	3	5	8	16	4.3

	Capability of Handling Equipment							
5	Use of different Content Delivery Techniques (Group Discussion & Activities and exercises)	0	0	2	8	6	16	4.3
6	Time Management	0	0	3	6	7	16	4.3
7	Presentation Skills	0	0	3	4	9	16	4.4
8	Quality of Learning Materials (PPT Slides, Handouts, Lecture Notes)	0	0	0	12	4	16	4.3

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Below Average" (1) x number of answer in "Below Average" + "Average" (2) x number of answer in "Average" + "Good" (3) x number of answer in "Good" + "Very Good" (4) x number of answer in "Very Good" + "Excellent" (5) x number of answer in "Excellent") / "Total Answer"

vii-c) Trainee's evaluation

Sr. No.	Name	Department	Attendance (10)	Class Participation (10)	SWOT analysis (10)	PIP (10)	GAP (10)	FA (10)	BP & Presentation (40)	Final Marks (100%)	Remarks
1	Mr. Hafiz Rashid Rafique	WASA Lahore	10	6	7	7	10	10	33	83.0	Pass
2	Mr. Hafiz Shahid Jamil	WASA Lahore	10	7	9	7	10	10	35	88.0	Pass
3	Mr. Usman Ahmed	WASA Lahore	10	10	8	7	9	10	35	89.0	Pass
4	Mr. Ilyas Siddique	WASA Lahore	10	10	8	7	9	10	35	89.0	Pass
5	Mr. Qaiser Rasool	WASA Faisalabad	9.7	10	7	7	9	10	35	87.7	Pass
6	Ms. Sana Mehboob	WASA Faisalabad	9.7	10	7	7	9	10	30	82.7	Pass
7	Mr. Shakeel Shaukat	WASA Lahore	10	8	7	6	9	10	32	82.0	Pass
8	Mr. Muhammad Shahbaz	WASA Lahore	10	10	8	6	9	10	35	88.0	Pass
9	Mr. Muhammad Rashid	WASA Lahore	10	8	6	7	8	10	30	79.0	Pass
10	Mr. Abdul Moeed	WASA Lahore	8.75	10	9	9	10	10	38	94.8	Pass
11	Mr. Sadeer Abbasi	WASA Rawalpindi	8.75	7	7	7	8	10	34	81.8	Pass
12	Mr. Noushad Aslam	WASA Rawalpindi	6.25	3	7	0	0	0	0	16.3	Fail
13	Mr. Salman Ahmad	WASA Gujranwala	8.75	7	8	7	7	10	32	79.8	Pass
14	Mr. Muhammad Shafique	WASA Lahore	10	5	6	7	7	10	25	70.0	Pass
15	Mr. Ali Husnain	WASA Gujranwala	4.08	5	0	7	7	10	25	58.1	Fail
16	Mr. Sajjad Ahmad	WASA Multan	10	9	8	7	8	10	35	87.0	Pass
17	Mr. Omar Zaffar	WASA Multan	9.39	8	5	7	8	10	25	72.4	Pass

vii-d) Trainee's comments

Participants Feed Back		Response/Solution	Time required to solve			
Category	Detail		Urgent	Normal	Later	Not Applicable
Suggestions for further improvement of training materials	Training material should be circulated/shared by mail.	Training material will be shared by mail.	√			
	Projector is not good for eyes. So please use white board.	The projectors will be used, along with white boards.	√			
	I am from planning & design directorate. I will not recommend my colleagues of P&D rather I will recommend participants from finance & revenue directorates.	Will make an effort to increase participants from finance & revenue directorate.	√			
	Number of case study can be increased. A written test should also be arranged.	Will make an effort to increase case studies.			√	
	If training is related to the decision making then please call the high officials then training may be more effective.	Will make an effort to increase highly ranked officials.			√	
	May provide skills on MS office.	Will be considered in the future.			√	
	Page numbering of all lecture course.	Will be considered in the future.			√	
Comments on overall training and length	Time should increase at least one month. Training length is not enough. In my opinion, it should be of 15 days. Five modules require 15 to 20 days. Course time	In next session, training duration will be reduced from eight (8) to six (6) days.	√			

	is 12 to 15 days.					
	Timing should be reduced from 9 to 3 days. Time should be given for class assignment & projects. Length of training should not be more than a week.		√			

添付資料 4.49

2018 年春期研修「Business Planning」のコースへの評価、講師への評価、受講生の合否、受講生からのコメントへの対応

vii) Business Planning

- Spring 2018 Training -

vii-a) Course evaluation

Table 1 Course Evaluation – Mr. Asif Iqbal: Q1 – Q8

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	1	9	4	14	3.2
2	Class Exercise	0	1	6	7	14	3.4
3	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	7	7	14	3.5
4	Schedule & Length of training	1	4	8	1	14	2.6
5	Technical knowledge of the trainer	0	2	4	8	14	3.4
6	Presentation skills of the trainer	0	2	7	5	14	3.2
7	Training relevant to your job duties	0	5	7	2	14	2.8
8	Logistics arrangements (classroom, vehicles, food, hostels, communication etc.)	0	3	7	4	14	3.1

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 2 Course Evaluation – Ms. Aneeqa Azeem: Q1 – Q8

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	2	10	1	13	2.9
2	Class Exercise	0	2	7	4	13	3.2
3	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	2	7	4	13	3.2
4	Schedule & Length of training	0	3	8	2	13	2.9
5	Technical knowledge of the trainer	0	1	8	4	13	3.2
6	Presentation skills of the trainer	0	1	8	4	13	3.2
7	Training relevant to your job duties	0	4	8	1	13	2.8
8	Logistics arrangements (classroom, vehicles, food, hostels, communication etc.)	0	2	8	3	13	3.1

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

Table 3 Course Evaluation – Mr. Rehan Khalid: Q1 – Q8

Sr. No	How satisfied were you with:	Not Satisfied (1)*	Somewhat Satisfied (2)*	Satisfied (3)*	Very Satisfied (4)*	Total Answer	Average**
1	Class Lectures	0	0	7	7	14	3.5
2	Class Exercise	0	0	4	10	14	3.7
3	Quality of training materials (PPT slides, handouts, lecture notes, models, SOP formats etc.)	0	0	8	6	14	3.4
4	Schedule & Length of training	0	0	10	4	14	3.3
5	Technical knowledge of the trainer	0	0	4	10	14	3.7
6	Presentation skills of the trainer	0	0	5	9	14	3.6
7	Training relevant to your job duties	0	3	5	6	14	3.2
8	Logistics arrangements (classroom, vehicles, food, hostels, communication etc.)	0	1	9	4	14	3.2

Note: * is the scale of the evaluation.

** is calculated as follows:

Average = ("Not Satisfied" (1) x number of answer in "Not Satisfied" + "Somewhat Satisfied" (2) x number of answer in "Somewhat Satisfied" + "Satisfied" (3) x number of answer in "Satisfied" + "Very Satisfied" (4) x number of answer in "Very Satisfied") / "Total Answer"

vii-b) Trainee's evaluation

Sr No.	Name	Department	SWOT analysis (5)	HR Plan (5)	PIP (10)	Revenue Maps (5)	Revenue Managemnt Plan (5)	Financial Appraisal (10)	BP & Presentation (40)
1	Mr. Saeed Khan	WSS Peshawar	4	5	10	4	5	10	36
2	Ms. Asmara Rahat	WSS Peshawar	4	5	10	4	4	10	36
3	Ms. Sameera Zaib	WSSC Mardan	4.5	5	10	4	5	10	36
4	Mr. Muhammad Sohail	WSSC Mardan	4.5	5	10	4	5	10	36
5	Mr. Ahmed Raza	WASA Faisalabad	3.5	5	10	4	3	10	28
6	Mr. Muhammad Qasim	WASA Faisalabad	3.5	5	10	4	3	10	28
7	Mr. Muhammad Fiaz	WASA Multan	3.5	5	10	4	3	10	32
8	Mr. Arslan Ali Mughal	WASA Multan	3.5	5	10	4	3	10	32
9	Mr. Faheem Durrani	WSSC Kohat	4	5	10	4	5	10	36
10	Mr. Adnan Ahmad	WASA Lahore	3	5	10	0	3	10	24
11	Mr. Muhammad Irfan	WASA Lahore	3	5	0	2.5	3	10	24
12	Mr. Ateeq ur Rehman	WASA Lahore	3	5	10	2.5	3	10	24
13	Mr. Ishrat Ali	WASA Rawalpindi	3.5	5	10	4	3.5	10	36
14	Mr. Muhammad Atif Razaq	WASA Rawalpindi	3.5	5	10	4	3.5	10	36

Sr No.	Name	Department	Total Marks (80)	Attendance (10)	Class Participation (10)	Final Marks (100)	Remarks
1	Mr. Saeed Khan	WSS Peshawar	74	10	8	92	Pass
2	Ms. Asmara Rahat	WSS Peshawar	73	10	9	92	Pass
3	Ms. Sameera Zaib	WSSC Mardan	74.5	10	9	93.5	Pass
4	Mr. Muhammad Sohail	WSSC Mardan	74.5	10	9	93.5	Pass
5	Mr. Ahmed Raza	WASA Faisalabad	63.5	10	7	80.5	Pass
6	Mr. Muhammad Qasim	WASA Faisalabad	63.5	10	7	80.5	Pass
7	Mr. Muhammad Fiaz	WASA Multan	67.5	10	7	84.5	Pass
8	Mr. Arslan Ali Mughal	WASA Multan	67.5	10	7	84.5	Pass
9	Mr. Faheem Durrani	WSSC Kohat	74	10	9	93	Pass
10	Mr. Adnan Ahmad	WASA Lahore	55	8	7	70	Fail
11	Mr. Muhammad Irfan	WASA Lahore	47.5	8	7	62.5	Fail
12	Mr. Ateeq ur Rehman	WASA Lahore	57.5	10	7	74.5	Pass
13	Mr. Ishrat Ali	WASA Rawalpindi	72	10	8	90	Pass
14	Mr. Muhammad Atif Razaq	WASA Rawalpindi	72	10	8	90	Pass

vii-c) Trainee's Comments

Participants Feed Back		Response/Solution	Time required to solve			
Category	Detail		Urgent	Normal	Later	Not Applicable
Comments for Mr. Asif	More preparation is required for the training presentations.	The lecturer will prepare more.	√			
	SWOT analysis wasn't his specialized field, so he wasn't able to explain it clearly.	The lecturer will replace the SWOT with the Fish Bone Analysis, because the latter is more practical for WASA staffs.	√			
	Trainer had a good knowledge, but presentation skills are lacking, presentation seems more authoritative than friendly.	It is important to maintain discipline by creating a balance between authoritative and friendly environment. However, the lecturer will try to be more friendly.	√			
	Overall training session was very good. Please ask the authorities who nominates for training about the field work or education of the nominees has the relevant field of training topic when the training related nominees are here it will be more useful to serve in their departments.	Academy will request for WASAs to send their staffs in charge of business planning or its relevant fields.	√			
	The training was perfect, and I learn different techniques for bill distribution and recovery of arrears. But the main problem I have faced is that training period is too long that is 8 days. It should be reduced or may be conducted in different time.	The Academy will review the business planning course, in terms of lecture contents, duration, and others.	√			
Excellent opportunity for training		√				

	WSSC staff. We need more advance level of training especially on increase of terminal pressure at consumer level.				
	Duration of day may increase in steps.		√		
	Add lectures more GIS base.		√		
	Add more videos in lectures.	The lecturer will add more videos, group activities.	√		
	Activities in group		√		
	More interesting material can be added to make it attractive.		√		
	Need more time for detail of MIS.	Academy will provide good internet facility.	√		
Comments for Ms. Aneeqa	Increase duration of lecture.	The Academy will review the business planning course, in terms of lecture contents, duration, and others.	√		
	Need basic in lecture and participate with each participant.		√		
Comments for Mr. Rehan Khalid	Extend practical exercises.		√		
	Extend basic lectures.		√		

添付資料 4.50

2017年秋期研修「Leak Detection」で作成されたアクションプラン

Action Plan (Leakage Detection and Control)

WASA Lahore

Rashid Chaudhary (SDO)

Munir Afzal (SDO)

Mavra Khan (SDO)

Mudassar (SE)

Umair (SE)

Nazim (SE)

Preparation: In our area we have established two teams which comprise of the following members: 2- sub engineers, 2 head pipe fitters, 2 pipe fitters and assistant pipe fitters. Maps and drawings are available in Garden town sub division and P & D WASA Lahore. Following equipment will serve the purpose:- 2 Metal and 2 Non Metal pipe detectors, 2 Acoustic pipe detectors and 2 pressure recorders.

Basic Survey: Analysis of w.s & pressure through a 24 hour interval graph on pressure recorder. 20 % of the pipes in the area are HDPE pipes and 60 % of AC pipes while 20 % of MI pipes. Some of the pipes are found to be 30 years old. Some of them were replaced while some are in poor condition.

Plan: We will reduce 15 % of water losses by 2018. And by 2028 about 100 % of water loss will be reduced. For the survey in our area we used direct method of door to door data collection.

Action/Implementation: Main causes of the leakages are due to old age pipes of poor quality. House connections leakage is another main reason pipe laying under depth is another reason. Staff is prepared 24 hours for leakage repair of surface and underground water pipes. Counter measures for leakage are use of the equipments such as clamps, wooden cork and rubber etc.

Evaluation: The action plan will help control leakages in an effective way. It will also improve departmental services.

WASA Faisalabad

Hassan Mustafa (SDO)

Mohsin Ali (SE)

Preparation: - Establishment of the leakage detection team: -

1. Assistant directors (Team leader)
2. Sub engineers (Incharge)
3. Supervisors
4. Fitters.

-Preparation of water distribution maps and drawings (GIS system)

-Procurement of equipment for leakage detection i.e. non metal pipe locator, metal pipe locator, ultrasonic flow meter, pressure recorder, helium gas detector, acoustic leak detector.

Basic Survey:

- Analysis of water supply & pressure by means of instruments like pressure recorder in the certain area of the city as we have to divide the city in blocks.
- Survey about the pipe laid in that certain area about the pipe material, age of pipe, quality of pipe. On the basis of that survey conducted preventive work to be carried out like the safety equipments like PPEs (Preventive Protection Equipments).

Plan:

- Acoustic survey
- Measuring survey
- Road petrol
- Water pressure
- Correlating Survey

After that on the basis of survey conducted relative to pipe flow rate & pressure recorder also conduct the survey regarding non-revenue water and then set the target about to remove the loss of water for the next planning year.

Action Implementation:

- Leak survey as described in plan. Analysis of causes of leakage i.e. age of pipe/ material used /leaking from the joints.
- Leakage volume calculation. Distribution input- consumption
- Quick repair of the surface leakages/ or the leakage detected in the survey
- Counter measurement for leakages on the basis of the survey conducted regarding the pipe material/ age of pipe/ leaking from the joints/ tees etc, the detective pipe needs to be replaced in length.

Evaluation:

- Analysis of result: on the basis of action plan carried out in the certain locality what the outcomes from the repairing of leaks, replacing of pipe, compile all the data in the form of tables for further action plan.
- Compare plan with the action carried out site and then on these basis set the target plan for the next year also.
-

WASA Rawalpindi

Khalique Afzal (SDO)

Noshad Aslam (SE)

1. Establish the leakage detection team
2. Supervisor must be deputed to check the daily progress of the team.
3. May be updated the pipelines maps.
4. With the help of these equipments and site staff and think
5. I will easily find out water lines, leakages, pressure with my team and must be check the major cause of leakages. old lines, over pressure we must have the repairing items in the store every time like flangs, G. Joints, clamp, tee bend, tail piece, water supply pipe, wooden cork and rubber tubes.
6. After the repair work we must countercheck the site within 24 hours.
7. With these equipment and Leak Detection Team will must visit the area and tube wells on daily basis under the supervision of water supply supervisor.

WASA Multan

M. Arshad (SE)

M. Ikram (SE)

Preparation:

1. I establish my team for detection of leakage following team members list as under:
Sub engineer, supervisor, lineman and plumber or fitter
2. 1st of all I found new drawing or map/ prepare network map of this area
3. I use following equipment for leakage detection like non metal pipe locator and metal detector.

Basic Survey:

1. My team 1st check the water supplied time and water pressure at different time
2. We divide the city into blocks for proper supply of water and good quality of water of city people.
3. When we digging around pipe then we check pipe condition, pipe age and pipe quality and material check of pipe where use.

Plan:

1. 1st we set the target value of water supply of this area, how much quantity required for this area.
2. We design the pipe for 30 to 50 years of age and flow properly.

Action/ Implementation:

1. I sent my supervisor for checking leakges and we use the leakage equipment.
2. Quick repair is done where leakage is found.
3. For underground leakages we use these items
 - Socket
 - Clump

WASA Gujranwala

Muhammad Salman Ahmad (SDO)

Muhammad Abdul Rehman (SE)

Preparation:

- Establishment of the team: Two teams in each zone comprising of one sub engineers, two plumbers and two helpers with each pullember, should be made.
- The same team structure should be prepared in each zone.
- As Gujranwala has four zones, four teams will be prepared. Each one headed by the respective SDO.
- Map Preparation: Existing maps should be interpolated on the GIS with provision of marking leaks on the map on spot with the help of GPS.
- Procurement of equipment: Following Set of Equipment will be procured:
 - Ultrasonic flow meter, metal pipe locator and pressure recorder, non metal pipe locator, ultra sonic leak detector.

Basic Survey:

- Analysis of water supplied and water pressure:
- Water quality tests at tube wells and at terminal ends
- Water pressure tests at tube wells and terminals
- Divide city into blocks:
- City will be divided into the blocks.
- In each block, there will be a dedicated leakage detection team.
- Analysis of the pipe:
- In each zone, alongwith the demarcation of pipelines, the age and material of pipeline shall also be marked.
- Preventive Measures: Proper maintenance of air valves, safety equipment for the staff and survey time should be late at night. So that the general public is not disturbed.

