ANNEX D

COST ESTIMATES FOR THE PRIORITY PROJECT

COST ESTIMATES FOR THE PRIORITY PROJECT

1. Basis of Cost Estimates

The project costs are estimated under the following conditions.

1) All the costs are estimated under the economic conditions prevailing in August 2002.

2) Exchange rate of currencies is: US$ 1.00 = 13.6 Lei

3) Engineering services cost and physical contingency are assumed to be 10 % of the total construction cost, respectively.

4) The following countries are considered for the origins of import materials and equipment:

Ductile cast iron pipe:	European countries
Valves:	Russia or Ukraine
Mechanical and electrical equipment:	European countries

5) Price inflation is not taken into account.

2. Components of Project Cost

The project cost consists of:

1) Construction cost,
2) Land acquisition cost including land compensation cost,
3) Engineering service cost, and
4) Physical contingencies

The costs for civil works and mechanical/electrical equipment are estimated based on the preliminary engineering design. The costs of civil works are estimated by multiplying the quantity of work by unit cost. The costs of mechanical/electrical equipment for the rehabilitation of water treatment plant and pumping stations are determined based on the quotations.

3. Basic Unit Cost

Basic unit costs of labors, materials and equipment rental are shown in the following tables.

Unit Cost of Labors

Item	US$/day	US$/month	Remarks
Engineer		350	20 years experience
Foreman	15	300	20 days/month
Common Labor	5	100	
Mechanic	10	200	
Electrician	9	180	
Driver	7	140	
Carpenter	7	140	

Unit Cost of Materials

Item		Unit	Cost (US$)
Sand		M3	8
Gravel		M3	10
Cement		T	50
Ready mix concrete	FK150	M3	35
Ready mix concrete	FK180	M3	40
Ready mix concrete	FK210	M3	45
Reinforcing bar	$\phi \leqq 10$ mm	T	320
Reinforcing bar	$\phi \geqq 12$ mm	T	330
Gasoline		L	0.45
Ductile cast iron pipe	ϕ 300 mm	M	40
Ductile cast iron pipe	ϕ 400 mm	M	50
Ductile cast iron pipe	ϕ 600 mm	M	110
Reinforced concrete pipe	ϕ 400 mm	M	90
Reinforced concrete pipe	ϕ 500 mm	M	100
Reinforced concrete pipe	ϕ 600 mm	M	120
Gate valve	ϕ 300 mm	Pc	550
Gate valve	ϕ 400 mm	Pc	1000
Gate valve	ϕ 600 mm	Pc	1400
Air relief valve	ϕ 100 mm	Pc	120
Air relief valve	ϕ 150 mm	Pc	140

Rental Cost of Equipment

Item		Unit	Unit Cost (US$)
Truck crane	30t	US$/day	200
Truck crane	25t	US$/day	180
Crawler crane	50t	US$/day	130
Crawler crane	25t	US$/day	150
Backhoe	0.6m^3	US$/day	110
Bulldozer	21t	US$/day	110
Tractor shovel	0.8m^3	US$/day	90
Dump truck	10t	US$/day	80
Roller	8 – 10 t	US$/day	50
Rammer	60-100kg	US$/day	20
Air compressor	10.5 m^3/m	US$/day	80
Concrete mixer	0.35 m^3	US$/day	50
Concrete pump car	90-110m^3	US$/day	130
Drainage pump	4"	US$/day	25

4. Unit Construction Cost

(1) Pipeline

Expansion of transmission pipeline is composed of common pipeline section, Riscani section and Falesti section. The lengths of the respective sections are 7,770 m for common section, 36,630 m for Riscani section and 26,880 m for Falesti sections. Sizes of pipes are 500 mm for common section, 350 - 500 mm for Riscani and Falesti sections. Ductile cast iron pipe is selected as the material of the transmission pipeline because of the easiness of construction and economical point of view.

Unit construction cost (construction cost per meter) of the transmission pipeline varies with the diameter of pipe. Minimum earth covering is 1.0 m for all pipelines. These were estimated based on the following work items. (See Drawings 18 and 19)

- Pin setting
- Safety management
- Demolition of the paving if necessary
- Excavation
- Construction of the pipe foundation
- Pipe installation
- Backfilling

- Restoration of paving if necessary
- Disposal of surplus soil
- Test

(2) Valve Boxes

Air relief valves, gate valves and blow-off valves shall be installed at the appropriate portion of the pipeline. These valves should be protected by the valve boxes, which are made by concrete for keeping the good maintenance. Unit construction cost of valve box including the valve varies with the type of valve and diameter of pipe. These were estimated based on the following work items. (See Drawings 26, 27 and 28)

- Safety management
- Demolition of paving if necessary
- Excavation
- Construction of the lean concrete
- Construction of the valve box
- Installation of the valve
- Backfilling
- Restoration of paving if necessary
- Disposal of surplus soil
- Test

(3) Water Pipe Bridge

Water pipe bridge is adopted when the water pipe crosses over the river or the ravine. There are several types of water pipe bridge such as pipe beam type, truss type, arch type, langer type and so on. Pipe beam type supported by pre-stressed beam is adopted because the span of the bridge is not so long. Unit construction cost of water pipe bridge varies only with the diameter of the pipe. These were estimated based on the following work items. (See Drawing 31)

- Safety management
- Excavation for the abut
- Construction of the abut and pre-stressed beam
- Backfilling for the abut
- Disposal of surplus soil
- Hang up the pre-stressed beam on the abut
- Installation of the pipes with a air-relief valve
- Fix the pipe to the beam by the wire
- Connection the pipe to the existing pipe

(4) Inverted Siphon

Inverted siphon is adopted to cross the underground facilities such as drainage pipe, electrical cable, gas pipes and so on. Furthermore it is usable to cross the creek. Unit construction cost of a inverted siphon varies only with the diameter of the pipe. These were estimated based on the following work items. (See Drawing 29)

- Safety management
- Demolition of paving if necessary
- Excavation
- Construction of the lean concrete
- Installation of the pipes covered by reinforced concrete
- Backfilling
- Restoration of paving if necessary
- Disposal of surplus soil
- Test

(5) Crossing the railway and the highway

Jacking method is recommended for the pipe-laying to cross under the railway and the highway instead of the open cut trench method. The construction method of the jacking method is as follows.

1. Construction of the pit for drilling at the both sides of the railway or highway
2. Construction of the basements for the drilling machine
3. Setting the drilling machine and preparation of digging
4. Start for drilling (excavation shall be carried out by hand) and insert the steel pipe casing (ϕ 1,000 mm for ϕ 400 mm water pipe and ϕ 1200 mm for ϕ 600 mm water pipe)
5. Insert the water pipe (ϕ 400 mm and ϕ 600 mm) into the steel pipe casing
6. Backfilling the pit

In this method, three additional valve boxes, one is for the blow-off valve and another two are for the gate valves are required in the case of the future pipe demolition.
These were estimated based on the following work items. (See Drawing 30)

- Safety management
- Construction of the pits
- Construction of the basement
- Preparation of drilling (construction of launching shaft and setting the jacks)
- Drilling
- Insert the steel casing pipe

- Insert the water pipe into the steel casing pipe
- Backfilling the pits
- Construction of three valve boxes

(6) Unfinished reservoir in Balti and new reservoirs in Riscani and Falesti

1) Unfinished reservoir in Balti

There are two basins of unfinished distribution reservoir in Balti just adjacent to the existing distribution reservoir. The capacity of these basins is 10,000 m^3 each and the structure of the basins is flat-slab type. The one is 90 % of completion and the other one is 70 % of completion. Remaining construction is mainly to reconstruct the columns, slabs and walls. As additional works, cleaning the basement, reforming the opening between the walls, wall lining for the prevention of water leakage by the mortar or tar-epoxy are required.

Pipe fitting to connect the existing transmission pipeline, installation of distribution pipes, drain pipes and over flow pipes are also required. (See Drawings 16 and 17)

These were estimated based on the following works.

- Construction of the remaining concrete works
- Additional works as stated above
- Pipe fittings
- Installation of the valves related to the pipes
- Installation of the water level sensor and flow meters
- Improvement of chlorination facilities
- Miscellaneous works such as installation of manholes and ladders
- Embankment

2) New reservoirs in Riscani and Falesti

For the new reservoirs in Riscani and Falesti, the grid type structure is adopted. Main construction works for the reservoirs are concrete work and pipe works for the inlet, outlet (distribution), over flow and drain.

These were estimated based on the following works. (See Drawings 37 and 38)

- Safety management
- Ground leveling
- Excavation
- Construction of the lean concrete

- Construction of the reservoirs
- Lining works for prevention of the water leakage
- Pipe fittings
- Installation of the valves related to the pipes
- Installation of the water level sensor and flow meters
- Installation of the chlorination facilities
- Miscellaneous works such as installation of manholes and ladders
- Embankment

The unit construction costs are shown in the following tables.

Table D.1 Breakdown of Unit Construction Cost (1/4)

Unit of cost: US$

No.	Item	Sub-item	Unit	Quantity	Unit cost	Construction cost	Remark
1	Transmission pipeline φ400	Excavation	m3	2.8	1.5	4.2	
		Backfilling (sand)	m3	0.6	12.0	7.2	
		Backfilling (original soil)	m3	1.0	2.5	2.5	
		Backfilling (surface gravel)	m3	1.1	12.0	13.2	
		Surplus soil	m3	1.0	3.0	3.0	
		Pipe	m	1.0	86.0	86.0	Including pipe fitting and bend pipe fee.
		Total				120.0	
2	Transmission pipeline φ600	Excavation	m3	3.7	1.5	5.6	
		Backfilling (sand)	m3	0.9	12.0	10.8	
		Backfilling (original soil)	m3	1.2	2.5	3.0	
		Backfilling (surface gravel)	m3	1.2	12.0	14.4	
		Surplus soil	m3	1.2	3.0	3.6	
		Pipe	m	1.0	129.0	129.0	Including pipe fitting and bend pipe fee.
		Total				170.0	
3	Air relief valve manhole φ400	Excavation	m3	38.5	1.5	57.8	
		Backfilling (original soil)	m3	36.0	2.5	90.0	
		Surplus soil	m3	2.4	3.0	7.2	
		Gravel	m3	0.1	21.0	2.1	
		Lean concrete	m3	0.1	46.0	4.6	
		Reinforced concrete	m3	3.8	160.0	608.0	
		Valve φ75	pcs	1	700.0	700.0	
		Total				1,470.0	
4	Washout valve manhole φ400	Excavation	m3	42.6	1.5	63.9	
		Backfilling (original soil)	m3	38.3	2.5	95.8	
		Surplus soil	m3	4.3	3.0	12.9	
		Gravel	m3	0.1	21.0	2.1	
		Lean concrete	m3	0.1	46.0	4.6	
		Reinforced concrete	m3	2.1	160.0	336.0	
		Valve φ150	pcs	1	400.0	400.0	
		Total				920.0	
5	Gate valve manhole φ400	Excavation	m3	47.0	1.5	70.5	
		Backfilling (original soil)	m3	39.9	2.5	99.8	
		Surplus soil	m3	7.1	3.0	21.3	
		Gravel	m3	0.2	21.0	4.2	
		Lean concrete	m3	0.1	46.0	4.6	
		Reinforced concrete	m3	6.5	160.0	1,040.0	
		Valve	pcs	1	2,100.0	2,100.0	
		Total				3,340.0	
6	Air relief valve manhole φ600	Excavation	m3	67.0	1.5	100.5	
		Backfilling (original soil)	m3	76.0	2.5	190.0	
		Surplus soil	m3	0.9	3.0	2.7	
		Gravel	m3	0.2	21.0	4.2	
		Lean concrete	m3	0.3	46.0	13.8	
		Reinforced concrete	m3	7.9	160.0	1,264.0	
		Valve φ75	pcs	1	700.0	700.0	
		Total				2,280.0	
7	Washout valve manhole φ600	Excavation	m3	42.6	1.5	63.9	
		Backfilling (original soil)	m3	38.3	2.5	95.8	
		Surplus soil	m3	4.3	3.0	12.9	
		Gravel	m3	0.1	21.0	2.1	
		Lean concrete	m3	0.1	46.0	4.6	
		Reinforced concrete	m3	2.1	160.0	336.0	
		Valve φ300	pcs	1	1,100.0	1,100.0	
		Total				1,620.0	

Table D.1 Breakdown of Unit Construction Cost (2/4)

Unit of cost: US$

No.	Item	Sub-item	Unit	Quantity	Unit cost	Construction cost	Remark
8	Gate valve manhole ϕ600	Excavation	m3	81.6	1.5	122.4	
		Backfilling (original soil)	m3	84.2	2.5	210.5	
		Shortage soil	m3	2.7	12.0	32.4	
		Gravel	m3	0.4	21.0	8.4	
		Lean concrete	m3	0.3	46.0	13.8	
		Reinforced concrete	m3	13.4	160.0	2,144.0	
		Valve	pcs	1	10,100.0	10,100.0	
		Total				12,630.0	
9	Inverted siphon ϕ400	Excavation	m3	469.0	1.5	703.5	
		Backfilling (original soil)	m3	457.1	2.5	1,142.8	
		Surplus soil	m3	11.9	3.0	35.7	
		Gravel	m3	0.3	21.0	6.3	
		Lean concrete	m3	0.3	46.0	13.8	
		Concrete	m3	9.9	60.0	594.0	
		Total				2,500.0	
10	Inverted siphon ϕ600	Excavation	m3	562.8	1.5	844.2	
		Backfilling (original soil)	m3	548.5	2.5	1,371.3	
		Surplus soil	m3	14.3	3.0	42.9	
		Gravel	m3	0.4	21.0	8.4	
		Lean concrete	m3	0.4	46.0	18.4	
		Concrete	m3	11.9	60.0	714.0	
		Total				3,000.0	
11	Water pipe bridge ϕ400	Excavation	m3	36.2	1.5	54.3	
		Backfilling (original soil)	m3	25.5	2.5	63.8	
		Surplus soil	m3	10.7	3.0	32.1	
		Gravel	m3	1.0	21.0	21.0	
		Lean concrete	m3	0.5	46.0	23.0	
		Concrete	m3	10.6	60.0	636.0	
		PC beam	m	20.0	300.0	6,000.0	Installation fee is included.
		Air valve ϕ75	pc	1	700.0	700.0	
		Temporal work	LS	1		900.0	
		Total				8,430.0	
12	Water pipe bridge ϕ600	Excavation	m3	43.4	1.5	65.1	
		Backfilling (original soil)	m3	30.6	2.5	76.5	
		Surplus soil	m3	12.8	3.0	38.4	
		Gravel	m3	1.2	21.0	25.2	
		Lean concrete	m3	0.6	46.0	27.6	
		Concrete	m3	12.7	60.0	762.0	
		PC beam	m	24.0	350.0	8,400.0	Installation fee is included.
		Air valve ϕ75	pc	1	700.0	700.0	
		Temporal work	LS	1		1,000.0	
		Total				11,090.0	
13	Crossing railway ϕ400	Excavation	m3	83.6	1.5	125.4	
		Backfilling (original soil)	m3	72.6	2.5	181.5	
		Surplus soil	m3	11.0	3.0	33.0	
		Drilling (ϕ1000)	m	12.0	800.0	9,600.0	
		Casing (ϕ1000)	m	16.0	300.0	4,800.0	
		Gate valve M. ϕ400	LS	2	3,340.0	6,680.0	Ref gate valve ϕ400
		Washout M. ϕ400	LS	1	920.0	920.0	Ref washout ϕ400
		Air valve (ϕ75)	pc	1	700.0	700.0	
		Total				23,040.0	

Table D.1 Breakdown of Unit Construction Cost (3/4)

Unit of cost: US$

No.	Item	Sub-item	Unit	Quantity	Unit cost	Construction cost	Remark
14	Crossing railway ϕ600	Excavation	m3	83.6	1.5	125.4	
		Backfilling (original soil)	m3	72.6	2.5	181.5	
		Surplus soil	m3	11.0	3.0	33.0	
		Drilling (ϕ1200)	m	12.0	1,000.0	12,000.0	
		Casing (ϕ1200)	m3	16.0	400.0	6,400.0	
		Gate valve M. ϕ600	LS	2	12,630.0	25,260.0	Ref gate valve ϕ600
		Washout M. ϕ600	LS	1	1,620.0	1,620.0	Ref washout ϕ600
		Air valve (ϕ75)	pc	1	700.0	700.0	
		Total				46,320.0	
15	Crossing highway ϕ400	Excavation	m3	83.6	1.5	125.4	
		Backfilling (original soil)	m3	72.6	2.5	181.5	
		Surplus soil	m3	11.0	3.0	33.0	
		Drilling (ϕ1000)	m	20.0	800.0	16,000.0	
		Casing (ϕ1000)	m	24.0	300.0	7,200.0	
		Gate valve M. ϕ400	LS	2	3,340.0	6,680.0	Ref gate valve ϕ400
		Washout M. ϕ400	LS	1	920.0	920.0	Ref washout ϕ400
		Air valve (ϕ75)	pc	1	700.0	700.0	
		Total				31,840.0	
16	Crossing highway ϕ600	Excavation	m3	83.6	1.5	125.4	
		Backfilling (original soil)	m3	72.6	2.5	181.5	
		Surplus soil	m3	11.0	3.0	33.0	
		Drilling (ϕ1200)	m	20.0	1,000.0	20,000.0	
		Casing (ϕ1200)	m3	24.0	400.0	9,600.0	
		Gate valve M. ϕ600	LS	2	12,630.0	25,260.0	Ref gate valve ϕ600
		Washout M. ϕ600	LS	1	1,620.0	1,620.0	Ref washout ϕ600
		Air valve (ϕ75)	pc	1	700.0	700.0	
		Total	pc			57,520.0	
17	Pipe protection ϕ1000	Excavation	m3	14.3	1.5	21.5	
		Backfilling (original soil)	m3	11.0	2.5	27.5	
		Surplus soil	m3	3.3	3.0	9.9	
		Gravel	m3	0.8	21.0	17.4	
		Lean concrete	m3	0.1	46.0	4.6	
		Reinforced concrete	m3	1.9	160.0	299.2	
		Total	m			380.0	
18	Pipe protection ϕ1200	Excavation	m3	17.2	1.5	25.7	
		Backfilling (original soil)	m3	13.2	2.5	33.0	
		Surplus soil	m3	4.0	3.0	11.9	
		Gravel	m3	0.9	21.0	19.5	
		Lean concrete	m3	0.1	46.0	4.6	
		Reinforced concrete	m3	2.2	160.0	352.0	
		Total	m			450.0	