Plan:

- Target time: December 2018
- Planning year, year 2017, year 2018
- Survey methods: pot rolling, survey of each block, starting from tw to tail ends, preparation of detailed maps after survey.

Action/Implementation:

- Leakage Survey: Survey of all the lines and identification of leakage points.
- Causes of leakages: analysis of the reasons why there are leakages.
- Leakage volume: Either the leakage is major or minor
- Quick repair: if the leakage is minor, repair it with clamp, wooden cork or rubber tube, if the leakage is major, repair it with gibault joint or replace the pipe.
- Systematic detection: if leakages underground are detected repair them periodically through out the planned time.
- Countermeasures: Make the house connection leak proof, if possible provision of 24/7 supply shall be made.

Evaluation:

- Analysis of the result: At the end of month, a comparison b/w plan and implementation shall be made if improvements are needed, the action plan shall be revised

WASA Quetta

1. WASA Quetta consists of four sub divisions; every sub division has its own office. There are 32 tube wells in our area.
2. If we receive a complaint about polluted water in an area then first of all our supervisor goes with the plumbers and fitters and fix the problems. If there is leakage it is repaired manually by digging at various locations and repairing accordingly.
3. Most of the complaints are from old house connections but due to lack of technologies these complaints are not solved within a optimum time.

添付資料 4.51

2017 年秋期研修「O&M of Sewer and Storm Water Drainage」で作成されたアクションプラン

ACTION PLAN FOR DESILTING OF DRAIN

35
40

- Prepared by
- Dr. Zainab-Abbas
(0320-3232444)
- Fiza Anjum
(0321-4969959)
- Muhammad Zohaib
(0334-7758331)
- Umar Farooq
(0300-7911296)

ACTION PLAN FOR DESILTING OF DRAIN

WASA, LAHORE

DRAIN SELECTED: GULSHAN RAVI DRAIN

TARGETED AREA: (10 km) [∴ 15 days]
ONE km

1. PURPOSE OF THE PLAN:-

Removal of sludge to increase drain capacity, to avoid over-flowing & flooded conditions in storm water drains.

2. HUMAN RESOURCES:-

TECHNICAL STAFF

- i) XEN (Drainage)
- ↓
- ii) SDO (Drainage)
- ↓
- iii) Sub-Engineer (02)
- ↓
- iv) Supervisor (02)
- ↓
- v) Others

OTHER-

- i) Heavy machine (02) operators
- ii) Truck drivers (04)
- iii) Sewer man (02)
- iv) Data Entry operator (01)
- v) Mechanic (02)

3. EQUIPMENT:-

Equipment	Quantity
Truck (4t)	2
Truck (2t)	1
Black Hoe (0.40m ³)	2
Clam Shell (0.4m ³)	3

→ IMPLEMENTATION OF HEALTH AND SAFETY EQUIPMENT DURING WHOLE ASSIGNMENT

Following safety measures will be taken during de-silting of drain,

<u>Activity</u>	<u>PPEs</u>
i) Survey of sludge deposit quantities / Flow rate measurement <i>Procedure = ?</i>	<ul style="list-style-type: none">• Traffic cones will be used for traffic routing to avoid traffic interference on working site• Staff who will measure sludge deposits must wear caps, safety boots and safety clothes.
ii) Implementation of cleaning	<ul style="list-style-type: none">• Traffic routing will be done according standard methods of health & Safety• Staff must wear PPEs (e.g safety boots caps and safety cloths)• Harness and life belts must be used during whole operation.

Health & Safety of whole staff is very important during whole process.

ACTIONS	METHODOLOGY	EQUIPMENT	TEAM	PRODUCTIVITY
Survey of sludge deposit quantities	Measurement of sludge	<ul style="list-style-type: none"> * Distance meter * Sludge measuring rods * Measuring tape * Safety equipment 	<ul style="list-style-type: none"> • Sub-engineer (02) • Supervisor (02) 	All calculations must be done with in 02 days.
Flow rate measurement	From result of survey of sludge deposit quantities, estimated flow is calculated and compared with original flow	<ul style="list-style-type: none"> * Flow meter (008) * Manual method 	<ul style="list-style-type: none"> * Sub-engineers * staff 	01 day
Make plan of cleaning / Implementation	Considering staff and equipment plan of cleaning is prepared included	<ul style="list-style-type: none"> * Computer * Trucks (4FE) * Trucks (2T) * Back Hoe * Clam Hoe * Clam Shell 	<ul style="list-style-type: none"> * Sub-engineer * Heavy machine operator * Truck driver * Sewer man * Data Entry operator 	10 days
Third Party Validation	Process implementation will be decided by TPV.	TPV equipment	TPV team	2 days

Whole Process will be monitored by SDO and will be reported to concerned XEN

WASA LAHORE DRAIN ACTION PLAN FOR DE-SILTING

Group members:

Muhammad Ali Haider

SDD

Hamza Sharif

Sub-Engg

Haris Sheikh

SDD

36
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Action Plan for Desilting Operation

Satokatla Drain Length: 1 km

(Section: 40 x 10 ft)

WASA Lahore
Muhammad Ali Haidar
0300-4388157

Hamza Shaif
0306-7132873

Hau's Sheikh
0334-5260934

Team details

A: Purpose of Plan

- * Optimize the flow of drain water
- * To avoid overflow and flooded conditions.
- * Proper drainage.

B: Human Resources

Director	1	✓
Dy Director	1	✓
Assis Director	1	✓
Sub-Engineer	2	✓
Supervisor	4	✓
Heavy Machine operator	10	
Truck driver	16	
Sewer man	4	
Traffic Routing Person	02	

C: Equipment:

Equipment	Quantity
Truck (8t)	2 ✓
Truck (4t)	6 ✓
Truck (2t)	8 ✓
Back Hoe (0.40 m ³)	4 ✓
Clam Shell (0.7 m ³)	2 ✓
Clam Shell (0.4 m ³)	4 ✓

D: Implementation

* Survey of sludge deposit quantities /

⇒ 2 days are required for 1 km

⇒ Drain section (40' x 10') Length = 1 km = 3280 ft

⇒ So on average 1 ft depth of sludge deposit found.

⇒ After calculation sludge volume = 131200 cft
= 3715 m³

Weight of that sludge deposit = 1560.3 tons

∴ (Using formula conversion)

(1 ton = 2.42 cubic meter)

* Equipments

- Maps
- Digital Camera
- Measuring Tape
- Staff rods
- Ranging rods
- PPE's

PPE's Required

- Harness belts,
- Masks
- Safety Shoes,
- Oxygen Cylinders,
- Goggles
- Helmets.

* Teams

- Two Sub-Engineer
- Each having 2 Supervisor.

* Flow rate calculation (Manually)

Calculation Required 2 days

* Teams

Engineers.

E: Make Plan of the Cleanings.

• HSE

- ⇒ Traffic Routing should be done by using Labour. (2 No's)
- ⇒ Warning Tape to be used. (2 Tapes)
- ⇒ First Aid Box should be at site. (2 No)
- ⇒ Area should be cordon off if there is less space.
- ⇒ Warning lights and warning signs to be installed (4 No's)

• Implementation

Two Teams having
Simultaneously

- 1 Sub-Engineer
- 2 Supervisor
- 5 Heavy Machine
operator
- 8 Truck drivers
- 2 Sewer man
- 01 Traffic Routing
Person

Equal Resources will work

- 1 Sub-Engineer
- 2 Supervisor
- 5 Heavy Machine
Operator
- 8 Truck drivers
- 2 Sewer man
- 01 Traffic routing
Person.

SCHEDULES FOR DESILTING

AT SATOKATLA DRAIN

REACH 0700 — 32480 ft

Dates 01-11-2016 to 16-11-2016

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Working items																
(1) Survey of sludge deposits	█															
(2) Flow rate calculation				█												
(3) To make plan of cleaning					█											
(4) Implementation of cleaning																

Note:

- * 156 ton of sludge will be removed from drain in one day.
- * Assistant director will visit the schedule and strictly observe the working according to schedule.
- * Deputy Director will visit the site daily and observe the working according to schedule.

San sewer Desilting Plan for October 2017

Zone - I
WASA-15

Sr No	Location / Date Name of / Dia of Line / Line	Total Length (ft)	Length to be desilting (ft)	Number of Manholes	Human Resource ①		Human Resource ②	
					Name of Subs Engr	Skill	Name of Supervisor	Shift
(1)	Rice, Ghouse Road 18" Ø to 21" Ø 2-10-17 to 7-10-17	4300	4300	86 Nos & 14 No/day	Mr. Gulshan 03226400051	III	Amarwal	III
(2)	Chaman Shah Road 24" Ø to 30" Ø 9-10-17 to 14-10-17	6500	4000	57 Nos & 9 No/day	Mr. Abdul Rehman 03223500300	III	Jaswal	III
(3)	Peeples Colony Road 24" Ø to 36" Ø 16-10-17 to 21-10-17	7200	3500	29 Nos & 5 No/day	Mr. Gulshan	III	Amarwal	III
(4)	Feroz wala Road 18" Ø to 24" Ø 23-10-17 to 31-10-17	9200	5500	71 Nos & 9 No/day	Mr. Abdul Rehman	III	Jaswal	III

		Machinery			Tools & Equipment						
Human Resource	Alternate Human Resource	Suction Machine	Pump Engine	Selfing Machine	Bucket	Rope	Trich	Hammer	Garbit	Mudbar	
③ Human Resource 8 Nos III	④ Alternate Human Resource 3 Nos III	Medium ① Nos GAK-1133 POL-2500	-	-	2 + 1	30 + 30	2 + 1	1 + 1	2 + 1	Karai 2 Nos	
8 Nos III	3 Nos III	-	24 BHP ① Nos POL-800F	Medium ① Nos GAK-413 POL-3000	2 + 1	25 + 25	2 + 1	1 + 1	2 + 1	Karai 2 Nos	
8 Nos III	3 Nos III	Large ① Nos GAK-333 POL-3000	-	-	2 + 1	30 + 30	2 + 1	1 + 1	2 + 1	Karai 2 Nos	
8 Nos III	3 Nos III	Large ① Nos GAK-335 POL-3000	-	-	2 + 1	30 + 30	2 + 1	1 + 1	2 + 1	Karai 2 Nos	

Health & Safety (PPE's)

Health & Safety (PPE's)								Contacts		Signatures	
Goggles Debris	Oxygen Cylinder	Tripped Stand	Refuse Bin/Box	Mask	Gloves	Shoes	Helmet + Jacket	An case of Emergency	Deputy Director	Assistant Director	
(2)	(2)	(2)	(2)	(4)	(8)	(8)	(8) + (8)	0321 6154000 0334455 989			
(2)	(2)	(2)	(2)	(4)	(8)	(8)	(8) + (8)	/			
(2)	(2)	(2)	(2)	(4)	(8)	(8)	(8) + (8)	/			

④ Action Plan For Desilting of Sewage Line U3 No 05 M.C BWP.

Purpose Plan

1) The Problem that we were facing related to sewage system in U3 No 05. The Flow rate of sewage is decreased with is the cause of over flow and leakage. For avoiding the leakage and overflow we have prepared plan for 1st one month.

2. Human Resources

Municipal officer (services)



Chief Sanitary Inspector



Sanitary Inspectors



Supervisor



Sewer man

36

40

3) Equipments.

Following Equipments will be used for desilting of sewage line.

- | | | |
|--------------------|---|------------|
| 1- Jetting Machine | — | 01 |
| 2- Sakar Machine | — | 01 |
| 3- Steel Rods | — | 10 → 20 FT |
| 4- Rope | — | 02 → 50 FT |

05 - Doll _____ 02

06 - steel wire _____ $\frac{1}{2}$ kg

07 - Safety belts _____ 02

08 - Gas mask with gas slunder } \rightarrow 01

09 - Calculator \rightarrow 01

10 - Torch \rightarrow 02

Implementation

[04]

- 1 - To measure quantity of sludge
- 2 - Calculation of flow rate
3. Plan of planer.
4. Implement.

(A) Survey of sludge deposit quantities

- \Rightarrow At first of all we have calculate the salt quantity
- \Rightarrow Adopt training Method.
- \Rightarrow Map related to sewerage line, Digital camera, measuring staff / Rod.
- \Rightarrow Two sanitary worker along with sanitary Inspector.
- \Rightarrow Teams visiting and surveying in U.C. No 5.

(B) We have **NO** equipment to measure flow Rate.

Implementation Schedule For Cleaners & Sweeper

S.No	Date	Location	Reach		Total Length to be detailed	Labour Deployed	Name of Sub-Engineer in-charge	Name of Chief Sanitary Inspector	Name of Sanitary Engineer	Remarks
			From	To						
1	01-11-2017 to 06-11-2017	Disposal of lat Begn	Disposal lat Begn	Bus Stand	1200	54 nos	DR nos	M. Riaz	M. Riaz	-
2	07-11-2017 to 15-11-2017	General Bus Stand	Bus Stand	Fareed Gate	3000	48" dia 36" dia 24" dia	10 nos	M. Riaz	M. Riaz	-
3	16-11-17 to 21-11-17	Circular Road	Fareed Gate	Fawara Chok	3200	24" dia 18" dia 15" dia	10 nos	M. Riaz	M. Riaz	-
4	22-11-17 to 26-11-17	Khokha Market	Khokha Market	New Multani gate	2500	30" dia 24" dia	10 nos	M. Riaz	M. Riaz	-
5	27-11-17 to 30-11-17	Multan Road	Multan gate	Manda chaudi	2000	24" dia	10 nos	M. Riaz	M. Riaz	-

1. M. Riaz

2. Nazam ul Islam

3. Phulwan Akbar

✓

⑤ P.P.E.

While Implementation of ~~work~~ work we have
adopt such P.P.E as under

1. Traffic Control Devices should be ~~used~~ used during work hours. ✓
 2. Gas monitor should be used before
Entrance of in sewer line/manholes ✓
 3. In the presence of gases we have to use
gas cylinder/gas mask ✓
 4. Sewer man/sentry worker wear P.P.E which
is used for cleaners ✓
 5. While Disinfecting of Manholes sewer man adopt
all safety means to avoid insects etc ✓
 6. After cleaning checked manholes fully
by chief sentry Inspector/Incharge/Supervisor. ✓
 7. At the end of working hours ~~the~~ Sewer man/S.W
bath and wear neat & clean cloths.
-

SCHEDULES

DESILTING SCHEDULE OF SEWER LINE MUNICIPAL COMMITTEE AHMEDPUR EAST DISTT. BAHAWALPUR

MONTH OF 15 OCTOBER-2017 TO 31 DECEMBER-2017

Name: Ghulam Abbas
 Designation: Municipal Officer (Infrastructure & Services)
 Municipal Committee Ahmedpur East District Bahawalpur

Sr. No.	Date	Location/Mohallah/Road	Reach		Total length to be desilted per day	Machinery
			From	To		
1	15-10-2017 to 30-10-2017	Main line Kangan Road	From Disposal station Zone 'A'	office M.C	1800	Sucker jetter, rods, buckets, robe, etc
2	01-11-2017 to 15-11-2017	Main line Market Road	Chungi Peer Wah	Madni Chowk	1200	Sucker jetter, rods, buckets, robe, etc
3	15-11-2017 to 25-11-2017	Shikari Mohallah	Old post office	Shikari Chowk	1000	Sucker jetter, rods, buckets, robe, etc
4	26-11-2017 to 10-12-2017	KIP Road	Disposal Shokatabad	Madina Masjid Chowk	1500	Sucker jetter, rods, buckets, robe, etc
5	11-12-2017 to 25-12-2017	Kachari Road	Bus Stand	Muncer Shabeed Chowk	1400	Sucker jetter, rods, buckets, robe, etc
6	26-12-2017 to 31-12-2017	Daira Nawab Sahib Road	Dispsal Railway	Shirani Chowk	900	Sucker jetter, rods, buckets, robe, etc


 Municipal Officer (I & S)

SCHEDULES

MONTHLY DESILTING SCHEDULE WITH LABOUR FOR THE MONTH OF NOVEMBER-2017

AHMEDPUR EAST DISTT, BAHAWALPUR

Name: Ghulam Abbas
 Designation: Municipal Officer (Infrastructure & Services)
 Municipal Committee: Ahmedpur East District Bahawalpur

Date	Name of Open side drain	Location	Total length (Rft)	Level to be desilted	Labour Deployed	Name of Sub Engineer	Name of Supervisor	Remarks
01-11-2017 to 30-11-2017	Daira Nawab sahib	Union Council Daira Nawab	2000		10	Hussain Shah	Mehrab Shah	1 st shift
01-11-2017 to 30-11-2017	Mohallah Katra	Mohallah Katra	1500		08	Alraf Hussain	Habib Shah	2 nd shift
01-11-2017 to 30-11-2017	Mohallah Shikari	Mohallah Shikari	1200		07	Alraf Hussain	Murtaza Ahmed	2 nd shift
01-11-2017 to 30-11-2017	Mohallah fatari	Mohallah fatari	1200		10	Alraf Hussain	Iqbal kadir	1 st shift
01-11-2017 to 30-11-2017	Mohallah safram	Mohallah safram	1300		11	Alraf Hussain	Athar	2 nd shift



01-11-2017 to 30-11-2017	Qadirabad	Qadirabad	1800		12	Husnain Shah	Rao Iqbal	1 st shift
01-11-2017 to 30-11-2017	Riaz Colony/sial colony/quraisabad/karceem colony	-	3000		15	Husnain Shah	sajjad	2 nd shift

[Signature]
 Municipal Officer (I&S)

5

Action Plan (WASA Multan)

Destiny of Sewerage line (Khanawal Road)

Participants :-

- 1) Malik Al Asif ^{Asst. Div. (0301-7777896)}
- 2) Muhammad Shehri ^{Sub-Eng. Cell# (0300-7742277)}

Purpose of Plan :-

35
40

For the preparation of Monitors

Destiny of Khanawal road is being scheduled.
Total length of this trunk sewer is almost 7780 ft.