Table D.1 Breakdown of Unit Construction Cost (4/4)

Unit of cost: US$

No.	Item	Sub-item	Unit	Quantity	Unit cost	Construction cost	Remark
19	Reservoir in Riscani (V=1,400m3)	Excavation	m3	2754.7	1.5	4,132.1	
		Backfilling (original soil)	m3	2806.7	2.5	7,016.8	
		Surplus soil	m3	57.4	3.0	172.2	
		Gravel	m3	137.7	21.0	2,891.7	
		Lean concrete	m3	68.8	46.0	3,164.8	
		Reinforced concrete	m3	830.7	160.0	132,912.0	
		Water proof lining	m2	738.7	25.0	18,467.5	
		Inlet pipe (ϕ400)	m	20.0	100.0	2,000.0	
		Distribution pipe (ϕ400)	m	50.0	100.0	5,000.0	
		Overflow pipe (ϕ300)	m	50.0	86.0	4,300.0	
		Drain-pipe (ϕ200)	m	50.0	60.0	3,000.0	
		Gate valve (ϕ400)	pcs	2	2,100.0	4,200.0	
		Gate valve (ϕ200)	pcs	2	650.0	1,300.0	
		Decompression valve (ϕ300	pc	1	4,000.0	4,000.0	
		Flow meter (ϕ300)	pc	1	12,000.0	12,000.0	
		Chlorination facilities	LS	1		15,000.0	Dissolution tank and pumps are included.
		Water level sensor	pc	2	500.0	1,000.0	
		Access road L:20m, W:6m	m2	120	12.5	1,500.0	Asphalt pavement t=5cm
		Others	LS	1		5,000.0	Ventilation, ladder, fence and pavement are included.
		Total				227,060.0	
20	Reservoir in Falesti (V=4,200m3)	Excavation	m3	5177.9	1.5	7,766.9	
		Backfilling (original soil)	m3	6704.1	2.5	16,760.3	
		Shortage soil (sand)	m3	1526.3	12.0	18,315.6	
		Gravel	m3	319.8	21.0	6,715.8	
		Lean concrete	m3	159.9	46.0	7,355.4	
		Reinforced concrete	m3	1721.0	160.0	275,360.0	
		Water proof lining	m2	1248.0	25.0	31,200.0	
		Inlet pipe (ϕ400)	m	20.0	86.0	1,720.0	
		Distribution pipe (ϕ400)	m	50.0	100.0	5,000.0	
		Overflow pipe (ϕ300)	m	50.0	86.0	4,300.0	
		Drain-pipe (ϕ200)	m	50.0	60.0	3,000.0	
		Gate valve (ϕ400)	pcs	2	2,100.0	4,200.0	
		Gate valve (ϕ200)	pcs	2	650.0	1,300.0	
		Decompression valve (ϕ300	pc	1	4,000.0	4,000.0	
		Flow meter (ϕ300)	pc	1	12,000.0	12,000.0	
		Chlorination facilities	LS	1		15,000.0	Dissolution tank and pumps are included.
		Water level sensor	pc	2	500.0	1,000.0	
		Access road L:20m, W:6m	m2	120	12.5	1,500.0	Asphalt pavement t=5cm
		Others	LS	1		5,000.0	Ventilation, ladder, fence and pavement are included.
		Total				421,490.0	
21	Reservoir in Balti (Completion work)	Preparatory work	LS	1		20,000.0	Cleaning, plugging and reforming are
		Backfilling (original soil)	m3	13776.0	2.5	34,440.0	
		Reinforced concrete	m3	333.6	160.0	53,376.0	
		Water proof lining	m2	1920.0	25.0	48,000.0	
		Inlet pipe (ϕ800)	m	100.0	194.0	19,400.0	
		Distribution pipe (ϕ800)	m	100.0	194.0	19,400.0	
		Overflow pipe (ϕ600)	m	100.0	140.0	14,000.0	
		Drain-pipe (ϕ400)	m	100.0	100.0	10,000.0	
		Gate valve (ϕ800)	pcs	4	19,400.0	77,600.0	
		Gate valve (ϕ400)	pcs	2	2,100.0	4,200.0	
		Flow meter (ϕ600)	pc	1	15,000.0	15,000.0	
		Improvement of chlorination facilities	LS	1		15,000.0	Dissolution tank and pumps are included.
		Water level sensor	pc	2	500.0	1,000.0	
		Others	LS	1		5,000.0	Ventilation, ladder, fence and pavement are included.
		Total				336,420.0	

5. Construction Cost

The total construction cost is composed of the rehabilitation cost for the ACSB water supply system, completion cost for the unfinished reservoirs and expansion cost for the transmission pipeline to Riscani and Falesti.

The rehabilitation cost includes the rehabilitation of 4 pumping stations, water treatment plant, transmission mains and a water supply instrumentation system. Expansion cost includes the common section of the pipeline, pipelines to Riscani and Falesti, and the reservoirs in Riscani and Falesti.

Summary of the construction cost and breakdown of construction cost are shown in the following tables.

Table D.2 Summary of the Construction Cost

Unit: US$

No.	Item	Cost	Remarks
1.1	Rehabilitation of PS.1	1,394,120	
1.2	Rehabilitation of PS.2	1,390,200	
1.3	Rehabilitation of PS.3	1,690,400	
1.4	Rehabilitation of PS.4	1,801,100	
1.5	Rehabilitation of WTP	2,155,600	
1.6	Water supply control system	1,739,000	
1.7	Sub Total	10,170,420	
2	Renovation of Existing Transmission Pipeline (Soroca-Balti)	560,720	
3	Renovation of Reservoir (Balti)	336,420	
4.1	Transmission Pipeline (Common part to Riscani & Falesti)	1,542,730	
4.2	Transmission Pipeline (to Riscani)	4,751,860	
4.3	Transmission Pipeline (to Falesti)	4,028,430	
4.4	Sub Total	10,323,020	
5	Grand Total	21,390,580	

Table D.3 Breakdown of Rehabilitation Cost of PS.1

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1.1	Intake Pump with Motor	24.0m3/m*53m*300kW	3 pcs	67,500	202,500	
1.2	Bilge Pump with Motor	1.0m3/m*20m*7.5kW	2 pcs	4,500	9,000	
1.3.1	Valve	Butterfly Valve with motor 500mm	3 pcs	12,600	37,800	Suction for intake pump
1.3.2		Swing Valve 400mm	3 pcs	6,000	18,000	Check valve for intake pump
1.3.3		Gate Valve with motor 400mm	3 pcs	13,000	39,000	Delivery for intake pump
1.3.4		Swing Valve 100mm	2 pcs	600	1,200	Suction for bilge pump
1.3.5		Gate Valve 100mm	2 pcs	260	520	Delivery for bilge pump
1.4	Flow meter	1000mm	2 pcs	25,000	50,000	
1.5	Counter measure against water hammer		1 LS	150,000	150,000	
1.6	Demolishing and Installation cost for above equipments		1 LS		155,600	30 % of above cost
1.7	Vendor Supervisor		0.7 MM	21,000	14,700	
1.8	Supervisor		1 MM	21,000	21,000	
1.9		Sub Total			699,320	
2.1	6KV Switchgear		1 LS	212,000	212,000	
2.2	10-6kV Transformer		1 LS	126,000	126,000	
2.3	6kV Bus Duct	630Ax15mm2	1 LS	69,000	69,000	
2.4	Power Transformer		1 LS	20,000	20,000	
2.5	380V Switchgear		1 LS	54,000	54,000	
2.6	DC 110V Battery & Charge for		1 LS	6,900	6,900	
2.7	AUX Panels		1 LS	8,300	8,300	
2.8	Control switch station		1 LS	400	400	
2.9	Cables		1 LS	45,000	45,000	
2.10	Cable racks & other materials		1 LS	6,900	6,900	
2.11	Demolishing and Installation cost for above equipments		1 LS	82,300	82,300	15% of above cost
2.12	Electrical heat trace system		1 LS	9,000	9,000	
2.12	Vendor Supervisor		1 MM	21,000	21,000	
2.13	Supervisor		1 MM	21,000	21,000	
2.14		Sub Total			681,800	
3.1	Repairing of roof, windows, lightning and painting of pipe		1 LS	8,000	8,000	
3.2		Sub Total			8,000	
4.1	Improvement of intake facility		1 LS	5000	5,000	
4.2		Sub Total			5,000	
4.1	Total				1,394,120	

Table D.4 Breakdown of Rehabilitation Cost of PS.2

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1.1	Booster Pump with Motor	24.0m3/m*90m*500kW	3 pcs	93,000	279,000	
1.2	Valve	Butterfly valve with motor 500mm	3 pcs	12,600	37,800	Suction for pump
1.2.1		Swing Valve 400mm	3 pcs	6,000	18,000	Delivery for
1.2.2		Gate Valve with motor 400mm	3 pcs	13,000	39,000	Check valve for pump
1.2.3		Gate Valve 800mm	2 pcs	22,600	45,200	Intake collector
1.2.4		Gate Valve 800mm	2 pcs	22,600	45,200	Outlet collector
1.3	Counter measure against water hammer		1 LS	12,500	12,500	
1.4	Demolishing and Installation cost for above equipments		1 LS		143,000	30 % of above cost
1.5	Vendor Supervisor		0.7 MM	21,000	14,700	
1.6	Supervisor		1 MM	21,000	21,000	
1.7		Sub Total			655,400	
2.1	6KV Switchgear		1 LS	212,000	212,000	
2.2	10-6kV Transformer		1 LS	199,000	199,000	
2.3	6kV Bus Duct	630Ax15mm2	1 LS	69,000	69,000	
2.4	Power Transformer		1 LS	20,000	20,000	
2.5	380V Switchgear		1 LS	54,000	54,000	
2.6	DC 110V Battery & Charge for		1 LS	6,900	6,900	
2.7	AUX Panels		1 LS	8,300	8,300	
2.8	Control switch station		1 LS	400	400	
2.9	Cables		1 LS	5,000	5,000	
2.10	Cable racks & other materials		1 LS	6,900	6,900	
2.11	Demolishing and Installation cost for above equipments		1 LS	87,300	87,300	15% of above cost
2.12	Electrical heat trace system		1 LS	9,000	9,000	
2.13	Vendor Supervisor		1 MM	21,000	21,000	
2.14	Supervisor		1 MM	21,000	21,000	
2.15		Sub Total			719,800	
3.1	Repairing of roof, windows, lightning and painting of pipe		1 LS	15,000	15,000	
3.2		Sub Total			15,000	
4.1	Total				1,390,200	

Table D.5 Breakdown of Rehabilitation Cost of PS.3

Unit: US$

No.	Item	Specification	Quantity		Unit cost	Cost	Remarks
1.1	Pump with Motor	21.3.0m3/m*75m*360kW	3	pcs	72,000	216,000	
1.2	Backwash Pump with Motor	15.0m3/m*21m*75kW	2	pcs	32,000	64,000	
1.3.1	Valve	Butterfly valve with motor 500mm	3	pcs	12,600	37,800	Suction for pump
1.3.2		Swing valve 400mm	3	pcs	6,000	18,000	Check valve for pump
1.3.3		Gate valve with motor 400mm	3	pcs	13,000	39,000	Delivery for pump
1.3.4		Butterfly valve with motor 400mm	2	pcs	10,800	21,600	Suction for pump
1.3.5		Swing valve 300mm	2	pcs	4,000	8,000	Check valve for pump
1.3.6		Gate valve with motor 300mm	2	pcs	10,200	20,400	Delivery for pump
1.4	Flow meter	1000mm	1	pcs	25,000	25,000	To PS 4
1.5	Flow meter	500mm	1	pcs	18,000	18,000	To Soroca
1.6	Flow meter	500mm	1	pcs	18,000	18,000	To Soroca
1.7	Counter measure against water hammer		1	LS	150,000	150,000	
1.8	Demolishing and Installation cost for above equipments		1	LS		191,000	30 % of above cost
1.8	Vendor Supervisor		0.7	MM	21,000	14,700	
1.9	Supervisor		1	MM	21,000	21,000	
1.1		Sub Total				862,500	
2.1	6KV Switchgear		1	LS	212,000	212,000	
2.2	10-6kV Transformer		1	LS	199,000	199,000	
2.3	6kV Bus Duct	630Ax15mm2	1	LS	69,000	69,000	
2.4	Power Transformer		1	LS	20,000	20,000	
2.5	380V Switchgear		1	LS	87,000	87,000	
2.6	AC220V UPS for		1	LS	20,000	20,000	
2.7	DC 110V Battery & Charge for		1	LS	6,900	6,900	
2.8	AUX Panels		1	LS	8,300	8,300	
2.9	Control switch station		1	LS	1,800	1,800	
2.10	Cables		1	LS	29,000	29,000	
2.11	Cable racks & other materials		1	LS	6,900	6,900	
2.12	Demolishing and Installation cost for above equipments		1	LS	99,000	99,000	15% of above cost
2.13	Electrical heat trace system		1	LS	9,000	9,000	
2.14	Vendor Supervisor		1	MM	21,000	21,000	
2.15	Supervisor		1	MM	21,000	21,000	
2.16		Sub Total				809,900	
3.1	Repairing of roof, windows, lightning and painting of pipe		1	LS	18,000	18,000	
3.2		Sub Total				18,000	
4.1	Total					1,690,400	

Table D.6 Breakdown of Rehabilitation Cost of PS.4

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
A	PS.4					
A1.1	Pump with Motor	18.9m3/m*80m*350kW	3 pcs	70,000	210,000	
A1.2.1	Valve	Butterfly Valve with motor 450mm	3 pcs	11,900	35,700	Suction for pump
A1.2.2		Swing Valve 350mm	3 pcs	5,000	15,000	Check valve for
A1.2.3		Gate Valve with motor 350mm	3 pcs	11,200	33,600	Delivery for pump
A1.3	Water level sensor		2 pcs	500	1,000	
A1.4	Counter measure against water hammer		1 LS	150,000	150,000	
A1.5	Demolishing and Installation cost for above		1 LS		133,600	30 % of above cost
A1.6	Vendor Supervisor		1 MM	21,000	21,000	
A1.7	Supervisor		1 MM	21,000	21,000	
A1.8		Sub Total			620,900	
A2.1	6KV Switchgear		1 LS	212,000	212,000	
A2.2	10-6kV Transformer		1 LS	126,000	126,000	
A2.3	6kV Bus Duct	630Ax15mm2	1 LS	69,000	69,000	
A2.4	Power		1 LS	20,000	20,000	
A2.5	380V Switchgear		1 LS	54,000	54,000	
A2.6	DC 110V Battery & Charge for SWGR Control		1 LS	6,900	6,900	
A2.7	AUX Panels		1 LS	8,300	8,300	
A2.8	Control switch station		1 LS	400	400	
A2.9	Cables		1 LS	5,000	5,000	
A2.10	Cable racks & other materials		1 LS	6,900	6,900	
A2.11	Demolishing and Installation cost for above		1 LS	76,300	76,300	15% of above cost
A2.12	Electrical heat trace system		1 LS	9,000	9,000	
A2.13	Vendor Supervisor		1 MM	21,000	21,000	
A2.14	Supervisor		1 MM	21,000	21,000	
A2.15		Sub Total			635,800	
A3.1	Repairing of roof, windows, lightning and painting of		1 LS	15,000	15,000	
A3.2		Sub Total			15,000	
A4.1	Total				1,271,700	
B	Transmission Reservoir					
B1.1.1	Valve	Butterfly Valve with motor 1000mm	2 pcs	31,000	62000	Inlet
B1.1.2		Butterfly Valve with motor 1000mm	2 pcs	31,000	62000	Outlet
B1.2	Water level sensor		2 pcs	500	1000	
B1.3	Demolishing and Installation cost for above		1 LS	375,000	375000	30 % of above cost
B1.4		Sub Total			500,000	
B2.1	Local Control		1 LS	8,500	8500	
B2.2	10kV-380V KIOSK	50kVA	1 LS	17,000	17,000	
B2.3	Demolishing and Installation cost for above		1 LS	3,900	3,900	15 % of above cost
B2.4		Sub Total			29,400	
B3.1	Total				529,400	
C	Grand Total				1,801,100	