Human Resource :-

- 1) Dy. Director
- 2) Asst. Director
- 3) Sub-Engineer
- 4) Supervisor
- 5) Team of 17 workers
- 6) Flusher/Jetter machine along with driver/Helper

Equipment :-

For the purpose of de-salting, following equipment is being used.

- 1) Flusher/Jetter Machine ✓
- 2) Suction Machine ✓
- 3) Pickup vehicle ✓
- 4) All PPE ✓
- 5) Desalting Tools like laser etc. ✓
- 6) Wash Machine ✓

Implementation :-

- 1) Check out the level of sewage to estimate the exact time of cleaning. ✓
- 2) Assessment of slope in the manholes. ✓
- 3) ~~Size~~ Size of sewer is comparing from 1/d 42" to 1/d 24". ✓

To Make Plan of Cleaning :-

- 1) First to assess the change from where desalting has to be start. ✓
- 2) Then make sure the traffic diversion plan for the smooth flow of traffic. ✓

3) Almost it will take 45 days to complete the deslting of aforesaid road. ✓

4) Along the proper arrangement of G.O. ✓ as deslting will be carried out at night.

Implementation of the Cleaning :-

Basic implementation of this deslting is to clear two machines with one team ✓
And after this ^{reach} p.a. of these two machines (aforesaid) will be deslited with winch machine with other team. ✓

Basic methodology of this is to clear one reach from downstream of Tumbharner. ✓
Almost 180-200 feet will be deslited out daily along with 2 machine deslited. ✓

Two supervisors - one for machine deslting and other for winch machine ^{reach} deslting along with their specified teams.

Schedule for Implementation

Date	Name of Place	Roads		Rft	Length	Remarks
		From	To			
1-3-17 To 10-3-17	Khemawal Road	Edga	Sel Hotel	2000	24" i/d	
11-3-17 To 20-3-17	Khemawal Road	Sel Hotel	Rastidat	2000	24" i/d 36" i/d	
21-3-17 To 30-3-17	Khemawal Road	Rastidat	Mape H/a	2000	36" i/d 27" i/d	
1-4-17 To 15-4-17	Khemawal Road	Mape H/a	chik Gudagi	1700	36" i/d 42" i/d	



Sudh Egr

Asst Director

Dy. Director

Implementation of HSE

With the help of Gas-Monitor/Detector, we will check first the gas detected for the safe-work.

Following gases will be checked before entry into the manholes in their prescribed limits.

1) Methane CH_4 detection

2) Carbon monoxide CO detection

3) Hydrogen Sulphide H_2S detection

Further more, the availability of First Aid box along with SCRE (Oxygen mounted safety equipment) and harness belt will be ensured for working.

Localities to Be Benefited :-

Khannawal road is the main artery entry to the city. One of the most populated and commercial road.

Following are the list of dense populated localities which will be benefited after the desilting of this trunk sewer.

- 1) Binmillah colony
- 2) Chak Langwala
- 3) Nazimabad colony
- 4) Ashraf colony
- 5) Hussain block
- 6) Manirabad colony etc.
- 7) Mustafa colony
- 8) Rashidabad
- 9) Palmer colony
- 10) Ahmad Park colony
- 11) Qaisarabad

添付資料 4.52

2017年秋期研修「O&M of Electrical Equipment」で作成されたアクションプラン



POST TRAINING ACTION PLAN

Training Title: Operation and Maintenance of electrical equipment Date of Training: _____

Name of Participant: FAROOQ Ahmad SUB ENGINEER.

Name of Organization: WASA Faisalabad.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Record Keeping Improvement #1

2. I try to ensure preventive maintenance of motors, pumps etc.

3. I pick idea of Labeling from Al-Jazari Academy that's a good and important thing.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. I take improvement in record keeping after 6 months because a lot of quantity of log books available.
2. I give idea to our higher Authority and sub co-ordinate of Preventive maintenance because it's good and important thing regarding WASA system.
3. I checked motor and pumps after every 2 weeks and maintain record.
4. I maintain labeling of motors, pumps, specific Area in my supervise Area. in this way easy to understand of every installation,
- 5.

Please identify required resources to implement this plan.

1. Man power (skilled)
2. Finance help.

Please identify any barriers or hindrances to the implement this plan.

1. Man power (skilled)
2. Finance help.

Other Comments or Notes: it is a pleasure moment for me. because it is a good Experience for me in Al-Jazari Academy Lahore. A special thanks to Mr. Jawad Shahid for his comprehensive ~~and~~ lecture and training during whole course.
Best Regards.

Farooq Ahmad sub ENGINEER WASA FAISALABAD.



POST TRAINING ACTION PLAN

Training Title: O&M of Electrical Equipment Date of Training: 11-15 Dec 2017

Name of Participant: Abubaker Ijaz

Name of Organization: WASA FDA

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. To apply 5s technique for the maintenance of office related record keeping;
2. To introduce a concept of oil conservation over the Diesel generators present at Disposal Stations;
3. To allocate a computer literate personnel for the management of the AMR ^{online} software to control energy consumption

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. 5s technique to be implemented by the end of Jan-2018
2. Introduction of concepts of oil conservation (Dec-2017)
3. Implementation of oil conservation (June-2018)
4. Allocation of computer literate personnel (Dec-2017)
5. Proper control over the Management system (June-2018)

Please identify required resources to implement this plan.

- Metering system for oil conservation.
- literate computer personnel for management of AMR software

Please identify any barriers or hindrances to the implement this plan.

- Funding for arranging oil monitoring equipment

~~---~~

Other Comments or Notes:

These type of training activities may be ensured in order to enhance of operation of WASA Fsd, enhance working efficiency & to development of the standardized skills.

During training activities, class participation from each candidate may be monitored & it has to be given a heavy weightage ~~over~~ write in the overall marking.

Zohaib Aftab
WASA Rawalpindi



POST TRAINING ACTION PLAN

Training Title: <u>Operation & Maintenance of Electrical ^{Equipment}</u>	Date of Training: <u>15-12-2017</u>
Name of Participant: <u>Zohaib Aftab</u>	
Name of Organization: <u>WASA Rawalpindi</u>	

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Proper Management of Electric control panel
2. Record Keeping
3. HSE (Health Safety and Environment for Electric Components)

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. I will check the Electric control panels in my facility, and will make sure that
2. there is no bypassing ~~or~~ and Equipments are working properly. (April 2018)
3. I will try to maintain all the record in a proper way so that preventive maintenance should be carried out in time (10 April 2018)
4. I will train my sub-ordinates about the basic HSE, and will make sure that protective equipments should be there at my facility. (Feb 2018)

Please identify required resources to implement this plan.

- * trained staff
- * Missing or Replacement for missing and faulty equipments
- * Registers for record keeping
- * Protective Equipments

Please identify any barriers or hindrances to the implement this plan.

- * Leg Pulling
- * Non-interested staff
- * un-trained staff

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: operation & maintenance of electrical equipment Date of Training: 15-12-2017
Name of Participant: Muhammad IRSHAD
Name of Organization: WASA LAHORE

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Proper Management of Electric control panel
2. Record Keeping.
3. Health Safety Environment for electric components. (HSE)

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. Checking the electric panel, missing of parts, By Pass circuit, Base Plate missing and other act sources with in case Dmg rest.
 2. Drawing of Panel, and other relevant document in my
 3. facility mark sure working and can available. (April 2018)
 4. I will try to maintain all the Record which relates in electric and other record proper way &
 5. maintanance plan mark sure. (since April 2018)
- I try to adopted SS, I will Trained my staff per SUB, ordanats above basic HSE and will make sure Protective equipment should be their my on facility. (April 2018)
Labiling of Pannel.

Please identify required resources to implement this plan.

Trained staff, Replacement of faulty or missing or equipment changed. Register for record keeping. Protective equipment. Availability of equipments.

Please identify any barriers or hindrances to the implement this plan.

Leg Pulling
Non interested workman.
Untrained / unskilled staff.

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: <u>WSD 5231</u>	Date of Training: <u>11-12-2017 to 15-12-2017</u>
Name of Participant: <u>Rana Alham Rabbani</u>	
Name of Organization: <u>WASA (GDA)</u>	

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. I will ^{make} ensure the record keeping ~~performance~~ ^{improvement} on site. And make the new emendments which are more needed.
2. Troubleshooting
3. I make insure to ~~preventive maintenance~~ ^{labeling} the equipments or devices.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA. (Plan should implement the above listed concepts)

1. I will make insure the record keeping ~~performance~~ ^{improvement} with in 3 months.
2. Trouble shooting is unexpected thing which is needed when the equipments going fault. so i make insure it twice in a month.
3. I label the electrical devices with in 3 months.
- 4.
- 5.

Please identify required resources to implement this plan.

- ① I reviewed the record keeping performance and all the details of record keeping.
- ② Labels of all the electrical equipments.
- ③ Electrical instruments.

Please identify any barriers or hindrances to the implement this plan.

- ① Financial help.
- ② Man Power
- ③ Extra time.

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: <u>OSM of Electrical Equipment (WSD 5231)</u>	Date of Training: <u>11-15th Dec</u>
Name of Participant: <u>Ammar Arshad</u>	
Name of Organization: <u>WASA, LHR</u>	

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Power Factor Improvement of Installations.
2. Labelling of Electric Control Panel.
3.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. Identify the installations with excessive power factor penalty (25-Dec-2017)
2. Inform the relevant SDOs for PFI improvement penalty. (27-Dec-2017)
3. Check at sites regarding requirement of capacitors. (30-Jan-2018)
4. Putting up an estimate (28-Feb-2018)
5. Installing PFI at required sites. (15-March-2018)

Please identify required resources to implement this plan.

- 1) Support from operational SDOs.
- 2) Funds

Please identify any barriers or hindrances to the implement this plan.

- 1) Support from operational SDOs and upper management.

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: O&M of electrical equipment ^{WSD 5231} Date of Training: 15/12/2017
Name of Participant: Ateeq - ur - Rehman
Name of Organization: WASA, LAHORE

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Record Keeping
2. Safe use of electrical equipment
3. Preventive maintenance

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. Training to staff (28 Feb)
2. Availability of space and good quality systems.
3. Record both in soft & hard form (30 Mar)
4. Periodic checking of record./documents (every month)
- 5.

Please identify required resources to implement this plan.

- 1) Trained persons
- 2) More Manpower.

Please identify any barriers or hindrances to the implement this plan.

- 1) No of persons working with computers & record is less. Only 1 person is available for all these works in my jurisdiction.

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: <u>Operation & Maintenance (O+M) Electrical Equipment</u>	Date of Training: <u>15-12-17</u>
Name of Participant: <u>SYED MEHDI HASSAN</u>	
Name of Organization: <u>SDO WASA - LDA</u>	

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. We are try in his department some training manage and strict compliance as per Al-jazari Academy Training to all lower staff
2. HEC Training is very important to all WASA worker during work at the site ensure safety ~~man~~ equipment
3. I am satisfactory to this training and we are try to ~~at~~ implementation for ever

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. one month
2. 16-12-17 to forever
3. Try to Try
- 4.
- 5.

Please identify required resources to implement this plan.

Training + Awareness + Funding + Equipment

Please identify any barriers or hindrances to the implement this plan.

Political involvement + not availability of
Funds

Other Comments or Notes:

We are satisfactory to this Training



POST TRAINING ACTION PLAN

Training Title: OPERATION AND MAINTENANCE OF ELECTRICAL EQUIPMENTS Date of Training: 11-12-2017-15-12-2017

Name of Participant: ZIA UR REHMAN

Name of Organization: WASA MULTAN

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Record Keeping.

2. USE OF Personal Protective Equipments (PPEs), to lower Staff, & their Provision.

3. Implementation of Standard Operating Procedures (SOP)

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. I shall try to keep the record of my vehicles & store, to 30 June 2018.
2. PPEs Provision to my lower Staff which are available in store or I can arrange, to 20 Feb. 2018.
3. Try to Follow Standard operating Procedure to my lower Staff (Drivers & Sewermen) to 31 Dec. 2018.
- 4.
- 5.

Please identify required resources to implement this plan.

1. A computer operator is required to maintain the record in computer on regular basis.
2. Financial Support & Approval of ~~PPE~~ Competative Authority is required to arrange PPEs.
3. A proper training Programme to lower staff to follow SOPs.

Please identify any barriers or hindrances to the implement this plan.

1. Computer operator is not available in my Sub Division Eidgah Lawrence Division (North) to maintain ~~the~~ computerized record.
2. PPEs are not available in my store, and officers are not ready to provide these facilities.
3. The lower staff is illiterate and their training is some difficult to follow SOPs.

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: O&M of Electrical Equipment Date of Training: 11 Dec to 15 Dec 2017
Name of Participant: Muhammad Fiaz
Name of Organization: WASA Multan

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Record Keeping with the help of SS
2. Fuel Incheckment
3. Personal Protective Equipment.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. I have a plan about Record keeping. Built a software and maintain the Record.
2. Fuel Incheckment by Record keeping and documentation.
3. To ensure the safety of workers and officials
4. Its very necessary to keep safety and Protection
- 5.

All these ideas will be implement in Next Month positively

Please identify required resources to implement this plan.

Please identify any barriers or hindrances to the implement this plan.

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: O&M of Electrical Maintenance Date of Training: 30-02-2018
Name of Participant: YASIR ALI
Name of Organization: WASA Quetta.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Try to aware abt the staff about Maintenance of Electrical Equipments
2. Try to aware usage of Electrical Control Panel and its function
3. Health and safety and Environment.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. A awareness. of Maintenance of Electrical Equipments 30-1-2018
2. Awareness about Panel Board. 15-2-2018
3. Health and safety 30-3-2018
- 4.
- 5.

Please identify required resources to implement this plan.

As we have already work shop, minimally
things are ^{not} available at WASA work shop.
we need to buy every thing from Market

Please identify any barriers or hindrances to the implement this plan.

⇒ funds not available
convenencing the Authority

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: Operation And Maintenance Equip Date of Training: 15-12-17

Name of Participant: Fareed, Ahmed

Name of Organization: WASA, Quetta.

Please list three important concepts, ideas, or skills which you plan to take from the training and implement in your work.

1. Health and safety environment/How To work at site

2. Aware ness of electric Pannel Board.

3. check and Balance of electric equipments.

Please identify a specific plan (in sequential steps) that you will implement upon your return to WASA.
(Plan should implement the above listed concepts)

1. Health and Safety environment will be Start in January -2018
2. about Pannel Boards will be start 1st week of Feb 2018
3. and finally the Practise of the check and
4. balance of electric equipments will be start
5. at the Mid of the Feb 2018.

Please identify required resources to implement this plan.

electric equipments
Safety Jacket
Main Problem: The Funds

Please identify any barriers or hindrances to the implement this plan.

Non availability of The Funds
and Senior instructor.
Fire Resistance Equipment

Other Comments or Notes:

添付資料 4.53

2017 年秋期研修「O&M of Mechanical Equipment」で作成されたアクションプラン



POST TRAINING ACTION PLAN

Training Title: <u>O & M Mechanical Equipment</u>	Date of Training: <u>Jan 1st – Jan 5th, 2018</u>
Name of Participant: <u>Ali Husnain</u>	
Name of Organization: <u>WASA GRW</u>	

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

As my department needs alot of work to be done on setting SOP's regarding to the maintenance. So my ultimate focus will be on documentation of all the operations being done under the O&M department. HSE, 5S, preventive maintenance & sustainability.

Please identify a site (in your organization) to implement the above training concepts.

Site: Implimentation on any zone initially, to validate

Please provide a date by which you will implement the above trainings concepts. our SOP's.

Date: 5 March; 2018

Person Responsible (Your Name): Ali Husnain

Ali Husnain
5/1/2018

Other Comments or Notes:

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: WAQAR SARWAR

Name of Organization: WASA Gujranwala

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

- 1) Implementation of HSE on Tubewell.
- 2) To share my training key points and train tubewell operator.
- 3) Label the SOB in the tubewell room.
- 4)

Please identify a site (in your organization) to implement the above training concepts.

Site: people colony Tubewell

Please provide a date by which you will implement the above trainings concepts.

Date: 05/02/2018

Person Responsible (Your Name): Waqar Sarwar



Other Comments or Notes:

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: WASEEMUSSIN 0321 2654646

Name of Organization: WASA Buetta

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

I will Post Standard Operating Procedure SOP at Site

I will implement record keeping measures

Please identify a site (in your organization) to implement the above training concepts.

Site: Ayub Stadium Pumping Station

Please provide a date by which you will implement the above trainings concepts.

Date: 05th of January

Person Responsible (Your Name): WASEEMUSSIN

Other Comments or Notes: -

I will provide / make the manual at 10 nos of Wweds / pumping station and guide the staff accordingly.
For record keeping I will depute my staff to ensure proper record^{keeping} for equipment maintenance



POST TRAINING ACTION PLAN

Training Title: <u>O & M Mechanical Equipment</u>	Date of Training: <u>Jan 1st – Jan 5th, 2018</u>
Name of Participant: <u>SAAD SIDDIQUI</u>	
Name of Organization: <u>WASA, Lahore</u>	

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

- 1- We will implement preventive maintenance plan for disposal Stations.
- 2- We will improve record keeping of maintenance of tube wells & disposals.
- 3- We will educate operators about their respective machinery and their SOPs.
- 4- We will implement 5S in our store facility.
- 5-

Please identify a site (in your organization) to implement the above training concepts.

Site: Drainage Store at PMU office

Please provide a date by which you will implement the above trainings concepts.

Date: 28-Feb-2018

Person Responsible (Your Name):

Saad Siddiqui

Other Comments or Notes:

Need Support from management

Need dedication from operators and staff.