Table D.7 Breakdown of Rehabilitation Cost of Water Treatment Plant

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1.1	Valves					
1.2	Sedimentation	Gate valve 300mm	24 pcs	1,300	31,200	
1.3.1	Filter	Butterfly valve with motor 1000mm	11 pcs	31,000	341,000	Inlets and Outlets are included
1.3.2		Butterfly valve with motor 600mm	5 pcs	15,000	75,000	Inlets
1.3.3		Butterfly valve with motor 600mm	5 pcs	15,000	75,000	Outlets
1.4	Clean Water Reservoir	Butterfly valve with motor 1000mm	1 pcs	31,000	31,000	
1.5	Elevated water tank	Butterfly valve with motor 1000mm	1 pcs	31,000	31,000	for backwashing
1.6	Water level sensor		10 pcs	500	5,000	Filter, Sedimentation tanks and Clear water reservoir
1.7	Water meter for Mixing		1 pc	12,500	12,500	
1.8	Water meter for Backwashing		1 pc	12,500	12,500	
1.9	Water meter for Filtrated water		1 pc	12,500	12,500	
1.10	Demolishing and Installation cost for above		1 LS	188,000	188,000	30% of above cost
1.11		Sub Total			814,700	
2.1	Pumps					
2.2	Aluminum solution pump	0.3m3/m*10m*2.2kW	2 pcs	21,000	42,000	
2.3	Aluminum storage pump	0.4m3/h*10m	2 pcs	12,500	25,000	
2.4	Aluminum dosing pump	20-400 l/h*30m	2 pcs	12,500	25,000	
2.5	Polymer dosing pump	0.5-1.5 l/m*30m	2 pcs	15,000	30,000	
	Fluosilicate sodium pump		2 pcs	12,500	25,000	
2.6	Returning Pump	0.6m3/m*10m*3.7kW	2 pcs	4,000	8,000	
2.7	Sand pump	0.3m3/m*10m*2.2kW	2 pcs	4,000	8,000	
2.8	Blower	10m3/m*0.6kg	2 pcs	31,000	62,000	
2.9	Mixer	15m3/h*3m	2 pcs	17,000	34,000	
2.10	Chlorine gas evaporator	2-20kg/h	1 LS	250,000	250,000	
2.11	Chlorine dosing equipment	2-21kg/h	1 LS	250,000	250,000	
2.12	Counteraction equipment		1 pcs	25,000	25,000	
2.13	Difference pressure guarge		5	400	2,000	
2.14	Gate for sluge		2	10,000	20,000	
2.15	Demolishing and Installation cost for above		1 LS	241,800	241,800	30% of above cost
2.16	Vendor Supervisor		1.5 MM	21,000	31,500	
2.17	Supervisor		2 MM	21,000	42,000	
2.18		Sub Total			1,121,300	
3.1	Rehabilitation of roof and windows		1 LS	56,400	56,400	
3.2	Sand for filter		1 LS	3,200	3,200	
	Painting of pipe		1 LS	15,000	15,000	
3.3	Metallic platform for operation		1 LS	30,000	30,000	15 ton
3.4	Repair of tanks for chemical dosing		1 LS	10,000	10,000	Solution, storage and tanks for coagulant
3.5	Heating system		1 LS	60,000	60,000	
3.6	Reform of chlorination room		1 LS	15,000	15,000	
3.7	Miscellaneous		1 LS	20,000	20,000	
3.8		Sub Total			209,600	
4.1	Equipments for the laboratory		1 LS	10,000	10,000	Water quality test
4.2		Sub Total			10,000	
5.1	Total				2,155,600	

Table D.8 Breakdown of Water Supply Control System

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1.1	Control system (SCADA)		1 LS	1,250,000	1,250,000	
2.1	Local control panel (No.1 P.S.)		1 LS	42,000	42,000	
2.2	Local control panel (No.2 P.S.)		1 LS	42,000	42,000	
2.3	Local control panel (WTP)		1 LS	167,000	167,000	
2.4	Local control panel (No.4 P.S.)		1 LS	42,000	42,000	
2.11	Installation cost for above equipments		1 LS	154,000	154,000	10% of above cost
2.12	Vendor Supervisor		1 MM	21,000	21,000	
2.13	Supervisor		1 MM	21,000	21,000	
2.14	Total				1,739,000	

Table D.9 Breakdown of Rehabilitation Cost on Existing Transmission Pipeline (Soroca-Balti)

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1.1	Pipe protection	ϕ 1200mm	100 m	26	2,570	
1.2	Pipe protection	ϕ 1000mm	50 m	380	19,000	
1.3	Sub Total				21,570	
2.1	Cathode protection	Transformer	4 pcs	2,000	8,000	
2.2		Others	1 LS		800	Steel bar and
2.3	Sub Total				8,800	
3.1	Valve	ϕ 1000mm	5 pcs	40,000	200,000	
3.2	Valve	ϕ 800mm	5 pcs	23,000	115,000	
3.3	Valve	ϕ 600mm	2 pcs	12,000	24,000	
3.4	Valve	ϕ 400mm	3 pcs	2,500	7,500	
3.5	Valve	ϕ 300mm	26 pcs	1,300	33,800	
3.6	Valve	ϕ 150mm	17 pcs	450	7,650	
3.7	Air Valve	ϕ 150mm	8 pcs	1,200	9,600	
3.8	Air Valve	ϕ 100mm	37 pcs	1,200	44,400	
3.9	Installation cost for above equipments				88,400	20% of above cost
3.1	Sub Total				530,350	
Total					560,720	

Table D.10 Breakdown of Rehabilitation Cost on Existing Reservoir (Balti)

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
	Reservoir	LS.	1 pcs	336,420	336,420	
Total					336,420	

Table D.11 Breakdown of Construction Cost on Transmission Pipeline

(Common part to Riscani & Falesti)

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1	Transmission pipeline	φ600mm DCIP	7,770 m	170	1,320,900	
2	Air relief valve	φ600mm	5 pcs	2,280	11,400	
3	Washowout valve M.	φ600mm	6 pcs	1,620	9,720	
4	Gate valve M.	φ600mm	2 pcs	12,630	25,260	
5	Crossing railway	φ600mm, 12m	1 pcs	46,320	46,320	
6	Crossing highway	φ600mm, 20m	2 pcs	57,520	115,040	
7	Inverted siphon	φ600mm	1 pcs	3,000	3,000	
8	Water pipe bridge	φ600mm, 20m	1 pcs	11,090	11,090	
Total					1,542,730	

Table D.12 Breakdown of Construction Cost on Transmission Pipeline (to Riscani)

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1	Transmission pipeline	φ400mm DCIP	36,630 m	120	4,395,600	
2	Air relief valve	φ400mm	18 pcs	1,470	26,460	
3	Washowout valve M.	φ400mm	17 pcs	920	15,640	
4	Gate valve M.	φ400mm	10 pcs	3,340	33,400	
5	Crossing highway	φ400mm, 20m	1 pcs	31,840	31,840	
6	Inverted siphon	φ400mm	2 pcs	2,500	5,000	
7	Water pipe bridge	φ400mm, 20m	2 pcs	8,430	16,860	
8	Reservoir	LS.	1 pcs	227,060	227,060	
Total					4,751,860	

Table D.13 Breakdown of Construction Cost on Transmission Pipeline (to Falesti)

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1	Transmission pipeline	φ400mm DCIP	26,880 m	120	3,225,600	
2	Air relief valve	φ400mm	18 pcs	1,470	26,460	
3	Washowout valve M.	φ400mm	18 pcs	920	16,560	
4	Gate valve M.	φ400mm	8 pcs	3,340	26,720	
5	Crossing railway	φ400mm, 12m	2 pcs	23,040	46,080	
6	Crossing highway	φ400mm, 20m	3 pcs	31,840	95,520	
7	Inverted siphon	φ400mm	2 pcs	2,500	5,000	
8	Water pipe bridge	φ400mm, 20m	pcs	8,430	0	
9	Reservoir	LS.	1 pcs	421,490	421,490	
10	Transmission pipeline from the new reservoir to existing reservoir	φ300mm DCIP	1,500 m	110	165,000	
Total					4,028,430	

6. Construction Cost for the Case of Urgent Implementation of the Priority Project

In the feasibility study on the priority project presented in Part 3 of the main text, the target year was set to 2015 as it was in the master plan. However, an additional study has been made for the case of more urgent implementation of the project. The result is presented below.

6.1 Modifications of the 2015 Case

In the preliminary design presented in the main text, the capacities of the water transmission pumps were determined based on the total water demand of the 4 cities/towns (Balti, Soroca, Falesti, Riscani) in the year 2015. In this more urgent case, the pump capacities will be determined based on the water demand in the year 2008.

In the 2015 case, it was designed that each of the pumping stations and distribution reservoirs will have a remote terminal unit (RTU) and transmits data to the central control room in the water treatment plant through optical fiber cable network to realize supervisory control and data acquisitions (SCADA) system. Since this provision is not considered to be an urgent necessity, it will be excluded in the 2008 case.

Other provisions are the same in the 2015 case.

6.2 Water Demand in 2008

The projected total water demand from the 4 cities/towns in 2008 is 54,500 m^3/d, with the following respective quantities:

Soroca	9,900 m^3/d
Balti	37,900 m^3/d
Riscani	2,700 m^3/d
Falesti	4,000 m^3/d

Figure D.1 shows the design water flows.

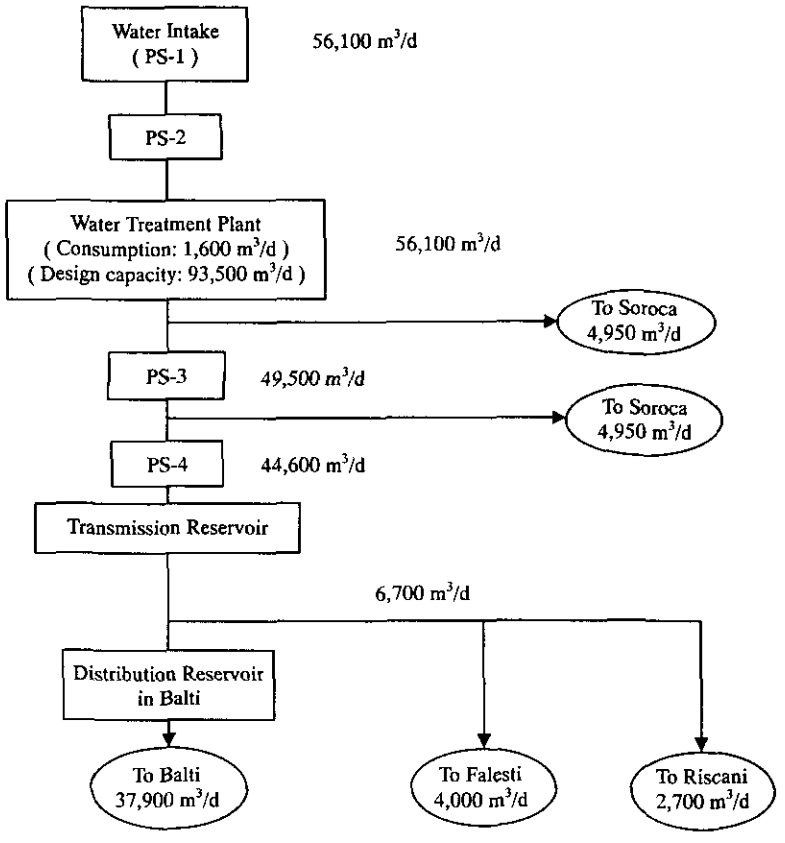

Figure D.1 Design Water Flow in 2008

6.3 Specifications of the Pumps in the Pumping Stations

Pump specifications in the 2008 case are shown in the following table, that is different from those of the 2015 case, since the design water demands are different. The numbers and types of pump are the same as those of the 2015 case.

Pumping Station	Pump Function	Specification	Number of Pump
PS-1	Intake	19.5 m^3/min x 52 m x 250 kW	3
	Bilge	1.0 m^3/min x 20 m x 7.5 kW	2
PS-2	Booster	19.5 m^3/min x 89 m x 420 kW	3
PS-3	Transmission	17.2 m^3/min x 74 m x 320 kW	3
	Backwash	15.0 m^3/min x 21.0 m x 75 kW	2
PS-4	Transmission	17.7 m^3/min x 80 m x 350 kW	3

6.4 Water Hammer Prevention

Water hammer prevention measures are the same as those in the 2015 case, since the design water flows are not greatly different between the 2 cases.

6.5 Construction Schedule and Costs

6.5.1 Construction Schedule

The construction schedule is the same as that of the 2015 case, since the types of work are the same, and only the difference is specification of pumps.

6.5.2 Construction Cost

Construction costs of the 2008 case for the improvement of the existing Soroca-Balti water supply system is shown in the following Table.

Item		Cost (US$)
		2008 Case
Pumping Station	PS-1	1,330,000
	PS-2	1,330,000
	PS-3	1,640,000
	PS-4	1,770,000
	Sub-total	6,070,000
Water Treatment Plant		2,160,000
Transmission Mains		561,000
Water Supply Instrumentation System		731,000
Total		9,522,000

The breakdown of the construction cost is shown in Tables D.14 through D.17.

6.6 Project Cost

The costs for the implementation of the priority project of the 2008 case consisting of Package 1, as indicated above, through Package 4 are shown in the following table.

Total Project Cost

Item		Cost (US$)
		2008 Case
Construction Cost Package 1) - 4)	1) Rehabilitation of the ACSB water supply system	9,522,000
	2) Completion of the unfinished reservoir in Balti	336,000
	3) Expansion of the transmission pipeline of common section	1,410,000
	4) Expansion of the transmission pipeline to Riscani and Falesti	8,596,000
	Subtotal	19,864,000
Land Acquisition		9,000
Engineering Service		1,990,000
Physical Contingency		1,990,000
Total		23,853,000

Table D.14 Breakdown of Rehabilitation Cost of PS-1

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1.1	Intake Pump with Motor	19.5m3/m*52m*250kW	3 pcs	56,000	168,000	
1.2	Bilge Pump with Motor	1.0m3/m*20m*7.5kW	2 pcs	4,500	9,000	
1.3.1	Valve	Butterfly Valve with motor 450mm	3 pcs	11,900	35,700	Suction for intake pump
1.3.2		Swing Valve 350mm	3 pcs	4,600	13,800	Check valve for intake pump
1.3.3		Gate Valve with motor 350mm	3 pcs	11,900	35,700	Delivery for intake pump
1.3.4		Swing Valve 100mm	2 pcs	600	1,200	Suction for bilge pump
1.3.5		Gate Valve 100mm	2 pcs	260	520	Delivery for bilge pump
1.4	Flow meter	1000mm	2 pcs	25,000	50,000	
1.5	Counter measure against water hammer		1 LS	150,000	150,000	
1.6	Demolishing and Installation cost for above equipments		1 LS		139,000	30 % of above cost
1.7	Vendor Supervisor		0.7 MM	21,000	14,700	
1.8	Supervisor		1 MM	21,000	21,000	
1.9		Sub Total			638,620	
2.1	6KV Switchgear		1 LS	212,000	212,000	
2.2	10~6kV Transformer		1 LS	126,000	126,000	
2.3	6kV Bus Duct	630Ax15mm2	1 LS	69,000	69,000	
2.4	Power Transformer		1 LS	20,000	20,000	
2.5	380V Switchgear		1 LS	54,000	54,000	
2.6	DC 110V Battery & Charge for SWGR Control		1 LS	6,900	6,900	
2.7	AUX Panels		1 LS	8,300	8,300	
2.8	Control switch station		1 LS	400	400	
2.9	Cables		1 LS	45,000	45,000	
2.10	Cable racks & other materials		1 LS	6,900	6,900	
2.1	Demolishing and Installation cost for above equipments		1 LS	82,300	82,300	15% of above cost
2.1	Electrical heat trace system		1 LS	9,000	9,000	
2.1	Vendor Supervisor		1 MM	21,000	21,000	
2.1	Supervisor		1 MM	21,000	21,000	
2.1		Sub Total			681,800	
3.1	Repairing of roof, windows, lightning and painting of pipe		1 LS	8,000	8,000	
3.2		Sub Total			8,000	
4.1	Improvement of intake facility		1 LS	5000	5,000	
4.2		Sub Total			5,000	
5.1	Total				1,333,420	

Table D.15 Breakdown of Rehabilitation Cost of PS-2

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
1.1	Booster Pump with Motor	19.5m3/m*89m*400kW	3 pcs	82,000	246,000	
1.2	Valve	Butterfly valve with motor 450mm	3 pcs	11,900	35,700	Suction for pump
1.2.1		Swing Valve 350mm	3 pcs	4,600	13,800	Delivery for pump
1.2.2		Gate Valve with motor 350mm	3 pcs	11,900	35,700	Check valve for pump
1.2.3		Gate Valve 800mm	2 pcs	22,600	45,200	Intake collector
1.2.4		Gate Valve 800mm	2 pcs	22,600	45,200	Outlet collector
1.3	Counter measure against water hammer		1 LS	12,500	12,500	
1.4	Demolishing and Installation cost for above equipments		1 LS		130,000	30 % of above cost
1.5	Vendor Supervisor		0.7 MM	21,000	14,700	
1.6	Supervisor		1 MM	21,000	21,000	
1.7		Sub Total			599,800	
2.1	6KV Switchgear		1 LS	212,000	212,000	
2.2	10-6kV Transformer		1 LS	199,000	199,000	
2.3	6kV Bus Duct	630Ax15mm2	1 LS	69,000	69,000	
2.4	Power Transformer		1 LS	20,000	20,000	
2.5	380V Switchgear		1 LS	54,000	54,000	
2.6	DC 110V Battery & Charge for SWGR Control		1 LS	6,900	6,900	
2.7	AUX Panels		1 LS	8,300	8,300	
2.8	Control switch station		1 LS	400	400	
2.9	Cables		1 LS	5,000	5,000	
2.10	Cable racks & other materials		1 LS	6,900	6,900	
2.11	Demolishing and Installation cost for above equipments		1 LS	87,300	87,300	15% of above cost
2.12	Electrical heat trace system		1 LS	9,000	9,000	
2.13	Vendor Supervisor		1 MM	21,000	21,000	
2.14	Supervisor		1 MM	21,000	21,000	
2.15		Sub Total			719,800	
3.1	Repairing of roof, windows, lightning and painting of pipe		1 LS	15,000	15,000	
3.2		Sub Total			15,000	
4.1	Total				1,334,600	