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: UMAIR MASOOD

Name of Organization: WASA, LAHORE

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

- 1) We will introduce preventive maintenance for tubewells & machinery and also instruct our staff to do so.
- 2) Proper SOPs for tubewells and machinery will be adopted and drivers and operators will also be informed about this for proper record keeping and maintenance plan.
- 3) We will provide personal protective equipment to staff and also display warning signs at tubewells & disposals.
- 4) We will also sort out items in the store and display name plates of tools & equipments.

Please identify a site (in your organization) to implement the above training concepts.

Site:

Please provide a date by which you will implement the above trainings concepts.

Date: ²⁸ ~~01~~ - 02 - 2018

Person Responsible (Your Name): Umair Masood



Other Comments or Notes:

- 1) Need support from higher management.
- 2) Also conduct field training of chlorinator maintenance.
- 3) Provide ~~field~~ training of O&M of Electrical equipments also.
- 4) Provide training regarding O&M of Disposal Pumps and Crane also.
- 5) This training was fruitful and more such trainings should be conducted in future.



POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment

Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: Aamir Hussain Shah

Name of Organization: WASA Rawalpindi

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

ایم کار TINO کو Training کر دئے گئے اور جو یہاں پر اور سکھوے
اس کے بارے میں ان کو تربیت کر دئے گئے اور کٹرے پوسٹر ان کو
ان پر عمل کر دئے گئے 5S میں ہم لیوب اور آفس میں کر دئے
گئے یہ انشا اللہ ایک دو ماہ میں یہی مکمل تربیت اور عمل کر دئے
گئے لیوننگ کہ یہ اس لیوب میں اور OHR کا راز ہے۔

Please identify a site (in your organization) to implement the above training concepts.

Site: Tabewells & OHR

Please provide a date by which you will implement the above trainings concepts.

Date:

Person Responsible (Your Name):

Other Comments or Notes:

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: Mukhdum Babar

Name of Organization: WASA - Faisalabad.

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

1. Implementation of preventive maintenance according to manual.
2. 5S implemented on store and office and train my under staff. HSE under available PPE's.
3. Provide SOP and display on machinery for implementation.
4. Give awareness to lower staff about parts of motor jetter and Sucker machines.
5. Maintain Record ~~and~~ keeping and Implementation accordingly.


Please identify a site (in your organization) to implement the above training concepts.

Site: ORM (East) division.

Please provide a date by which you will implement the above trainings concepts.

Date: 19-Jan-2018.

Person Responsible (Your Name): Mukhdum babar


5/1/18

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: <u>O & M Mechanical Equipment</u>	Date of Training: <u>Jan 1st – Jan 5th, 2018</u>
Name of Participant: <u>Sh. Muhammad Imran.</u>	
Name of Organization: <u>WASA Lahore.</u>	

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

I will implement the 5S programme regarding machinery i.e concrete cube test hydraulic machine, other T&P for checking pipe diameter and pipe thickness.

I will label each and every thing according to its use in lab.

Please identify a site (in your organization) to implement the above training concepts.

Site: Quality control office / Gulshan Ravi Lahore.


Please provide a date by which you will implement the above trainings concepts.

Date: 31-01-2018.

Person Responsible (Your Name): Sh. Muhammad Imran.

Other Comments or Notes:

Find related items if needed would/may be delayed but not ignored.


5/1/18.

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: Zain Rashid

Name of Organization: WASA (LHR)

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

- 1) we will implement 5S on Disposal Station and Lift Station
- 2) I will implement record keeping maintenance
- 3) I will train my operator staff
- 4) I will check Tubwell weekly
- 5)

Please identify a site (in your organization) to implement the above training concepts.

Site: (A) Block Johar town

Please provide a date by which you will implement the above trainings concepts.

Date: 15/1/2018

Person Responsible (Your Name): Zain Rashid (WASA LHR)

Other Comments or Notes:


5/1/2018

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: WAHAJ KHAN NIAZI

Name of Organization: WASA LAHORE.

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

1. I will develop the preventive maintenance for vehicles (Jetty, Suction, backhoe)
2. I will develop the preventive maintenance for tubewell.
3. I will share my ideas/knowledge with the operators which I learn in this training.
4. I will implement 5S at our facility. (INSHALLAH).

Please identify a site (in your organization) to implement the above training concepts.

Site: A.I. TOWN Sub-DIVISION.

Please provide a date by which you will implement the above trainings concepts.

Date: 06/01/2018

Person Responsible (Your Name): WAHAJ KHAN NIAZI

Other Comments or Notes:

1. Need support from highups.
2. Required eligible staff.
3. Required Skilled and handworkers.

Wahaj
05/01/2018

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: ASAD Ali

Name of Organization: WASA Faisalabad

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

- ① I will introduce PPE for the O & M staff, preventive maintenance plan, SOP & 5S
- ② Proper cleaning of 60 Nos. chambers & equipment installed under chamber at Faisalabad city.

Please identify a site (in your organization) to implement the above training concepts.

Site: Gutt wala tubewells installed under French Project

Please provide a date by which you will implement the above trainings concepts.

Date: 05-02-2018

Person Responsible (Your Name):

ASAD Ali



Other Comments or Notes:

- ① Try to push our LAB staff for ISO certification.
- ② Push our staff for Post maintenance record keeping.



POST TRAINING ACTION PLAN

Training Title: <u>O & M Mechanical Equipment</u>	Date of Training: <u>Jan 1st – Jan 5th, 2018</u>
Name of Participant: <u>Muhammad Fiaz</u>	
Name of Organization: <u>WASA Multan</u>	

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

- 1- I will introduce 5S Tools on my Facility.
- 2- I will develop Preventive Maintenance for success and better ~~Machine~~ Machine.
- 3- I will introduce Personal Protective Equipment for Sewer man Health and safety.
- 4- I will implement Proper Record Keeping on my Facility
- 5- I will operate my Machine by SOP's

Please identify a site (in your organization) to implement the above training concepts.

Site: Qasimpur Sub Division Sewerage (C)

Please provide a date by which you will implement the above trainings concepts.

Date: 30th April, 2018

Person Responsible (Your Name):

Muhammad Fiaz

Other Comments or Notes:



POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: Kamran Khan

Name of Organization: Water & Sanitation Authority Quetta.

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

I will develop preventive maintenance by the date, health, safety Environmental at site & specially 5S at our Tubewells, OFFICES
As well as I will share this Training with my tube well operators
& SDOs And Sub. Engos.

Please identify a site (in your organization) to implement the above training concepts.

Site: North well field sub-division Tube wells.

Please provide a date by which you will implement the above trainings concepts.

Date: 10th January 2018

Person Responsible (Your Name):

Kamran Khan

Other Comments or Notes:

I would like to invite JICA & Aljazari Team to visit WASA Quetta
And specially Field work places As soon As possible plz.

Kamran Khan
5/01/2018

POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st – Jan 5th, 2018

Name of Participant: Abdul Qadir Abid

Name of Organization: WASA (MDA) Multan

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

1. ~~me~~ will introduce Personal Protective Equipment (PPE) for sewer man.
2. ~~me~~ will develop preventive maintenance plan for sucker and Jetting machine.
3. ~~me~~ will post standard operating procedure (SOP) for sucker and Jetting machines.
4. I will implement 5S at my facility.
5. I will implement proper record keeping for machinery (sucker & Jetting).

Please identify a site (in your organization) to implement the above training concepts.

Site: Old Multan Sub Div. Sewerage division (Central)

Please provide a date by which you will implement the above trainings concepts.

Date: 30 April 2018

Person Responsible (Your Name): Abdul Qadir Abid

Other Comments or Notes:





POST TRAINING ACTION PLAN

Training Title: O & M Mechanical Equipment Date of Training: Jan 1st - Jan 5th, 2018

Name of Participant: SADDEER AHMED ABBASI

Name of Organization: NASA Rawalpindi

Please list five important concepts, ideas, or skills which you plan to take from the training and implement in your work

(please focus on assembly components, preventive maintenance, operating procedures, HSE & 5S)

۱. ہم کارائی اور سروس کو برقرار رکھنے کے لیے Training سیکھیں گے۔
۲. اس کے بارے میں اس بات کو جانیں اور ان پر اپنی ٹیم کو بھی کام کروائیں گے۔
۳. 5S کی افادیت سے جانیں گے۔
۴. اس کو Implement کرنا ہے۔
۵. جس سے sites پر عمل کرنا ہے۔ Pump کو سروس پر بھی لگانے کے لیے۔

Please identify a site (in your organization) to implement the above training concepts.

Site: Bulk water supply water works No 401 Sufaid Tanki
Saidpur Road Rawalpindi

Please provide a date by which you will implement the above trainings concepts.

Date:

Person Responsible (Your Name): Sadeer AHMED ABBASI

Other Comments or Notes: 5/01/2018

اس سے تو بہتر ہے کہ اس کا عمل کرنا۔
ان شاء اللہ ہم اس سے
اس کے knowledge کو Transfer کریں گے۔
اس سے اس کا site

Time NEXT لکھنا اور اللہ کے

مقابلے میں جیتنا ہے۔ لکھنا اور اللہ کے

کچھ چیزیں نظر آتی ہیں۔ لکھنا اور اللہ کے
5-5 site کو

Tag لکھنا اور اللہ کے

添付資料 4.54

2017 年秋期研修「Asset Management」で作成されたアクションプラン

AssetId	Manufacturer	Vehicle Owner	Condition	Residual Life	Risk Level	Remarks	Operation Status	Vehicle Model
020000000000020120-441	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-1221	Messy Forgosen	Wasa Rawalpindi	C	5 Year	Low		Operational	1947
020000000000020120-641	Toyota / Corolla	Wasa RWP	C	5 Year	Low		Operational	1987
020000000000020120-1201	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2009
020000000000020120-781	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2008
020000000000020120-1141	Toyota	Wasa Rawalpindi	C	5 Year	Low		Operational	1998
020000000000020120-471	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-1181	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2009
020000000000020120-1041	Nissan	Wasa Rawalpindi	F	ZERO	High		Operational	1986
020000000000020120-1081	Nissan	Wasa Rawalpindi	C	5 Year	Low		Operational	1986
020000000000020120-681	Honda	Wasa RWP	B	10 Year	Low		Operational	2007
020000000000020120-291	Honda	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-11	Mazda	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-861	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2003
020000000000020120-931	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2010
020000000000020120-521	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1990
020000000000020120-461	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1996
020000000000020120-421	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-111	Mazda	Wasa RWP	C	5 Year	Low		Operational	2000
020000000000020120-81	Mazda	Wasa RWP	C	5 Year	Low		Operational	2000
020000000000020120-231	Toyota / Corolla	Wasa RWP	B	10 Year	Low		Operational	1995
020000000000020120-161	Hino	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-1	Mazda	Wasa Rwp	C	5 Year	Low		Operational	1999
020000000000020120-1291	Nissan		B	10 Year	Low		Operational	2000

AssetId	Manufacturer	Vehicle Owner	Condition	Residual Life	Risk Level	Remarks	Operation Status	Vehicle Model
020000000000020120-431	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-31	Mazda	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-251	SUZUKI KHAYBER	Wasa RWP	B	10 Year	Low		Operational	1999
020000000000020120-1131	Suzuki	Wasa Rawalpindi	C	5 Year	Low		Operational	1997
020000000000020120-1161	Toyota	Wasa Rawalpindi	B	10 Year	Low		Operational	2001
020000000000020120-241	Corolla	Wasa RWP	B	10 Year	Low		Operational	2005
020000000000020120-721	Honda	Wasa Rwp	B	10 Year	Low		Operational	2001
020000000000020120-831	Yamaha	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-981	Yamaha	Wasa Rawalpindi	B	10 Year	Low		Operational	2006
020000000000020120-1091	Hyundai Shehzore	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-21	Mazda	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-281	Honda	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-691	Yamaha	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-311	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-261	Suzuki	Wasa RWP	B	10 Year	Low		Operational	1998
020000000000020120-531	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1998
020000000000020120-851	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2001
020000000000020120-961	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-1211	Tractor	Wasa Rawalpindi	F	Zero	High		Operational	1982
020000000000020120-971	Suzuki	Wasa Rawalpindi	C	5 Year	Low		Operational	1998
020000000000020120-151	Hino Dutro	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-541	SUZUKI KHAYBER	Wasa RWP	C	5 Year	Low		Operational	1995

AssetId	Manufacturer	Vehicle Owner	Condition	Residual Life	Risk Level	Remarks	Operation Status	Vehicle Model
020000000000020120-951	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-601	Suzuki Car	Wasa RWP	C	5 Year	Low		Operational	1996
020000000000020120-591	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1996
020000000000020120-511	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1998
020000000000020120-1241	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2008
020000000000020120-141	Hino Dutro	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-631	SUZUKI BELENS	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-1011	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2010
020000000000020120-1281	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2008
020000000000020120-811	Honda CD-70	Wasa Rawalpindi	C	5 Year	Low		Operational	2010
020000000000020120-581	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1998
020000000000020120-91	Mazda	Wasa RWP	C	5 Year	Low		Operational	2000
020000000000020120-331	HONDA 125	WASA Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-491	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-1311	Yamaha	WASA Rawalpindi	C	5 Year	Low		Operational	2000
020000000000020120-371	Suzuki	Wasa Rawalpindi	C	5 Year	Low		Operational	1998
020000000000020120-451	Suzuki	Wasa RWP	C	5 Year	Low		Operational	2000
020000000000020120-1151	Hyundai Shehzore	Wasa Rawalpindi	C	5 Year	Low		Operational	2000
020000000000020120-1071	Toyota	Wasa Rawalpindi	C	5 Year	Low		Operational	1998
020000000000020120-41	Mazda	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-561	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1996
020000000000020120-1051	Suzuki	Wasa Rawalpindi	C	5 Year	Low		Operational	2000

AssetId	Manufacturer	Vehicle Owner	Condition	Residual Life	Risk Level	Remarks	Operation Status	Vehicle Model
020000000000020120-181	Hino	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-201	Hino	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-271	Suzuki cultus	Wasa RWP	B	10 Year	Low		Operational	2001
020000000000020120-401	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-101	Mazda	Wasa RWP	C	5 Year	Low		Operational	2000
020000000000020120-821	Yamaha	Wasa Rawalpindi	C	5 Year	Low		Operational	2006
020000000000020120-1171	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2009
020000000000020120-891	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	2007
020000000000020120-1321	Honda	WASA Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-411	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1998
020000000000020120-701	Honda	Wasa RWP	C	5 Year	Low		Operational	2010
020000000000020120-911	Honda CD-70	Wasa Rawalpindi	C	5 Year	Low		Operational	2010
020000000000020120-651	Honda	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-301	Honda	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-121	Hino	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-1301	Nissan	Wasa Rawalpindi	C	5 Year	Low		Operational	2000
020000000000020120-131	Hino	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-1121	Mazda	Wasa Rawalpindi	C	5 Year	Low		Operational	1996
020000000000020120-1101	Hyundai Shehzore	Wasa Rawalpindi	B	10 Year	Low		Operational	2006
020000000000020120-321	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-1021	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2010
020000000000020120-1261	Nissan	Wasa Rawalpindi	B	10 Year	Low		Operational	2000

AssetId	Manufacturer	Vehicle Owner	Condition	Residual Life	Risk Level	Remarks	Operation Status	Vehicle Model
020000000000020120-1001	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-1231	Massey Forgosen	Wasa Rawalpindi	B	10 Year	Low		Operational	2002
020000000000020120-71	Mazda	Wasa RWP	C	5 Year	Low		Operational	2000
020000000000020120-481	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-791	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-1031	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-1061	Suzuki	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-381	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2000
020000000000020120-391	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-191	Hino	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-921	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2010
020000000000020120-51	Mazda	Wasa RWP	C	5 Year	Low		Operational	2000
020000000000020120-741	Yamaha	Wasa Rwp	B	10 Year	Low		Operational	2000
020000000000020120-771	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2010
020000000000020120-881	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2007
020000000000020120-221	Suzuki Car	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-341	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-991	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-901	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2008
020000000000020120-351	Honda CD-70	Wasa Rawalpindi	B	10 Year	Low		Operational	2003
020000000000020120-551	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-621	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1996

AssetId	Manufacturer	Vehicle Owner	Condition	Residual Life	Risk Level	Remarks	Operation Status	Vehicle Model
020000000000020120-1191	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2009
020000000000020120-1111	Suzuki	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-171	Hino	Wasa RWP	B	10 Year	Low		Operational	2008
020000000000020120-871	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2007
020000000000020120-841	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2001
020000000000020120-1271	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2008
020000000000020120-671	Honda	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-751	Honda	Wasa RWP	C	5 Year	Low		Operational	1999
020000000000020120-501	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-731	Honda	Wasa RWP	B	10 Year	Low		Operational	2001
020000000000020120-761	HONDA 125	Wasa Rawalpindi	B	10 Year	Low		Operational	2001
020000000000020120-661	Yamaha	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-941	Yamaha	Wasa Rawalpindi	B	10 Year	Low		Operational	2000
020000000000020120-61	Mazda	Wasa RWP	B	10 Year	Low		Operational	2000
020000000000020120-361	Suzuki	Wasa RWP	B	10 Year	Low		Operational	1998
020000000000020120-211	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-1251	Hino	Wasa Rawalpindi	B	10 Year	Low		Operational	2008
020000000000020120-801	HONDA 125	Wasa Rawalpindi	C	5 Year	Low		Operational	1999
020000000000020120-711	Honda	Wasa RWP	B	10 Year	Low		Operational	2007
020000000000020120-571	Suzuki	Wasa RWP	B	10 Year	Low		Operational	2006
020000000000020120-611	Suzuki	Wasa RWP	C	5 Year	Low		Operational	1995