Table D.16 Breakdown of Rehabilitation Cost of PS-3

Unit: US$

No.	Item	Specification	Quantity		Unit cost	Cost	Remarks
1.1	Pump with Motor	17.2m3/m*74m*300kW	3	pcs	65,000	195,000	
1.2	Backwash Pump with Motor	15.0m3/m*21m*75kW	2	pcs	32,000	64,000	
1.3.1	Valve	Butterfly valve with motor 400mm	3	pcs	10,800	32,400	Suction for pump
1.3.2		Swing valve 300mm	3	pcs	4,000	12,000	Check valve for pump
1.3.3		Gate valve with motor 300mm	3	pcs	10,200	30,600	Delivery for pump
1.3.4		Butterfly valve with motor 400mm	2	pcs	10,800	21,600	Suction for pump
1.3.5		Swing valve 300mm	2	pcs	4,000	8,000	Check valve for pump
1.3.6		Gate valve with motor 300mm	2	pcs	10,200	20,400	Delivery for pump
1.4	Flow meter	1000mm	1	pcs	25,000	25,000	To PS 4
1.5	Flow meter	500mm	1	pcs	18,000	18,000	To Soroca
1.6	Flow meter	500mm	1	pcs	18,000	18,000	To Soroca
1.7	Counter measure against water hammer		1	LS	150,000	150,000	
1.8	Demolishing and Installation cost for above equipments		1	LS		179,000	30 % of above cost
1.8	Vendor Supervisor		0.7	MM	21,000	14,700	
1.9	Supervisor		1	MM	21,000	21,000	
1.1		Sub Total				809,700	
2.1	6KV Switchgear		1	LS	212,000	212,000	
2.2	10-6kV Transformer		1	LS	199,000	199,000	
2.3	6kV Bus Duct	630Ax15mm2	1	LS	69,000	69,000	
2.4	Power Transformer		1	LS	20,000	20,000	
2.5	380V Switchgear		1	LS	87,000	87,000	
2.6	AC220V UPS for Instrumentation		1	LS	20,000	20,000	
2.7	DC 110V Battery & Charge for SWGR Control		1	LS	6,900	6,900	
2.8	AUX Panels		1	LS	8,300	8,300	
2.9	Control switch station		1	LS	1,800	1,800	
2.10	Cables		1	LS	29,000	29,000	
2.11	Cable racks & other materials		1	LS	6,900	6,900	
2.12	Demolishing and Installation cost for above equipments		1	LS	99,000	99,000	15% of above cost
2.13	Electrical heat trace system		1	LS	9,000	9,000	
2.14	Vendor Supervisor		1	MM	21,000	21,000	
2.15	Supervisor		1	MM	21,000	21,000	
2.16		Sub Total				809,900	
3.1	Repairing of roof, windows, lightning and painting of pipe		1	LS	18,000	18,000	
3.2		Sub Total				18,000	
4.1	Total					1,637,600	

Table D.17 Breakdown of Rehabilitation Cost of PS-4

Unit: US$

No.	Item	Specification	Quantity	Unit cost	Cost	Remarks
A	PS.4					
A1.1	Pump with Motor	15.5m3/m*80m*300kW	3 pcs	65,000	195,000	
A1.2.1	Valve	Butterfly Valve with motor 400mm	3 pcs	10,800	32,400	Suction for pump
A1.2.2	Valve	Swing Valve 300mm	3 pcs	4,000	12,000	Check valve for pump
A1.2.3	Valve	Gate Valve with motor 300mm	3 pcs	10,200	30,600	Delivery for pump
A1.3	Water level sensor		2 pcs	500	1,000	
A1.4	Counter measure against water hammer		1 LS	150,000	150,000	
A1.5	Demolishing and Installation cost for above equipments		1 LS		126,000	30 % of above cost
A1.6	Vendor Supervisor		1 MM	21,000	21,000	
A1.7	Supervisor		1 MM	21,000	21,000	
A1.8		Sub Total			589,000	
A2.1	6KV Switchgear		1 LS	212,000	212,000	
A2.2	10-6kV Transformer		1 LS	126,000	126,000	
A2.3	6kV Bus Duct	630Ax15mm2	1 LS	69,000	69,000	
A2.4	Power Transformer		1 LS	20,000	20,000	
A2.5	380V Switchgear		1 LS	54,000	54,000	
A2.6	DC 110V Battery & Charge for SWGR Control		1 LS	6,900	6,900	
A2.7	AUX Panels		1 LS	8,300	8,300	
A2.8	Control switch station		1 LS	400	400	
A2.9	Cables		1 LS	5,000	5,000	
A2.10	Cable racks & other materials		1 LS	6,900	6,900	
A2.11	Demolishing and Installation cost for above equipments		1 LS	76,300	76,300	15% of above cost
A2.12	Electrical heat trace system		1 LS	9,000	9,000	
A2.13	Vendor Supervisor		1 MM	21,000	21,000	
A2.14	Supervisor		1 MM	21,000	21,000	
A2.15		Sub Total			635,800	
A3.1	Repairing of roof, windows, lightning and painting of pipe		1 LS	15,000	15,000	
A3.2		Sub Total			15,000	
A4.1	Total				1,239,800	
B	**Transmission Reservoir**					
B1.1.1	Valve	Butterfly Valve with motor 1000mm	2 pcs	31,000	62000	Inlet
B1.1.2	Valve	Butterfly Valve with motor 1000mm	2 pcs	31,000	62000	Outlet
B1.2	Water level sensor		2 pcs	500	1000	
B1.3	Demolishing and Installation cost for above equipments		1 LS	375,000	375000	30 % of above cost
B1.4		Sub Total			500,000	
B2.1	Local Control Panel		1 LS	8,500	8500	
B2.2	10kV-380V KIOSK	50kVA	1 LS	17,000	17,000	
B2.3	Demolishing and Installation cost for above equipments		1 LS	3,900	3,900	15 % of above cost
B2.4		Sub Total			29,400	
B3.1	Total				529,400	
C	Grand Total				1,769,200	

ANNEX E

ECONOMIC AND FINANCIAL ANALYSES

1. Economic and Financial Analyses of the Master Plan

The result of economic analysis of the master plan is shown in Table E.1, and the results of financial analyses are shown in Tables E.2 through E.29. The analyses were made for the following cases.

Case M	Main Case: Apa Canal Soroca-Balti supplies water to the cities of Soroca and Balti only.
Case M+R	Apa Canal Soroca-Balti supplies water to the cities of Soroca and Balti and the town of Riscani.
Case M+F	Apa Canal Soroca-Balti supplies water to the cities of Soroca and Balti and the town of Falesti.
Case M+R+F	Apa Canal Soroca-Balti supplies water to the cities of Soroca and Balti and the towns of Riscani and Falesti.
100%, 50%, 30%	Percentage of initial investment financed by loan; the rest is assumed to be financed by the government subsidy.
Consolidated	Apa Canal Soroca-Balti and relevant Municipal Apa Canal(s) are assumed to be consolidated into one organization (one project owner).

Table E.30 shows changes of ACSB's wholesale water price toward the future, that are assumed based on the macroeconomic forecast in Moldova.

2. Financial Analysis in the Feasibility Study on the Priority Project

Tables E.31 through E.33 show the data for financial analysis of Apa Canal Soroca-Balti (ACSB) for the 3 cases defined in the Main Report for the original case where the capacities of the transmission pumps are determined in accordance with the water demand in 2015 (2015 Case).

Tables E.34 through E.36 show the same for the urgent implementation case where the capacities of the transmission pumps are determined in accordance with the water demand in 2008, and some components of the instrumentation system related to the pumping stations and distribution reservoirs are excluded since they are not urgently necessary (2008 Case). Tables E.37 through E.39 show the pro forma financial statements of ACSB in the 2008 Case.

Table E.1 EIRR and NPV Eatimates of the Master Plan

Case= M+R+F (Consolidated)

(USD 1000)

Year	Total Cost	Labor Saving	Net Benefit	EIRR	NPV at 7%
2004	8,532	1,633	(6,899)		
2005	7,880	1,837	(6,043)		
2006	1,957	1,929	(28)		
2007	476	2,025	1,549		
2008	582	2,127	1,545		
2009	869	2,233	1,364		
2010	812	2,635	1,822		
2011	943	2,766	1,823		
2012	993	2,905	1,912		
2013	1,232	3,050	1,817		
2014	1,683	3,202	1,519		
2015	1,561	3,748	2,187		
2016	1,561	3,936	2,374		
2017	1,561	4,132	2,571		
2018	1,561	4,339	2,778		
2019	1,561	4,556	2,995		
2020	1,561	4,784	3,222		
2021	1,561	5,023	3,462		
2022	1,561	5,274	3,713		
2023	1,561	5,538	3,977		
2024	3,181	5,815	2,633		
2025	3,181	6,106	2,924		
2026	546	6,411	5,865		
2027	1,561	6,731	5,170		
2028	1,561	7,068	5,507		
2029	1,489	7,421	5,932		
2030	1,561	7,792	6,231		
2031	1,561	8,182	6,621		
2032	1,480	8,591	7,111		
2033	1,561	9,021	7,459		
2034	1,561	9,472	7,910		
2035	1,561	9,945	8,384		
2036	1,561	10,442	8,881		
2037	1,561	10,965	9,403		
2038	1,561	11,513	9,951		
2039	1,561	12,088	10,527		
2040	1,561	12,693	11,132		
2041	1,561	13,328	11,766		
2042	1,561	13,994	12,433		
2043	1,561	14,694	13,132	14.50%	24,222