Chassis Number	Engin Capacity	Engin Number	Market Value	Mileage Covered	Register Number	Vehicle Model1	Vechicle Category	Drive Type	Engin Capacity1	Engin Number1
JSAFJB43V00352123	1328	M13A-2033198	0	0	RIG-1087	2008	151	135	1328	M13A-2033198
85607ML	0	171201	0	0	RPT-8654	1998	150	135	MF-375	171201
EE90-3005367	1300	0946898-2E	0	0	RIX6531	1987	151	135	1300	0946898-2E
JHFYF-20H706001749	4009	JM-11850	0	0	RIS-09-1435	2009	150	135	4009	JM-11850
4455456	70	JC 674297	30000	0	RIG 2159	2008	151	136	70	JC 674297
166957	2400	4593613	0	0	RPT-4031	1998	151	135	2400	4593613
335160	970	J110909	0	0	RLF-852	2006	151	135	970	J110909
JHFYF-20H706001748	4009	JM-11849	0	0	RIS-09-1436	2009	150	135	4009	JM-11849
545432	2289	175854	0	0	RIN-1802	1986	151	136	2289	175854
629	2500	97209	0	0	RW-1991	1986	151	135	2500	97209
H69205	125	3179366	65000	0	RLG-1143	2007	151	135	125	3179366
B-88860	125	1088521	25000	0	RIY 4165	1999	151	136	125	1088521
208209	3500	S10470	450000	200055	Un-Register	1999	150	135	3500	S10470
BE-457022	70	1414403	25000	0	RI 3283	2003	151	136	70	1414403
JD-313427	125	4959348	35000	0	RIY 1005	2010	151	136	125	4959348
312486	1000	917907	0	0	RIT 3478	1990	151	135	1000	917907
323493	800	J105886	0	0	RIV 2310	1996	151	135	800	J105886
460630	993	A148308	0	0	RIX4834	1999	151	135	993	A148308
JHFYF20H706001054	100	5M11155	1500000	96000	RIG 08-1096	2000	150	135	100	5M11155
20829	3455	S10658	500000	200129	RPT 5622	2000	150	135	3455	S10658
9532249	1300	2777524	0	0	RIV-3835	1995	151	135	1300	2777524
JHFYF20H506001134	105	JM 11235	1600000	47000	RIG-1104	2008	150	135	105	JM 11235
S10398	3500	208194	650000	200198	Un-Register	1999	150	135	3500	208194
CPA87G01840	210	70226	0	0	unregistered	2000	150	135	210	70226

Chassis Number	Engin Capacity	Engin Number	Market Value	Mileage Covered	Register Number	Vehicle Model1	Vechicle Category	Drive Type	Engin Capacity1	Engin Number1
JSAFJB43V00352187	1328	M13A-2033107	0	0	RIG-1088	2008	151	135	1328	M13A-2033107
208193	3500	S10395	45000	200096	Un-Register	1999	150	135	3500	S10395
458109	993	145805	0	0	RIX3301	1999	151	135	993	145805
226839	796	T122196	0	0	RPT-2990	1997	151	135	796	T122196
53383	2400	5014600	0	0	Un-Reg	2001	151	135	2400	5014600
NZE120-6022669	1299	X290144	0	0	RLB-898	2005	151	135	1299	X290144
C16611	125	1317029	25000	0	RIX 9659	2001	151	136	125	1317029
5ES-103113K	100	5ES-103113K	20000	0	RIX-6836	2000	151	136	100	5ES-103113K
3B11-009922-K	100	3B11-009922-K	45000	0	RGL-6398	2006	151	136	100	3B11-009922-K
AUDF150590	2600	D4BBX254942	0	0	RPT-6216	2000	151	135	2600	D4BBX254942
208210	3500	S10473	400000	200105	Un-Register	1999	150	135	3500	S10473
C-16800	125	1317175	25000	0	RIY 2159	1999	151	136	125	1317175
3B11008599K	100	3B118599K	30000	0	RLF 7207	2006	151	135	100	3B118599K
C-02781	125	1302579	25000	0	RIY 7002	2000	151	136	125	1302579
746975	796	B208480	0	0	GAK 9559	1998	151	135	796	B208480
324841	970	106772	0	0	RIW-5481	1998	151	135	970	106772
C-17179	125	13174779	25000	0	RIX-9658	2001	151	136	125	13174779
B-89504	125	1089224	25000	0	RIX-4166	1999	151	136	125	1089224
O	265	16884		0	RIN-3552	1982	150	135	265	16884
A-100-126213	100	A-100-126213	20000	0	RIW-7390	1998	151	136	100	A-100-126213
JHFYF20H906001010	105	JM 11111	1500000	97000	RIG 08-1099	2008	150	135	105	JM 11111
434045	1000	A121802	0	0	RIV3444	1995	151	135	1000	A121802

Chassis Number	Engin Capacity	Engin Number	Market Value	Mileage Covered	Register Number	Vehicle Model1	Vechicle Category	Drive Type	Engin Capacity1	Engin Number1
C-11323	125	1311343	28000	0	RIX-8354	2000	151	136	125	1311343
SF413P.K.917158	1300	P101166	0	0	RIV8073	1996	151	135	1300	P101166
437078	1000	A124818	0	0	RIV 8076	1996	151	135	1000	A124818
324635	970	J703216	0	0	RIW6425	1998	151	135	970	J703216
FGIJKPB14604	210	JO8CFM18245	0	0	RIS-09-1357	2008	150	135	210	JO8CFM18245
JHFYF20H906001055	105	JM11156	1400000	100000	RIG-08-1097	2008	150	135	105	JM11156
501532	1298	600320	0	0	RIX 1765	1999	151	135	1298	600320
JC-711205	70	4486389	35000	0	RIL-1970	2010	151	136	70	4486389
FGIJKPB14554	210	JO8CFM17610	0	0	RIG-1029	2008	150	135	210	JO8CFM17610
JD-314646	70	4960567	35000	0	RIJ 1004	2010	151	136	70	4960567
324666	970	J703220	0	0	RIW 6765	1998	151	135	970	J703220
15906	3500	13348	550000	300000	Un-Register	2000	150	135	3500	13348
A-100-127321	100	A-100-127321	18000	0	RIX-2029	1999	151	136	100	A-100-127321
335163	970	J110911	0	0	RLF854	2006	151	135	970	J110911
5ES-103203K	100	5ES-103203K	20000	0	RIX-6833	2000	151	136	100	5ES-103203K
A-100-1262230	100	A-100-1262730	18000	0	RW-7391	1998	151	136	100	A-100-1262730
330543	970	J107974	0	0	RIX 8262	2000	151	135	970	J107974
AUDF-101589	2600	D4BBY252979	0	0	RPT-6217	2000	151	135	2600	D4BBY252979
166958	2400	4543758	0	0	Rpt-4032	1998	151	135	2400	4543758
S10472	3500	208211	500000	200210	Un-Register	1999	150	135	3500	208211
323557	1000	J105949	0	0	RIV 6720	1996	151	135	1000	J105949
232182	796	T127524	0	0	Rpt-5617	2000	151	135	796	T127524

Chassis Number	Engin Capacity	Engin Number	Market Value	Mileage Covered	Register Number	Vehicle Model1	Vechicle Category	Drive Type	Engin Capacity1	Engin Number1
JHFYF20H206001057	105	JM 11158	1650000	79000	RIG-1098	2008	150	135	105	JM 11158
JHFYF20H306001133	105	JM11234	1600000	75000	RIG-1103	2008	150	135	105	JM11234
945783	993	335771	0	0	RIX9544	2001	151	135	993	335771
457642	993	145394	0	0	RIX-2256	1999	151	135	993	145394
411-1851	3500	15905	550000	273006	Un-Register	2000	150	135	3500	15905
3B11-009862-K	100	3B11-009862-K	25000	0	RIG 6399	2006	151	136	100	3B11-009862-K
JHFYF-20H706001734	4009	JM-118335	0	0	RIS-09-1434	2009	150	135	4009	JM-118335
H-66297	125	3176659	65000	0	RIG 1147	2007	151	136	125	3176659
B-79922	125	1079598	25000		RIX-2062	1999	151	136	125	1079598
848517	796	T732013	0	0	RIW 7124	1998	151	135	796	T732013
JC 708154	70	4483328	45000	0	RIL 1971	2010	151	136	70	4483328
JD-313512	70	4959332	35000	0	RIJ 1002	2010	151	136	70	4959332
C16126	125	1316545	25000	0	RIY-2158	1999	151	136	125	1316545
B-89151	125	108882	25000	0	RIX-4168	1999	151	136	125	108882
JHFYF206001132	105	JM 11233	1400000	96000	RIG 1102	2008	150	135	105	JM 11233
PKB211G-00180	210	80928	25000	0	Un-Reg	2000	150	135	210	80928
JHFY20H806000950	105	JM11051	1800000	67500	RIG1095	2008	150	135	105	JM11051
635775	2200	441287	0	0	RIY-9426	1996	151	135	2200	441287
130698	2600	6272417		0	RIG-07-1011	2006	151	135	2600	6272417
A-100-127332	100	A-100-127332	18000	0	RIX-2849	1999	151	136	100	A-100-127332
JC-703103	70	4478295	35000	0	Unread	2010	151	136	70	4478295
3000124	210	996303	0	0	Un-Reg	2000	150	135	210	996303

Chassis Number	Engin Capacity	Engin Number	Market Value	Mileage Covered	Register Number	Vehicle Model1	Vechicle Category	Drive Type	Engin Capacity1	Engin Number1
B-9012	125	1090632	25000	0	RIY-4307	1999	151	136	125	1090632
122777	100	588945-H	0	0	RPT-8950	2002	150	135	100	588945-H
0	3500	Nil	500000	0	RPT 5621	2000	150	135	3500	Nil
325693	970	J703376	0	0	RIX 3085	1999	151	135	970	J703376
B-88888	125	1088568	25000	0	RIX-4167	1999	151	136	125	1088568
B-87791	125	1087335	25000	0	RIY-3648	1999	151	136	125	1087335
232185	796	T127522	0	0	Rpt-5620	2000	151	136	796	T127522
944059	993	F334066	0	0	RIX-8872	2000	151	135	993	F334066
363641	993	F395580	0	0	RLF-864	2006	151	135	993	F395580
JHFYF20HX06001131	105	JM 11232	1500000	57000	RIG-1101	2008	150	135	105	JM 11232
JD-317943	70	4963863	35000	0	RIJ 1003	2010	151	136	70	4963863
208303	3455	S10668	500000	200148	RPT 5623	2000	150	135	3455	S10668
5ES-103230K	100	5ES-103230K	20000	0	RIX 6834	2000	151	136	100	5ES-103230K
JD-314769	70	4960654	35000	0	RIJ 1006	2010	151	136	70	4960654
H-69191	125	3179539	65000	0	RIG 1145	2007	151	136	125	3179539
202808	1300	H203418	0	0	RLE2790	2006	151	135	1300	H203418
B-81272	125	1080883	25000	0	RIX-1764	1999	151	136	125	1080883
C-06490	125	1306475	28000	0	RIX-7919	2000	151	136	125	1306475
4455339	70	JC 674155	45000	0	RIG 1117	2008	151	136	70	JC 674155
BE-455141	70	1414034	30000	0	RIX-3281	2003	151	136	70	1414034
335164	970	J110910	0	0	RLF 851	2006	151	135	970	J110910
916488	1300	F314471	0	0	RIV6721	1996	151	135	1300	F314471

Chassis Number	Engin Capacity	Engin Number	Market Value	Mileage Covered	Register Number	Vehicle Model1	Vechicle Category	Drive Type	Engin Capacity1	Engin Number1
JHFYF-20H706001747	4009	JM-11848	0	0	RIS-09-1437	2009	150	135	4009	JM-11848
232179	796	T127517	0	0	Rpt-5618	2000	151	135	796	T127517
JHFYF20H806001130	105	JM11231	1650000	80000	RIG 1100	2008	150	135	105	JM11231
H-66290	125	3176668	65000	0	RIG 1144	2007	151	136	125	3176668
C-15071	125	1315496	25000	0	RIX-9654	2001	151	136	125	1315496
FGIJKPB14592	210	JO8CFM18047	0	0	RIS-09-1356	2008	150	135	210	JO8CFM18047
JC136487	70	4014322	35000	0	RLF 5095	2006	151	135	70	4014322
C09837	125	609809	25000	0	RIX8248	1999	151	136	125	609809
335166	970	J110915	0	0	RLF853	2006	151	135	970	J110915
c12012	125	1312205	25000	0	RIX8941	2001	151	136	125	1312205
C-11960	125	1312077	25000	0	RIX-8853	2001	151	136	125	1312077
3B11009177K	100	3B11009177K	30000	0	RLF 7218	2006	151	136	100	3B11009177K
5ES-103166K	100	5ES-103166K	28000	0	RIX-6835	2000	151	136	100	5ES-103166K
208296	3500	S10654	675000	200035	RPT 5625	2000	150	135	3500	S10654
450042	993	A137739	0	0	RIW-6196	1998	151	135	993	A137739
204288	1328	H205189	0		RLE-988	2006	151	135	1328	H205189
FGIJKPB14555	210	JO8CFM17611	0	0	RIG-09-1030	2008	150	135	210	JO8CFM17611
C-11244	125	1311431	25000	0	RIX-8347	1999	151	136	125	1311431
H65938	125	3176330	65000	0	RIG 1146	2007	151	136	125	3176330
335165	970	J110905	0	0	RLF 857	2006	151	135	970	J110905
914705	1300	F313017	0	0	RIV8072	1995	151	135	1300	F313017

Chassis Number1	Mileage Covered1	Market Value1	FormNo	Org	Department	City Name
JSAFJB43V00352123	0	0	020-1-3-0036	WASA-RWP	WASA-RWP	RWP
85607ML	0	0	020-1-3-0125	WASA-RWP	WASA-RWP	RWP
EE90-3005367	0	0	020-1-3-0056	WASA-RWP	WASA-RWP	RWP
JHFYF-20H706001749	0	0	020-1-3-0123	WASA-RWP	WASA-RWP	RWP
4455456	0	30000	020-1-3-0081	WASA-RWP	WASA-RWP	RWP
166957	0	0	020-1-3-0117	WASA-RWP	WASA-RWP	RWP
335160	0	0	020-1-3-0039	WASA-RWP	WASA-RWP	RWP
JHFYF-20H706001748	0	0	020-1-3-0121	WASA-RWP	WASA-RWP	RWP
545432	0	0	020-1-3-0107	WASA-RWP	WASA-RWP	RWP
629	0	0	020-1-3-0111	WASA-RWP	WASA-RWP	RWP
H69205	0	65000	020-1-3-0060	WASA-RWP	WASA-RWP	RWP
B-88860	0	25000	020-1-3-0069	WASA-RWP	WASA-RWP	RWP
208209	200055	450000	020-1-3-0002	WASA-RWP	WASA-RWP	RWP
BE-457022	0	25000	020-1-3-0089	WASA-RWP	WASA-RWP	RWP
JD-313427	0	35000	020-1-3-0096	WASA-RWP	WASA-RWP	RWP
312486	0	0	020-1-3-0044	WASA-RWP	WASA-RWP	RWP
323493	0	0	020-1-3-0038	WASA-RWP	WASA-RWP	RWP
460630	0	0	020-1-3-0034	WASA-RWP	WASA-RWP	RWP
JHFYF20H706001054	96000	1500000	020-1-3-0012	WASA-RWP	WASA-RWP	RWP
20829	200129	500000	020-1-3-0009	WASA-RWP	WASA-RWP	RWP
9532249	0	0	020-1-3-0024	WASA-RWP	WASA-RWP	RWP
JHFYF20H506001134	47000	1600000	020-1-3-0017	WASA-RWP	WASA-RWP	RWP
S10398	200198	650000	020-1-3-0001	WASA-RWP	WASA-RWP	RWP
CPA87G01840	0	0	020-1-3-0132	WASA-RWP	WASA-RWP	RWP

Chassis Number1	Mileage Covered1	Market Value1	FormNo	Org	Department	City Name
JSAFJB43V00352187	0	0	020-1-3-0035	WASA-RWP	WASA-RWP	RWP
208193	200096	45000	020-1-3-0004	WASA-RWP	WASA-RWP	RWP
458109	0	0	020-1-3-0026	WASA-RWP	WASA-RWP	RWP
226839	0	0	020-1-3-0116	WASA-RWP	WASA-RWP	RWP
53383	0	0	020-1-3-0119	WASA-RWP	WASA-RWP	RWP
NZE120-6022669	0	0	020-1-3-0025	WASA-RWP	WASA-RWP	RWP
C16611	0	25000	020-1-3-0064	WASA-RWP	WASA-RWP	RWP
5ES-103113K	0	20000	020-1-3-0086	WASA-RWP	WASA-RWP	RWP
3B11-009922-K	0	45000	020-1-3-0101	WASA-RWP	WASA-RWP	RWP
AUDF150590	0	0	020-1-3-0112	WASA-RWP	WASA-RWP	RWP
208210	200105	400000	020-1-3-0003	WASA-RWP	WASA-RWP	RWP
C-16800	0	25000	020-1-3-0068	WASA-RWP	WASA-RWP	RWP
3B11008599K	0	30000	020-1-3-0061	WASA-RWP	WASA-RWP	RWP
C-02781	0	25000	020-1-3-0071	WASA-RWP	WASA-RWP	RWP
746975	0	0	020-1-3-0027	WASA-RWP	WASA-RWP	RWP
324841	0	0	020-1-3-0045	WASA-RWP	WASA-RWP	RWP
C-17179	0	25000	020-1-3-0088	WASA-RWP	WASA-RWP	RWP
B-89504	0	25000	020-1-3-0099	WASA-RWP	WASA-RWP	RWP
O	0		020-1-3-0124	WASA-RWP	WASA-RWP	RWP
A-100-126213	0	20000	020-1-3-0100	WASA-RWP	WASA-RWP	RWP
JHFYF20H906001010	97000	1500000	020-1-3-0016	WASA-RWP	WASA-RWP	RWP
434045	0	0	020-1-3-0046	WASA-RWP	WASA-RWP	RWP

Chassis Number1	Mileage Covered1	Market Value1	FormNo	Org	Department	City Name
C-11323	0	28000	020-1-3-0098	WASA-RWP	WASA-RWP	RWP
SF413P.K.917158	0	0	020-1-3-0052	WASA-RWP	WASA-RWP	RWP
437078	0	0	020-1-3-0051	WASA-RWP	WASA-RWP	RWP
324635	0	0	020-1-3-0043	WASA-RWP	WASA-RWP	RWP
FGIJKPB14604	0	0	020-1-3-0127	WASA-RWP	WASA-RWP	RWP
JHFYF20H906001055	100000	1400000	020-1-3-0015	WASA-RWP	WASA-RWP	RWP
501532	0	0	020-1-3-0055	WASA-RWP	WASA-RWP	RWP
JC-711205	0	35000	020-1-3-0104	WASA-RWP	WASA-RWP	RWP
FGIJKPB14554	0	0	020-1-3-0131	WASA-RWP	WASA-RWP	RWP
JD-314646	0	35000	020-1-3-0084	WASA-RWP	WASA-RWP	RWP
324666	0	0	020-1-3-0050	WASA-RWP	WASA-RWP	RWP
15906	300000	550000	020-1-3-0010	WASA-RWP	WASA-RWP	RWP
A-100-127321	0	18000	020-1-3-0073	WASA-RWP	WASA-RWP	RWP
335163	0	0	020-1-3-0041	WASA-RWP	WASA-RWP	RWP
5ES-103203K	0	20000	020-1-3-0077	WASA-RWP	WASA-RWP	RWP
A-100-1262230	0	18000	020-1-3-0078	WASA-RWP	WASA-RWP	RWP
330543	0	0	020-1-3-0037	WASA-RWP	WASA-RWP	RWP
AUDF-101589	0	0	020-1-3-0118	WASA-RWP	WASA-RWP	RWP
166958	0	0	020-1-3-0110	WASA-RWP	WASA-RWP	RWP
S10472	200210	500000	020-1-3-0005	WASA-RWP	WASA-RWP	RWP
323557	0	0	020-1-3-0048	WASA-RWP	WASA-RWP	RWP
232182	0	0	020-1-3-0108	WASA-RWP	WASA-RWP	RWP

Chassis Number1	Mileage Covered1	Market Value1	FormNo	Org	Department	City Name
JHFYF20H206001057	79000	1650000	020-1-3-0019	WASA-RWP	WASA-RWP	RWP
JHFYF20H306001133	75000	1600000	020-1-3-0021	WASA-RWP	WASA-RWP	RWP
945783	0	0	020-1-3-0028	WASA-RWP	WASA-RWP	RWP
457642	0	0	020-1-3-0032	WASA-RWP	WASA-RWP	RWP
411-1851	273006	550000	020-1-3-0011	WASA-RWP	WASA-RWP	RWP
3B11-009862-K	0	25000	020-1-3-0085	WASA-RWP	WASA-RWP	RWP
JHFYF-20H706001734	0	0	020-1-3-0120	WASA-RWP	WASA-RWP	RWP
H-66297	0	65000	020-1-3-0092	WASA-RWP	WASA-RWP	RWP
B-79922		25000	020-1-3-0074	WASA-RWP	WASA-RWP	RWP
848517	0	0	020-1-3-0033	WASA-RWP	WASA-RWP	RWP
JC 708154	0	45000	020-1-3-0062	WASA-RWP	WASA-RWP	RWP
JD-313512	0	35000	020-1-3-0094	WASA-RWP	WASA-RWP	RWP
C16126	0	25000	020-1-3-0057	WASA-RWP	WASA-RWP	RWP
B-89151	0	25000	020-1-3-0070	WASA-RWP	WASA-RWP	RWP
JHFYF206001132	96000	1400000	020-1-3-0014	WASA-RWP	WASA-RWP	RWP
PKB211G-00180	0	25000	020-1-3-0133	WASA-RWP	WASA-RWP	RWP
JHFY20H806000950	67500	1800000	020-1-3-0013	WASA-RWP	WASA-RWP	RWP
635775	0	0	020-1-3-0115	WASA-RWP	WASA-RWP	RWP
130698	0		020-1-3-0113	WASA-RWP	WASA-RWP	RWP
A-100-127332	0	18000	020-1-3-0072	WASA-RWP	WASA-RWP	RWP
JC-703103	0	35000	020-1-3-0105	WASA-RWP	WASA-RWP	RWP
3000124	0	0	020-1-3-0129	WASA-RWP	WASA-RWP	RWP

Chassis Number1	Mileage Covered1	Market Value1	FormNo	Org	Department	City Name
B-9012	0	25000	020-1-3-0103	WASA-RWP	WASA-RWP	RWP
122777	0	0	020-1-3-0126	WASA-RWP	WASA-RWP	RWP
0	0	500000	020-1-3-0008	WASA-RWP	WASA-RWP	RWP
325693	0	0	020-1-3-0040	WASA-RWP	WASA-RWP	RWP
B-88888	0	25000	020-1-3-0082	WASA-RWP	WASA-RWP	RWP
B-87791	0	25000	020-1-3-0106	WASA-RWP	WASA-RWP	RWP
232185	0	0	020-1-3-0109	WASA-RWP	WASA-RWP	RWP
944059	0	0	020-1-3-0030	WASA-RWP	WASA-RWP	RWP
363641	0	0	020-1-3-0031	WASA-RWP	WASA-RWP	RWP
JHFYF20HX06001131	57000	1500000	020-1-3-0020	WASA-RWP	WASA-RWP	RWP
JD-317943	0	35000	020-1-3-0095	WASA-RWP	WASA-RWP	RWP
208303	200148	500000	020-1-3-0006	WASA-RWP	WASA-RWP	RWP
5ES-103230K	0	20000	020-1-3-0066	WASA-RWP	WASA-RWP	RWP
JD-314769	0	35000	020-1-3-0080	WASA-RWP	WASA-RWP	RWP
H-69191	0	65000	020-1-3-0091	WASA-RWP	WASA-RWP	RWP
202808	0	0	020-1-3-0023	WASA-RWP	WASA-RWP	RWP
B-81272	0	25000	020-1-3-0075	WASA-RWP	WASA-RWP	RWP
C-06490	0	28000	020-1-3-0102	WASA-RWP	WASA-RWP	RWP
4455339	0	45000	020-1-3-0093	WASA-RWP	WASA-RWP	RWP
BE-455141	0	30000	020-1-3-0076	WASA-RWP	WASA-RWP	RWP
335164	0	0	020-1-3-0047	WASA-RWP	WASA-RWP	RWP
916488	0	0	020-1-3-0054	WASA-RWP	WASA-RWP	RWP

Chassis Number1	Mileage Covered1	Market Value1	FormNo	Org	Department	City Name
JHFYF-20H706001747	0	0	020-1-3-0122	WASA-RWP	WASA-RWP	RWP
232179	0	0	020-1-3-0114	WASA-RWP	WASA-RWP	RWP
JHFYF20H806001130	80000	1650000	020-1-3-0018	WASA-RWP	WASA-RWP	RWP
H-66290	0	65000	020-1-3-0090	WASA-RWP	WASA-RWP	RWP
C-15071	0	25000	020-1-3-0087	WASA-RWP	WASA-RWP	RWP
FGIJKPB14592	0	0	020-1-3-0130	WASA-RWP	WASA-RWP	RWP
JC136487	0	35000	020-1-3-0059	WASA-RWP	WASA-RWP	RWP
C09837	0	25000	020-1-3-0067	WASA-RWP	WASA-RWP	RWP
335166	0	0	020-1-3-0042	WASA-RWP	WASA-RWP	RWP
c12012	0	25000	020-1-3-0065	WASA-RWP	WASA-RWP	RWP
C-11960	0	25000	020-1-3-0079	WASA-RWP	WASA-RWP	RWP
3B11009177K	0	30000	020-1-3-0058	WASA-RWP	WASA-RWP	RWP
5ES-103166K	0	28000	020-1-3-0097	WASA-RWP	WASA-RWP	RWP
208296	200035	675000	020-1-3-0007	WASA-RWP	WASA-RWP	RWP
450042	0	0	020-1-3-0029	WASA-RWP	WASA-RWP	RWP
204288		0	020-1-3-0022	WASA-RWP	WASA-RWP	RWP
FGIJKPB14555	0	0	020-1-3-0128	WASA-RWP	WASA-RWP	RWP
C-11244	0	25000	020-1-3-0083	WASA-RWP	WASA-RWP	RWP
H65938	0	65000	020-1-3-0063	WASA-RWP	WASA-RWP	RWP
335165	0	0	020-1-3-0049	WASA-RWP	WASA-RWP	RWP
914705	0	0	020-1-3-0053	WASA-RWP	WASA-RWP	RWP

NAME : CHANZAB KHAN (Assistant. Director).
SUB DIVISION: SHAMSABAD WASA RAWALPINDI

Name	Union Council	Locality	Operational Status	Physical Condition Of Pump	Physical Condition Of Motor	Lubricant Leakages Condition	Water Leakages	Electric Cable insulation	Electric Cable Sizing	Transformer Condition	Condition of Performance of Starter / Motor Control Unit
16-C	22	QAYUMABAD (NEW)	Operational	B	A	B	A	B	C	A	A
15-C	22	Taxi Stand Dh.Kala Khan	Operational	B	A	B	B	A	B	A	A
16	22	Qayyumabad Dh.Kala Khan	Operational	B	B	B	A	B	A	B	A
16-A	22	Murree Hazara Colony	Operational	A	B	B	B	A	B	A	C
17-D	22	Jinah Town Dh.Kala Khan	Operational	B	A	A	A	B	A	B	B
24-A	22	Model Colony Dh. Kala Khan	Operational	A	B	B	B	A	B	A	A
16-B	22	Farooq E Azam Road	Operational	A	A	A	A	B	A	B	B
16-D	22	Farooq E Azam Road	Operational	B	B	B	B	A	B	A	A
24-C	22	Rafiqabad	Operational	A	A	A	A	B	A	B	B
175	23	Bilal Colony Service Road	Operational	B	B	B	A	A	B	A	A
175-A	23	Bilal Colony	Operational	A	A	A	B	B	A	B	B
7	23	A-Block Gunj Bakhsh Road	Operational	B		B	A	A	B	A	A
19	23	Kiyani Bazar	Operational	A	B	A	B	B	A	B	B
20	23	Dh. Piracha OHR	Operational	B	A	B	A	A	B	A	A
174	23	Dh. Kashmirian	Operational	A	B	A	B	B	A	B	B
17-B	24	Ali Abad	Operational	B	A	B	A	A	B	A	A
25	24	Khajoor Wali gali	Operational	A	B	A	B	B	A	B	B
23	24	Dk. Punnoo	Operational	B	A	B	A	B	A	B	A
23-A	24	Dh. Ali Akber	Operational	A	B	A	B	A	A	A	B
24	24	Khana Kak	Operational	B	A	B	A	B	B	B	A
24-B	24	Ilyas Town Khanna Kak	Operational	A	B	A	B	A	A	A	B
24-D	24	Sheir Ahmed Rd Khanna Kak	Operational	B	A	B	A	B	B	B	A
23-B	24	IQBAL TOWN	Operational	A	B	A	B	A	B	A	B
23-C	24	Amna Masjid	Operational	A	A	B	A	B	A	B	A
19-B	25	Mujistrate Colony	Operational	B	B	A	B	A	B	A	B
26-A	25	GAZALI ROAD	Operational	A	A	B	A	B	A	B	A

Name	Union Council	Locality	Operational Status	Physical Condition Of Pump	Physical Condition Of Motor	Lubricant Leakages Condition	Water Leakages	Electric Cable insulation	Electric Cable Sizing	Transformer Condition	Condition of Performance of Starter / Motor Control Unit
26	25	Sadiqabad Mohammdi Masjid	Operational	B	B	A	B	A	B	A	B
19-A	25	Shaheen Colony	Operational	A	A	B	A	B	A	B	A
25-A	25	Mohalla Chaudharian S/Road	Operational	B	A	A	B	A	B	A	B
21	26	A-Block6th Road	Operational	A	B	B	A	B	A	B	A
22	26	A-Block6th Road	Operational	B	A	A	B	A	B	A	B
31-D	26	AVIATION PARK	Operational	A	B	B	A	B	A	B	A
170	26	ARSHI MASJID	Operational	B	A	A	B	A	B	A	B
35	26	AFANDI COLONY	Operational	A	B	B	A	B	A	B	A
35-A	26	AFANDI COLONY	Operational	B	A	A	B	A	B	A	B
36-A	26	BANGREEL MASJID	Operational	A	B	B	A	B	A	B	A
22-A	26	DOK MUNSHI	Operational	A	A	A	B	A	B	A	B
29-B	27	MUHALLA FAISALABAD	Operational	A	B	A	B	A	B	A	B
28-A	27	JAHANGI MUHALLA	Operational	B	A	B	A	B	A	B	A
29-A	27	CHAPTAN RAYAZ MARKET	Operational	A	B	A	B	A	B	A	B
28	27	AZHER SATTI PLOT	Operational	B	A	B	A	B	A	B	A
27	27	MILAD CHOWK	Operational	A	B	A	B	A	B	A	B
27-A	27	MUMDI CHOWK	Operational	B	A	B	A	B	A	B	A
27-B	27	AHMED STREET	Operational	A	B	A	B	A	B	A	B
28-B	27	HAJJI CHOWK	Operational	B	A	B	A	B	A	B	A
188	28	HAJJI CHOWK	Operational	A	B	A	B	A	A	A	B
30	28	PEPSI DEPU	Operational	B	A	B	A	B	B	B	A
30-A	28	AZAM HOTAL	Operational	A	B	A	B	A	B	A	B
31-C	28	GALI NO 3	Operational	B	A	B	A	B	A	B	A
31	28	GALI NO 2	Operational	A	B	A	B	A	B	A	B
31-A	28	Dr. QADEER STREET	Operational	B	A	B	A	B	A	B	A
31-B	28	GALI NO 5	Operational	A	B	A	B	A	B	A	B
32	29	BEHARI COLONY	Operational	B	A	B	A	A	B	B	A
32-B	29	BEHARI COLONY	Operational	A	B	A	B	B	A	A	B
32-A	29	KHURRM COLONY	Operational	B	A	B	A	A	B	B	A

Name	Union Council	Locality	Operational Status	Physical Condition Of Pump	Physical Condition Of Motor	Lubricant Leakages Condition	Water Leakages	Electric Cable insulation	Electric Cable Sizing	Transformer Condition	Condition of Performance of Starter / Motor Control Unit
33	29	RAJA KHALID	Operational	A	B	A	B	B	A	A	B
33-A	29	CH. TARIQ K COLONY	Operational	B	A	B	A	A	B	B	A
33-B	29	KHURRAM COLONY	Operational	A	B	A	B	B	A	A	B
32-D	29	KHURRAM COLONY	Operational	B	A	B	A	A	B	B	A
34	29	MARRIGE HALL	Operational	A	B	A	B	B	A	A	B
38	30	AMUR PURA	Operational	B	A	B	A	A	B	B	A
38-A	30	AMUR PURA	Operational	A	B	A	B	B	A	A	B
37	30	CHAH SULTAN	Operational	B	A	B	A	A	B	B	A
37-A	30	RAJA ISRAR	Operational	A	B	A	B	B	A	A	B
37-B	30	LALA ISRAR	Operational	B	A	B	A	A	B	B	A
36-B	30	C-BLOCK	Operational	A	B	A	B	B	A	A	B
45	31	HUKAM DAD MOHALLA	Operational	B	A	B	A	A	B	B	A
45-B	31	ISHTIAQ MIRZA	Operational	A	B	A	B	B	A	A	B
39	31	RAWAL ROAD	Operational	B	A	B	A	A	B	B	A
39-A	31	TAMASMABAD	Operational	A	B	A	B	B	A	A	B
40	31	CHAMRA GODAM	Operational	B	A	B	A	A	B	B	A
45(N	31	NAB COURT	Operational	A	B	A	B	B	A	A	B
45-A	31	G FACTORY	Operational	B	A	B	A	A	B	B	A
44	32	G FACTORY	Operational	A	B	A	B	B	A	A	B
42	32	GROUND Q.F	Operational	A	B	A	B	B	A	A	B
43	32	WARIS KHAN	Operational	B	A	B	A	A	B	B	A
43-B	32	WARIS KHAN	Operational	A	B	A	B	B	A	A	B
44-A	32	AMAR PURA TANKI	Operational	B	A	B	A	B	B	B	A
43-A	32	ZAFAR UL HAQ ROAD	Operational	A	B	A	B	A	A	A	B

Pump Vibration Status	Pump Noise Level	Motor Temperature Control	Piping Condition	Condition of Return Valve	Condition of Gate Valve	Condition of Air Release Valve	Chlorinator Condition	Civil Structure Condition of Assets	Ventilation Condition	Log Book	Discharge (Cusecs)	Pressure Head (3Ft)	Risk Level
A	B	A	B	A	A	B	B	Open	B	B	0.25	B	LOW
B	B	B	A	A	A	B	NIL	Open	B	C	0.35	B	LOW
A	A	A	B	B	B	A	B	A	A	C	0.25	C	MODARATE
B	B	B	A	A	A	B	NIL	B	B	C	0.4	B	LOW
A	A	A	B	B	B	A	B	Open	A	B	0.4	A	LOW
B	B	B	A	A	A	B	A	A	B	B	0.35	B	LOW
A	A	A	B	B	B	A	NIL	Open	A	B	0.25	A	LOW
B	B	B	A	A	A	B	NIL	Open	B	B	0.45	B	LOW
A	A	A	B	B	B	A	NIL	Open	A	B	0.35	A	LOW
B	B	B	A	A	A	B	B	A	B	B	0.4	B	LOW
A	A	A	B	B	B	A	B	A	A	B	0.4	A	LOW
B	B	B	A	A	A	B	B	A	B	B	0.34	B	LOW
A	A	A	B	B	B	A	A	B	A	B	0.45	A	LOW
B	B	B	A	A	A	B	B	A	B	A	0.29	C	LOW
A	A	A	B	B	B	A	B	B	A	C	0.3	B	LOW
B	B	B	A	A	A	B	C	A	B	C	0.15	A	HIGH.
A	A	A	B	B	B	A	B	B	A	C	0.5	B	LOW
B	B	B	A	A	A	B	B	B	B	B	0.25	A	LOW
A	A	A	B	B	B	A	NIL	Open	A	B	0.35	C	LOW
B	B	B	A	A	A	B	C	A	B	B	0.45	B	LOW
A	A	A	B	B	B	A	B	B	A	C	0.35	A	LOW
B	B	B	A	A	A	B	NIL	Open	B	C	0.36	B	LOW
A	B	A	B	A	B	A	NIL	Open	A	C	0.25	A	LOW
B	A	B	A	B	A	B	NIL	Open	B	C	0.35	B	LOW
A	B	A	B	A	B	A	NIL	A	A	B	0.25	A	LOW
B	A	B	A	B	A	B	NIL	Open	B	B	0.45	B	LOW

Pump Vibration Status	Pump Noise Level	Motor Temperature Control	Piping Condition	Condition of Return Valve	Condition of Gate Valve	Condition of Air Release Valve	Chlorinator Condition	Civil Structure Condition of Assets	Ventilation Condition	Log Book	Discharge (Cusecs)	Pressure Head (3Ft)	Risk Level
A	B	A	B	A	B	A	C	B	A	B	0.27	B	LOW
B	A	B	A	B	A	B	A	Open	B	C	0.25	C	MODARATE
A	B	A	B	A	B	A	NIL	Open	A	B	0.43	B	LOW
B	A	B	A	B	A	B	NIL	Open	B	C	0.28	C	LOW
A	B	A	B	A	B	A	NIL	Open	A	B	0.25	B	MODARATE
B	A	B	A	B	A	B	C	Open	B	C	0.28	C	LOW
A	B	A	B	A	B	A	A	A	A	C	0.5	B	LOW
B	A	B	A	B	A	B	B	A	B	C	0.45	A	LOW
A	B	A	B	A	B	A	B	A	A	A	0.36	C	LOW
B	A	B	A	B	A	B	C	B	B	C	0.25	C	LOW
A	B	A	B	A	B	A	NIL	Open	A	B	0.35	B	LOW
A	B	A	B	A	B	A	NIL	Open	A	B	0.3	A	LOW
B	A	B	A	B	A	B	A	B	B	B	0.3	B	LOW
A	B	A	B	A	B	A	B	B	B	A	0.4	A	LOW
B	A	B	A	B	A	B	C	B	A	B	0.35	B	LOW
A	B	A	A	A	B	A	B	B	B	B	0.34	A	LOW
B	A	B	A	B	A	B	NIL	B	A	B	0.35	C	LOW
A	B	A	B	A	B	A	NIL	Open	B	C	0.35	A	LOW
B	A	B	A	B	A	B	NIL	Open	A	C	0.45	B	LOW
A	B	A	B	A	B	A	NIL	B	B	B	0.39	A	LOW
B	A	B	A	B	A	B	C	C	A	C	0.25	B	MODARATE
A	B	A	B	A	B	A	NIL	B	B	B	0.26	A	LOW
B	A	B	A	B	A	B	NIL	Open	A	C	0.25	B	MODARATE
A	B	A	B	A	B	A	B	B	B	B	0.25	A	LOW
B	A	B	A	B	A	B	NIL	Open	A	B	0.3	B	LOW
A	B	A	B	A	B	A	NIL	Open	B	B	0.45	A	LOW
B	A	B	A	B	A	B	NIL	Open	A	B	0.25	B	LOW
A	B	A	A	A	B	A	NIL	Open	B	C	0.29	A	LOW
B	A	B	B	B	A	B	B	A	A	C	0.38	B	LOW

Pump Vibration Status	Pump Noise Level	Motor Temperature Control	Piping Condition	Condition of Return Valve	Condition of Gate Valve	Condition of Air Release Valve	Chlorinator Condition	Civil Structure Condition of Assets	Ventilation Condition	Log Book	Discharge (Cusecs)	Pressure Head (3Ft)	Risk Level
A	B	A	A	A	B	A	C	B	B	B	0.4	A	LOW
B	A	B	B	B	A	B	C	B	A	C	0.3	B	LOW
A	B	A	A	A	B	A	NIL	Open	B	C	0.25	A	LOW
B	A	B	B	B	A	B	NIL	Open	A	C	0.28	B	LOW
A	B	A	A	A	B	A	NIL	Open	B	C	0.3	A	LOW
B	A	B	B	B	A	B	B	A	A	C	0.35	B	LOW
A	B	A	A	A	B	A	A	B	B	B	0.4	A	LOW
B	A	B	B	B	A	B	B	B	A	B	0.35	B	LOW
A	B	A	A	A	B	A	NIL	Open	B	B	0.3	A	LOW
B	A	B	B	B	A	B	NIL	Open	A	B	0.4	B	LOW
A	B	A	A	A	B	A	C	Open	B	C	0.45	A	LOW
B	A	B	B	B	A	B	B	B	A	B	0.3	B	LOW
A	B	A	A	A	B	A	NIL	Open	B	C	0.45	A	LOW
B	A	B	B	B	A	B	B	C	A	B	0.35	B	LOW
A	B	A	A	A	B	A	C	B	B	C	0.4	A	LOW
B	A	B	B	B	A	B	B	B	A	B	0.32	C	LOW
A	B	A	A	A	B	A	B	B	B	B	0.36	B	LOW
B	A	B	B	B	A	B	B	Open	A	B	0.25	C	MODARATE
A	B	A	A	A	B	A	B	B	B	B	0.3	B	LOW
A	B	A	A	A	B	A	NIL	Open	B	C	0.3	B	LOW
B	A	B	B	B	A	B	B	B	A	B	0.32	A	LOW
A	B	A	A	A	B	A	NIL	B	B	C	0.28	C	LOW
B	A	B	B	B	A	B	C	Open	A	B	0.14	B	HIGH
A	B	A	A	A	B	A	NIL	B	B	B	0.4	A	LOW

Exercise 4

Module 2

Please Grade your assets based on their condition using Ratings of USEPA GHD.

Asset	Category	Location	Code	Rating			
				Physical Condition	Asset Performance	Asset Reliability	Asset Condition Rating
faisal park	tube wells		180185010700020 110-1861	3	2	2	2
Fateh Garh Dispencery	tube wells		180185010700020 110-1821	2	2	1	2
Fateh Garh Pull	tube wells		180185010700020 110-1811	2	2	1	2
Gowala Colony	tube wells		180185010300020 110-1101961	3	2	2	2
Gulshan Park	tube wells		180185010700020 110-1831	3	2	2	2
Iftikhar Park	tube wells		180185010300020 110-1101991	2	2	1	2
Kareem Nagar	tube wells		180185010300020 110-1102001	3	2	2	2
Kotli Gasi	tube wells		180185010700020 110-1851	2	2	1	2
kotli pur Abdul Rehman	tube wells		180185010300020 110-1102071	3	2	2	2
Maskeen Pura	tube wells		180185010700020 110-1841	5	5	5	5
Mushtaq pura	tube wells		180185010300020 110-1101311	3	2	2	2

Musliam Abad	tube wells		180185010300020 110-1101331	5	5	5	5
Nadia Ghee Mill	tube wells		180185010300020 110-1102051	2	2	1	2
Punj Pir	tube wells			2	2	1	2
qadir bux park	tube wells		180185010300020 110-1101901	3	2	2	2
Qalandar Pura	tube wells		180185010300020 110-1101981	2	2	1	2
Sahlimar Housing Scheem	tube wells		180185010300020 110-1102031	3	2	2	2
Salamat Pura No: 5	tube wells		180185010300020 110-1102011	2	2	1	2
Salamat Pura Takia	tube wells		180185010300020 110-1102021	3	2	2	2
Shah Din Park	tube wells		180185010300020 110-1102041	5	5	5	5

Disposal station

Manawan	D/s		180185010700020 030-71	3	2	2	2
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Physical Condition				
New/Excellent Condition	Minor Defects Only	Moderate Deterioration	Significant Deterioration	Unservicable
1	2	3	4	5

Asset Performance				
Meets Performance Targets	Minor Performance Deficiencies	Considerable Performance Deficiencies	Major Performance Deficiencies	Doesn't Meet Performance Targets
1	2	3	4	5

Asset reliability				
As Specified by Manufacturer	Random Breakdown	Occasional Breakdown	Periodic Breakdown	Continuous Breakdown
1	2	3	4	5

Asset Condition Rating				
Excellent	Good	Fair	Poor	Failing
1	2	3	4	5
A	B	C	D	F

Module 3

Exercise 5								
Please make asset maintenance plan based on their Risk.								
Code	Category	Asset Name	Location	Condition	Probability of Failure Rating	Impact Rating	Risk	Action Plan for Asset Management
	Tube well Station							
18018501070 0020110-1861		faisal park		B	2	B	A	regular maintenance
18018501070 0020110-1821		Fateh Garh Dispencery		B	1	A	A	regular maintenance
18018501070 0020110-1811		Fateh Garh Pull		B	1	A	B	preventive maintenance
18018501030 0020110-1101961		Gowala Colony		B	2	B	B	preventive maintenance
18018501070 0020110-1831		Gulshan Park		B	2	B	A	regular maintenance
18018501030 0020110-1101991		Iftikhar Park		B	1	A	B	preventive maintenance
18018501030 0020110-1102001		Kareem Nagar		B	2	B	A	regular maintenance
18018501070 0020110-1851		Kotli Gasi		B	1	A	B	preventive maintenance
18018501030 0020110-1102071		kotli pur Abdul Rehman		B	2	B	A	regular maintenance
18018501070 0020110-1841		Maskeen Pura		F	5	F	F	priority maintenance
18018501030 0020110-1101311		Mushtaq pura		B	2	B	A	regular maintenance

18018501030 0020110- 1101331		Muslim Abad		F	5	F	F	priority maintenance
18018501030 0020110- 1102051		Nadia Ghee Mill		B	1	A	A	regular maintenance
		Punj Pir		B	1	A	B	preventive maintenance
18018501030 0020110- 1101901		qadir bux park		B	2	B	A	regular maintenance
18018501030 0020110- 1101981		Qalandar Pura		B	1	A	B	preventive maintenance
18018501030 0020110- 1102031		Sahlimar Housing Scheem		B	2	B	A	regular maintenance
18018501030 0020110- 1102011		Salamat Pura No: 5		B	1	A	B	preventive maintenance
18018501030 0020110- 1102021		Salamat Pura Takia		B	2	B	B	regular maintenance
18018501030 0020110- 1102041		Shah Din Park		F	5	F	F	priority maintenance
		Disposal Station						
18018501070 0020030-71	Manawan			B	2	B	2	regular maintenance

Condition	A	B	C	D	F
Probability of Failure Rating	1	2	3	4	5

Impact	Minor Component Failure	Major Component Failure	Asset Failure	Facility/ Sub-Division Failure	Total System Failure
Scale Value	1	2	3	4	5

Probability	Impact (Criticality Assessment)				
	1	2	3	4	5
A	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
B	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
C	Low Risk	Moderate Risk	High Risk	High Risk	Significant Risk
D	Moderate Risk	High Risk	High Risk	Significant Risk	Significant Risk
F	High Risk	High Risk	Significant Risk	Significant Risk	Significant Risk

Condition	Failure Risk State			
	Low	Moderate	High	Significant
A	Regular Maintenance	Regular Maintenance	Preventive Maintenance	Priority Maintenance
B	Regular Maintenance	Preventive Maintenance	Priority Maintenance	Priority Maintenance
C	Preventive Maintenance	Priority Maintenance	Priority Maintenance	Immediate Maintenance
D	Priority Maintenance	Priority Maintenance	Immediate Maintenance	Immediate Maintenance
F	Priority Maintenance	Immediate Maintenance	Immediate Maintenance	Immediate Maintenance

Please Grade your assets based on their condition using Ratings of USEPA GHD.

Asset	Category	Location	Code	Rating				
				Physical Condition	Asset Performance	Asset Reliability	Asset Condition Rating	Overall condition rating
Ashrafia Park	Tubewell	Mozang	180185010400020 110-571	C	2	3	FAIR	B
Jinnah Garden	Tubewell	Mozang	180185010400010 110-1	A	1	1	EXCELLENT	A
Kamal Street Poonch Road	Tubewell	Mozang	180185010400020 110-581	D	4	5	POOR	C
Hamoon Shah	Tubewell	Mozang	180185010400020 110-751	C	3	2	POOR	C
Lawrance Road	Tubewell	Mozang	180185010400020 110-721	A	1	1	EXCELLENT	A
Shadman	Tubewell	Mozang	180185010400020 110-751	A	1	1	EXCELLENT	A
Ashrafia Park	Tubewell	Mozang	180185010400020 110-801	D	2	5	POOR	C
Jinnah Bagh	Tubewell	Mozang	180185010400020 110-561	B	2	2	FAIR	B
Fashi Road	Tubewell	Mozang	180185010400020 110-741	D	3	4	POOR	C
Abu Ishaq	Tubewell	Mozang	180185010400020 110-801	C	2	3	POOR	C
Samnabad	Tubewell	Mozang	180185010400020 110-561	C	2	3	GOOD	B
Fazlia Colony	Tubewell	Mozang	180185010400020 110-791	D	3	4	FALLING	D
Lytton Road	Tubewell	Mozang	180185010400020 110-781	C	3	3	FAIR	C

Aslam Iqbal Park	Tubewell	Mozang	180185010400020 110-761	C	2	2	GOOD	B
Dara Street Pouch Road	Tubewell	Mozang	180185010400020 110-731	C	2	3	FAIR	B
Ferozpur Road Underpass lift station	Disposal station	Mozang	180185010400020 030-261	C	4	3	FAIR	B
Lytton Road	Disposal station	MOZANG	180185010400020 030-271	B	3	2	POOR	C
Shama disposal station	Disposal station	MOZANG	180185010400020 030-276	D	4	4	POOR	C
Jetting Machine	MACHINERY	Mozang		D	4	4	POOR	D
Sucker Machine				D	4	4	POOR	D
Excavator Machine				C	3	3	POOR	D
Vacuum extractor				D	4	4	POOR	D
Dump Truck				D	4	4	POOR	D
Water Boozer	VEHICLES	Mozang		A	1	1	GOOD	B
Tractor Trolley				D	4	4	FAIR	D

Physical Condition

New/Excellent Condition	Minor Defects Only	Moderate Deterioration	Significant Deterioration	Unservicabl e
1	2	3	4	5

Asset Performance

Meets Performance Targets	Minor Performance Deficiencies	Considerable Performance Deficiencies	Major Performance Deficiencies	Doesn't Meet Performanc
1	2	3	4	5

Asset reliability				
As Specified by Manufacturer	Random Breakdown	Occasional Breakdown	Periodic Breakdown	Continuous Breakdown
1	2	3	4	5

Asset Condition Rating				
Excellent	Good	Fair	Poor	Failing
1	2	3	4	5
A	B	C	D	F

Module 3

Exercise 5

Please make asset maintenance plan based on their Risk.

Code	Category	Asset Name	Location	Condition	Probability of Failure Rating	Impact Rating	Risk	Action Plan for Asset Management
180185010400 020110-571	Tubewells	Ashrafia Park	Mozang	B	2	1	LOW	Regular Mainatance
180185010400 010110-1		Jinnah Garden	Mozang	A	1	1	LOW	Regular Mainatance
180185010400 020110-581		Kamal Street Poonch Road	Mozang	C	3	2	MODERATE	Priority Mainatance
180185010400 020110-751		Hamoon Shah	Mozang	C	3	2	MODERATE	Priority Mainatance
180185010400 020110-721		Lawrance Road	Mozang	A	1	1	LOW	Regular Mainatance
180185010400 020110-751		Shadman	Mozang	A	1	1	LOW	Regular Mainatance
180185010400 020110-801		Ashrafia Park	Mozang	C	3	2	MODERATE	Priority Mainatance
180185010400 020110-561		Jinnah Bagh	Mozang	B	2	1	LOW	Regular Mainatance
180185010400 020110-741		Fashi Road	Mozang	C	3	2	MODERATE	Priority Mainatance
180185010400 020110-801		Abu Ishaq	Mozang	C	3	2	MODERATE	Regular Mainatance
180185010400 020110-561		Samnabad	Mozang	B	2	1	LOW	Priority Mainatance
180185010400 020110-791		Fazlia Colony	Mozang	D	4	3	HIGH	Immediate Maintenance
180185010400 020110-781		Lytton Road	Mozang	C	3	2	MODERATE	Priority Mainatance
180185010400 020110-761		Aslam Iqbal Park	Mozang	B	2	1	LOW	Regular Mainatance

180185010400 020110-731		Dara Street Pouch Road	Mozang	B	2	1	LOW	Regular Maintainance
180185010400 020030-261	DISPOSAL Stations	Ferozpur Road Underpass lift station	Mozang	B	2	1	LOW	Regular Maintainance
180185010400 020030-271		Lytton Road		C	3	2	MODERATE	Priority Maintainance
180185010400 020030-276		Shama disposal station		C	3	2	MODERATE	Priority Maintainance

Condition	A	B	C	D	F
Probability of Failure Rating	1	2	3	4	5

Impact	Minor Component Failure	Major Component Failure	Asset Failure	Facility/ Sub- Division Failure	Total System Failure
Scale Value	1	2	3	4	5

Probability	Impact (Criticality Assessment)				
	1	2	3	4	5
A	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
B	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
C	Low Risk	Moderate Risk	High Risk	High Risk	Significant Risk
D	Moderate Risk	High Risk	High Risk	Significant Risk	Significant Risk
F	High Risk	High Risk	Significant Risk	Significant Risk	Significant Risk

Condition	Failure Risk State			
	Low	Moderate	High	Significant

A	Regular Maintenance	Regular Maintenance	Preventive Maintenance	Priority Maintenance
B	Regular Maintenance	Preventive Maintenance	Priority Maintenance	Priority Maintenance
C	Preventive Maintenance	Priority Maintenance	Priority Maintenance	Immidiate Maintenance
D	Priority Maintenance	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance
F	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance	Immidiate Maintenance

Module 2								
Exercise 4	Please Grade your assets based on their condition using Ratings of USEPA GHD.							
Asset	Capacity	Location(Sub division)	Code	Rating				Overall Condition
				Physical Condition	Asset Performance	Asset Reliability	Asset Condition Rating	
A-Block Tajpura Scheme	2 CFS	Tajpura	180185010700020110-1531	C	3	4	Fair	B
Ashfaq Chowk	4 CFS	Tajpura	180185010700020110-1541	C	2	3	Fair	B
Burji No. 9	2 CFS	Tajpura	180185010700020110-1551	D	4	4	Poor	C
C- Block Al-Faisal Town	4 CFS	Tajpura	180185010700020110-1561	C	2	3	Fair	B
Data Park	2 CFS	Tajpura	180185010700020110-1311	B	2	3	Good	B
D-Block Tajpura Scheme	4 CFS	Tajpura	180185010700020110-1571	D	3	4	Poor	C
E-Block	2 CFS	Tajpura	180185010700020110-1521	B	1	2	Excellent	A
Ghaziabad Bus stop	2 CFS	Tajpura	180185010700020110-1601	D	4	4	Poor	C
Ghaziabad Graveyard	2 CFS	Tajpura	180185010700020110-1611	C	3	4	Fair	B
Iqbal Park	2 CFS	Tajpura	180185010700020110-1621	C	3	4	Fair	B

Physical Condition				
New/Excellent Condition	Minor Defects Only	Moderate Deterioration	Significant Deterioration	Unservicable
1	2	3	4	5

Asset Performance				
Meets Performance Targets	Minor Performance Deficiencies	Considerable Performance Deficiencies	Major Performance Deficiencies	Doesn't Meet Performance Targets
1	2	3	4	5

Asset reliability				
As Specified by Manufacturer	Random Breakdown	Occasional Breakdown	Periodic Breakdown	Continuous Breakdown
1	2	3	4	5

Asset Condition Rating				
Excellent	Good	Fair	Poor	Failing
1	2	3	4	5
A	B	C	D	F

Module 3

Exercise 5		Please make asset maintenance plan based on their Risk.						
Code	Category	Asset Name	Location	Condition	Probability of Failure Rating	Impact Rating	Risk	Action Plan for Asset Management
1801850107000 20110-1531	Tube well Station	A-Block Tajpura Scheme	Tajpura	B	2	1	Low	Regular Mainatance
1801850107000 20110-1541	Tube well Station	Ashfaq Chowk	Tajpura	B	2	1	Low	Regular Mainatance
1801850107000 20110-1551	Tube well Station	Burji No. 9	Tajpura	C	3	2	Moderate	Priority Mainatance
1801850107000 20110-1561	Tube well Station	C- Block Al-Faisal Town	Tajpura	B	2	1	Low	Regular Mainatance
1801850107000 20110-1311	Tube well Station	Data Park	Tajpura	B	2	1	Low	Regular Mainatance
1801850107000 20110-1571	Tube well Station	D-Block Tajpura Scheme	Tajpura	C	3	2	Moderate	Priority Mainatance
1801850107000 20110-1521	Tube well Station	E-Block	Tajpura	A	1	1	Low	Regular Mainatance
1801850107000 20110-1601	Tube well Station	Ghaziabad Bus stop	Tajpura	C	3	2	Low	Preventive Maintanance
1801850107000 20110-1611	Tube well Station	Ghaziabad Graveyard	Tajpura	B	2	1	Low	Regular Mainatance
1801850107000 20110-1621	Tube well Station	Iqbal Park	Tajpura	B	2	1	Low	Regular Mainatance

Condition	A	B	C	D	F
Probability of Failure Rating	1	2	3	4	5

Impact	Minor Component Failure	Major Component Failure	Asset Failure	Facility/ Sub-Division Failure	Total System Failure
Scale Value	1	2	3	4	5

Probability	Impact (Criticality Assessment)				
	1	2	3	4	5
A	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
B	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
C	Low Risk	Moderate Risk	High Risk	High Risk	Significant Risk
D	Moderate Risk	High Risk	High Risk	Significant Risk	Significant Risk
F	High Risk	High Risk	Significant Risk	Significant Risk	Significant Risk

Condition	Failure Risk State			
	Low	Moderate	High	Significant
A	Regular Maintenance	Regular Maintenance	Preventive Maintenance	Priority Maintenance
B	Regular Maintenance	Preventive Maintenance	Priority Maintenance	Priority Maintenance
C	Preventive Maintenance	Priority Maintenance	Priority Maintenance	Immidiate Maintenance
D	Priority Maintenance	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance
F	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance	Immidiate Maintenance

Basic Information		Location		Asset Risk				Proposed Action/Asset Management Plan
Asset Code	Asset Title	Town	Sub division	Asset Condition	Probability of Failure	Impact Rating	Risk	
1801850107 00020030-81	B-Block Lift Station	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020030-91	Jorrey Pull Disposal	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020030-101	Tajpura Disposal Station	ABT	Tajpura	C	3	2	Moderate Risk	Priority Maintainance
1801850107 00020030-111	Tajbagh Disposal	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110-1631	Jorrey Pull Tubewell	ABT	Tajpura	C	3	2	Moderate Risk	Priority Maintainance
1801850107 00020110-1621	Iqbal Park Tubewell	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110-1611	Ghaziabad Graveyard tubewell	ABT	Tajpura	C	3	2	Moderate Risk	Priority Maintainance
1801850107 00020110-1571	D-Block Tajpura Schem	ABT	Tajpura	A	1	1	Low Risk	Regular Maintainance
1801850107 00020110-1531	A-Block Tajpura	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance

1801850107 00020110- 1551	Burji No.9	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1591	E-Block Tajpura	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1651	SDO Office Tubewell	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1541	Ashfaq Chowk Tubewell	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1601	Ghazaiabad Bus Stop Tubewell	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1681	Tajbagh	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1671	Subhan Park Tubewell	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1561	C-Block Al- faisal Town	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1521	E Block Tubewel I	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance
1801850107 00020110- 1641	Pir Naseer Tubewell	ABT	Tajpura	B	2	1	Low Risk	Regular Maintainance

1801850107 00020060- 231	Water Tanker	ABT	Tajpura					
1801850107 00020060- 351	75 bhp pannel	ABT	Tajpura					
1801850107 00020060- 291	06 cgs pump	ABT	Tajpura					
1801850107 00020060- 311	100 kva transformer	ABT	Tajpura					
1801850107 00020060- 301	06 cfs pump	ABT	Tajpura					
1801850107 00020060- 341	200 kva transformer	ABT	Tajpura					
1801850107 00020060- 331	100 kva transformer	ABT	Tajpura					
1801850107 00020060- 221	Tractor Trolley	ABT	Tajpura					
1801850101 00020060- 381	Tractor Trolley LRT- 5524	ABT	Tajpura					
1801850101 00020060- 381	Tractor Trolley LRT- 5524	ABT	Tajpura					
1801850107 00020060- 91	Generator 200 KVA	ABT	Tajpura					

1801850107 00020060- 201	Jetting Machine	ABT	Tajpura					
1801850107 00020060- 161	Scuker Machine	ABT	Tajpura					
1801850107 00020060- 181	Sucker Machine	ABT	Tajpura					
1801850107 00020060- 231	Water Tanker	ABT	Tajpura					
1801850107 00020060- 221	Tractor Trolley	ABT	Tajpura					
1801850107 00020060- 111	Generator 300 KVA	ABT	Tajpura					
1801850107 00020060- 131	Generator 500 KVA	ABT	Tajpura					
1801850107 00020060- 121	Generator 300 KVA	ABT	Tajpura					
1801850107 00020060- 351	75 bhp panel	ABT	Tajpura					
1801850107 00020060- 301	06 cfs pump	ABT	Tajpura					
1801850101 00020060- 391	Tractor Trolley LWN- 2205	ABT	Tajpura					

1801850102 10020060- 181	100 kvar pfi plant	ABT	Tajpura					
18000000000 0020120-281	Sucker Machine							
18000000000 0020120-271	Jetter Machine							
18000000000 0020120-291	Tractor Trolley							
18000000000 0020120-151	Hino							
18000000000 0020120- 2021	Suzuki							

Condition	A	B	C	D	F
Probability of Failure Rating	1	2	3	4	5

Impact	Minor Component Failure	Major Component Failure	Asset Failure	Facility/ Sub-Division Failure	Total System Failure
Scale Value	1	2	3	4	5

Probability	Impact (Criticality Assessment)				
	1	2	3	4	5
A	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
B	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
C	Low Risk	Moderate Risk	High Risk	High Risk	Significant Risk

D	Moderate Risk	High Risk	High Risk	Significant Risk	Significant Risk
F	High Risk	High Risk	Significant Risk	Significant Risk	Significant Risk

Condition	Failure Risk State			
	Low	Moderate	High	Significant
A	Regular Maintenance	Regular Maintenance	Preventive Maintenance	Priority Maintenance
B	Regular Maintenance	Preventive Maintenance	Priority Maintenance	Priority Maintenance
C	Preventive Maintenance	Priority Maintenance	Priority Maintenance	Immidiate Maintenance
D	Priority Maintenance	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance
F	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance	Immidiate Maintenance

Module 2

Exercise 4 **Please Grade your assets based on their condition using Ratings of USEPA GHD.**

Asset	Category	Location(Sub division)	Code	Rating				Overall Condition Rating
				Physical Condition	Asset Performance	Asset Reliability	Asset Condition Rating	
4-D-II	2	Green Town	180185010813820110-21	D	2	4	Fair	C
5-C-II	2	Green Town	180185010813920110-11	B	2	2	Good	B
Hakim Town	2	Green Town	180185010814320110-11	B	2	2	Good	B
3-D-II	4	Green Town	180185010814020110-1	D	2	4	Fair	C
3-D-I	4	Green Town	180185010813820110-11	D	4	4	Poor	D
Baggrian Village	2	Green Town	180185010814320110-31	D	4	4	Poor	D
5-D-II (New)	2	Green Town	180185010814020110-21	A	1	1	Excellent	A
16-B-I	2	Green Town	180185010800020110-141	B	2	2	Good	B
6-A-II- Township	4	Green Town	180185010800020110-71	C	4	3	Poor	D
13-B-I	4	Green Town	180185010800020110-131	D	3	4	Poor	D

Physical Condition				
New/Excellent Condition	Minor Defects Only	Moderate Deterioration	Significant Deterioration	Unservicable
1	2	3	4	5

Asset Performance				
Meets Performance Targets	Minor Performance Deficiencies	Considerable Performance Deficiencies	Major Performance Deficiencies	Doesn't Meet Performance Targets
1	2	3	4	5

Asset reliability				
As Specified by Manufacturer	Random Breakdown	Occasional Breakdown	Periodic Breakdown	Continuous Breakdown
1	2	3	4	5

Asset Condition Rating				
Excellent	Good	Fair	Poor	Failing
1	2	3	4	5
A	B	C	D	F

Module 3

Exercise 5		Please make asset maintenance plan based on their Risk.						
Code	Category	Asset Name	Location	Condition	Probability of Failure Rating	Impact Rating	Risk	Action Plan for Asset Management
180185010813820110-21	Tube well Station	4-D-II	Green Town	C	3	1	Low	Preventive
180185010813920110-11	Tube well Station	5-C-II	Green Town	B	2	1	Low	Regular
180185010814320110-11	Tube well Station	Hakim Town	Green Town	B	2	1	Low	Regular
180185010814020110-1	Tube well Station	3-D-II	Green Town	C	3	1	Low	Preventive
180185010813820110-11	Tube well Station	3-D-I	Green Town	D	4	1	Moderate	Priority
180185010814320110-31	Tube well Station	Baggrian Village	Green Town	D	4	2	High	Immediate
180185010814020110-21	Tube well Station	5-D-II (New)	Green Town	A	1	1	Low	Regular
180185010800020110-141	Tube well Station	16-B-I	Green Town	B	2	1	Low	Regular
180185010800020110-71	Tube well Station	6-A-II- Township	Green Town	D	4	2	High	Immediate
180185010800020110-131	Tube well Station	13-B-I	Green Town	D	4	2	High	Immediate

Condition	A	B	C	D	F
Probability of Failure Rating	1	2	3	4	5

Impact	Minor Component Failure	Major Component Failure	Asset Failure	Facility/ Sub-Division Failure	Total System Failure
Scale Value	1	2	3	4	5

Probability	Impact (Criticality Assessment)				
	1	2	3	4	5
A	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
B	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
C	Low Risk	Moderate Risk	High Risk	High Risk	Significant Risk
D	Moderate Risk	High Risk	High Risk	Significant Risk	Significant Risk
F	High Risk	High Risk	Significant Risk	Significant Risk	Significant Risk

Condition	Failure Risk State			
	Low	Moderate	High	Significant
A	Regular Maintenance	Regular Maintenance	Preventive Maintenance	Priority Maintenance
B	Regular Maintenance	Preventive Maintenance	Priority Maintenance	Priority Maintenance
C	Preventive Maintenance	Priority Maintenance	Priority Maintenance	Immidiate Maintenance
D	Priority Maintenance	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance
F	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance	Immidiate Maintenance

Basic Information		Location			Asset Risk			Proposed Action/Asset Management Plan
Asset Code	Asset Title	Town	Sub division	Asset Condition	Probability of Failure	Impact Rating	Risk	
1801850108138 20110-21	4-D-II	Nashtar Town	Green Town	B	2	2	Modreate	Regular Maintenance
1801850108139 20110-11	5-C-II	Nashtar Town	Green Town	A	1	1	Low	Regular Maintenance
1801850108143 20110-11	Hakim Town	Nashtar Town	Green Town	B	2	2	Modreate	Regular Maintenance
1801850108140 20110-1	3-D-II	Nashtar Town	Green Town	B	2	2	Modreate	Regular Maintenance
1801850108138 20110-11	3-D-I	Nashtar Town	Green Town	B	2	2	Modreate	Regular Maintenance
1801850108143 20110-31	Baggrian Village	Nashtar Town	Green Town	A	1	1	Low	Regular Maintenance
1801850108140 20110-21	5-D-II (New)	Nashtar Town	Green Town	B	2	2	Modreate	Regular Maintenance
1801850108000 20110-141	16-B-I	Nashtar Town	Green Town	A	1	1	Low	Regular Maintenance
1801850108139 20110-21	3-C-I	Nashtar Town	Green Town	B	2	2	Modreate	Regular Maintenance
1801850108138 20110-1	5-D-I Kir Kalan	Nashtar Town	Green Town	B	2	2	Modreate	Regular Maintenance
1801850108140 20110-31	1-D-II	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108000 20110-51	2-A-li Town Ship	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108143 20110-21	Auqaf Colony	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108140 20110-11	5-D-II (Old)	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108143 20110-1	Bhatta No. 1, 2	Nashtar Town	Green Town	A	1			Regular Maintenance
1801850108139 20110-1	4-C-II	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108138 20110-41	2-D-I	Nashtar Town	Green Town	B	2			Regular Maintenance

1801850000000 20110-1	2-A-Ii Town Ship	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108000 20110-111	2-B-I	Nashtar Town	Green Town	A	1			Regular Maintenance
1801850108000 20110-161	11-B-I	Nashtar Town	Green Town	A	1			Regular Maintenance
1801850108000 20110-61	4-A-II	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108000 20110-121	2-C-II	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108139 20110-61	4-C-II	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108000 20110-151	2-B-I	Nashtar Town	Green Town	A	1			Regular Maintenance
1801850108000 20110-71	6-A-II- Township	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108000 20110-131	13-B-I	Nashtar Town	Green Town	B	2			Regular Maintenance
1801850108000 20030-131	C-II Disposal Station	Nashtar Town	Green Town	C	3	High	3	Regular Maintenance
1801850108000 20030-81	Ameer Chowk	Nashtar Town	Green Town	B	2	Medium	2	Regular Maintenance
1801850108000 20030-121	C-I Disposal Station	Nashtar Town	Green Town	C	3	High	3	Regular Maintenance
180000000000020 120-1991	Tractor Trolley	Nashtar Town	Green Town					
180000000000020 120-291	Tractor Trolley	Nashtar Town	Green Town					
180000000000020 120-271	Jetter Machine	Nashtar Town	Green Town					

Condition	A	B	C	D	F
Probability of Failure Rating	1	2	3	4	5

Impact	Minor Component Failure	Major Component Failure	Asset Failure	Facility/ Sub- Division Failure	Total System Failure
Scale Value	1	2	3	4	5

Probability	Impact (Criticality Assessment)				
	1	2	3	4	5
A	Low Risk	Low Risk	Low Risk	Moderate Risk	High Risk
B	Low Risk	Low Risk	Moderate Risk	High Risk	High Risk
C	Low Risk	Moderate Risk	High Risk	High Risk	Significant Risk
D	Moderate Risk	High Risk	High Risk	Significant Risk	Significant Risk
F	High Risk	High Risk	Significant Risk	Significant Risk	Significant Risk

Condition	Failure Risk State			
	Low	Moderate	High	Significant
A	Regular Maintenance	Regular Maintenance	Preventive Maintenance	Priority Maintenance
B	Regular Maintenance	Preventive Maintenance	Priority Maintenance	Priority Maintenance
C	Preventive Maintenance	Priority Maintenance	Priority Maintenance	Immidiate Maintenance
D	Priority Maintenance	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance
F	Priority Maintenance	Immidiate Maintenance	Immidiate Maintenance	Immidiate Maintenance