Table E.2 Financial Analysis of Apa Canal Soroca-Balti (Case M)

(USD 1000)

Year	Civil	M&E	100% Civil	100% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,240	2,640	3,240	2,640	0	5,880	0	(5,880)		
2005	2,160	1,760	2,160	1,760	0	3,920	0	(3,920)		
2006					1,306	1,306	1,573	267		
2007					1,407	1,407	1,700	293		
2008					1,513	1,513	1,836	323		
2009					1,628	1,628	1,981	352		
2010					1,750	1,750	2,136	386		
2011					1,882	1,882	2,302	420		
2012					2,020	2,020	2,480	460		
2013					2,169	2,169	2,670	501		
2014					2,328	2,328	2,873	545		
2015					2,499	2,499	3,089	590		
2016					2,499	2,499	3,089	590		
2017					2,499	2,499	3,089	590		
2018					2,499	2,499	3,089	590		
2019					2,499	2,499	3,089	590		
2020					2,499	2,499	3,089	590		
2021					2,499	2,499	3,089	590		
2022					2,499	2,499	3,089	590		
2023					2,499	2,499	3,089	590		
2024		2,376		2,376	2,499	4,875	3,089	(1,786)		
2025		1,584		1,584	2,499	4,083	3,089	(994)		
2026					2,499	2,499	3,089	590		
2027					2,499	2,499	3,089	590		
2028					2,499	2,499	3,089	590		
2029					2,499	2,499	3,089	590		
2030					2,499	2,499	3,089	590		
2031					2,499	2,499	3,089	590		
2032					2,499	2,499	3,089	590		
2033					2,499	2,499	3,089	590		
2034					2,499	2,499	3,089	590		
2035					2,499	2,499	3,089	590		
2036					2,499	2,499	3,089	590		
2037					2,499	2,499	3,089	590		
2038					2,499	2,499	3,089	590		
2039					2,499	2,499	3,089	590		
2040					2,499	2,499	3,089	590		
2041					2,499	2,499	3,089	590		
2042					2,499	2,499	3,089	590		
2043					2,499	2,499	3,089	590	2.70%	(4,254)

Table E.3 Financial Analysis of Apa Canal Soroca-Balti (Case M)

(USD 1000)

Year	Civil	M&E	50% Civil	50% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,240	2,640	1,620	1,320	0	2,940	0	(2,940)		
2005	2,160	1,760	1,080	880	0	1,960	0	(1,960)		
2006					1,306	1,306	1,573	267		
2007					1,407	1,407	1,700	293		
2008					1,513	1,513	1,836	323		
2009					1,628	1,628	1,981	352		
2010					1,750	1,750	2,136	386		
2011					1,882	1,882	2,302	420		
2012					2,020	2,020	2,480	460		
2013					2,169	2,169	2,670	501		
2014					2,328	2,328	2,873	545		
2015					2,499	2,499	3,089	590		
2016					2,499	2,499	3,089	590		
2017					2,499	2,499	3,089	590		
2018					2,499	2,499	3,089	590		
2019					2,499	2,499	3,089	590		
2020					2,499	2,499	3,089	590		
2021					2,499	2,499	3,089	590		
2022					2,499	2,499	3,089	590		
2023					2,499	2,499	3,089	590		
2024		2,376		1,188	2,499	3,687	3,089	(598)		
2025		1,584		792	2,499	3,291	3,089	(202)		
2026					2,499	2,499	3,089	590		
2027					2,499	2,499	3,089	590		
2028					2,499	2,499	3,089	590		
2029					2,499	2,499	3,089	590		
2030					2,499	2,499	3,089	590		
2031					2,499	2,499	3,089	590		
2032					2,499	2,499	3,089	590		
2033					2,499	2,499	3,089	590		
2034					2,499	2,499	3,089	590		
2035					2,499	2,499	3,089	590		
2036					2,499	2,499	3,089	590		
2037					2,499	2,499	3,089	590		
2038					2,499	2,499	3,089	590		
2039					2,499	2,499	3,089	590		
2040					2,499	2,499	3,089	590		
2041					2,499	2,499	3,089	590		
2042					2,499	2,499	3,089	590		
2043					2,499	2,499	3,089	590	8.10%	672

Table E.4 Financial Analysis of Apa Canal Soroca-Balti (Case M)

(USD 1000)

Year	Civil	M&E	30% Civil	30% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,240	2,640	972	792	0	1,764	0	(1,764)		
2005	2,160	1,760	648	528	0	1,176	0	(1,176)		
2006					1,306	1,306	1,573	267		
2007					1,407	1,407	1,700	293		
2008					1,513	1,513	1,836	323		
2009					1,628	1,628	1,981	352		
2010					1,750	1,750	2,136	386		
2011					1,882	1,882	2,302	420		
2012					2,020	2,020	2,480	460		
2013					2,169	2,169	2,670	501		
2014					2,328	2,328	2,873	545		
2015					2,499	2,499	3,089	590		
2016					2,499	2,499	3,089	590		
2017					2,499	2,499	3,089	590		
2018					2,499	2,499	3,089	590		
2019					2,499	2,499	3,089	590		
2020					2,499	2,499	3,089	590		
2021					2,499	2,499	3,089	590		
2022					2,499	2,499	3,089	590		
2023					2,499	2,499	3,089	590		
2024		2,376		713	2,499	3,212	3,089	(123)		
2025		1,584		475	2,499	2,974	3,089	115		
2026					2,499	2,499	3,089	590		
2027					2,499	2,499	3,089	590		
2028					2,499	2,499	3,089	590		
2029					2,499	2,499	3,089	590		
2030					2,499	2,499	3,089	590		
2031					2,499	2,499	3,089	590		
2032					2,499	2,499	3,089	590		
2033					2,499	2,499	3,089	590		
2034					2,499	2,499	3,089	590		
2035					2,499	2,499	3,089	590		
2036					2,499	2,499	3,089	590		
2037					2,499	2,499	3,089	590		
2038					2,499	2,499	3,089	590		
2039					2,499	2,499	3,089	590		
2040					2,499	2,499	3,089	590		
2041					2,499	2,499	3,089	590		
2042					2,499	2,499	3,089	590		
2043					2,499	2,499	3,089	590	13.24%	2,642

Table E.5 Financial Analysis of Apa Canal Soroca-Balti (Case M+R)

(USD 1000)

Year	Civil	M&E	100% Civil	100% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,960	1,760	3,960	1,760	0	5,720	0	(5,720)		
2005	3,960	1,760	3,960	1,760	0	5,720	0	(5,720)		
2006	1,980	880	1,980	880	0	2,860	0	(2,860)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,584		1,584	2,668	4,252	3,324	(928)		
2025		1,584		1,584	2,668	4,252	3,324	(928)		
2026		792		792	2,668	3,460	3,324	(136)		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	1.29%	(7,635)

Table E.6 Financial Analysis of Apa Canal Soroca-Balti (Case M+R)

(USD 1000)

Year	Civil	M&E	50% Civil	50% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,960	1,760	1,980	880	0	2,860	0	(2,860)		
2005	3,960	1,760	1,980	880	0	2,860	0	(2,860)		
2006	1,980	880	990	440	0	1,430	0	(1,430)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,584		792	2,668	3,460	3,324	(136)		
2025		1,584		792	2,668	3,460	3,324	(136)		
2026		792		396	2,668	3,064	3,324	260		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	5.97%	(843)

Table E.7 Financial Analysis of Apa Canal Soroca-Balti (Case M+R)

(USD 1000)

Year	Civil	M&E	30% Civil	30% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,960	1,760	1,188	528	0	1,716	0	(1,716)		
2005	3,960	1,760	1,188	528	0	1,716	0	(1,716)		
2006	1,980	880	594	264	0	858	0	(858)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,584		475	2,668	3,143	3,324	181		
2025		1,584		475	2,668	3,143	3,324	181		
2026		792		238	2,668	2,905	3,324	419		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	10.25%	1,874

Table E.8 Financial Analysis of Apa Canal Soroca-Balti (Case M+F)

(USD 1000)

Year	Civil	M&E	Civil 100%	M&E 100%	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,880	1,760	3,880	1,760	0	5,640	0	(5,640)		
2005	3,880	1,760	3,880	1,760	0	5,640	0	(5,640)		
2006	1,940	880	1,940	880	0	2,820	0	(2,820)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,584		1,584	2,668	4,252	3,324	(928)		
2025		1,584		1,584	2,668	4,252	3,324	(928)		
2026		792		792	2,668	3,460	3,324	(136)		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	1.36%	(7,458)

Table E.9 Financial Analysis of Apa Canal Soroca-Balti (Case M+F)

			50%	50%						(USD 1000)
Year	Civil	M&E	Civil	M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,880	1,760	1,940	880	0	2,820	0	(2,820)		
2005	3,880	1,760	1,940	880	0	2,820	0	(2,820)		
2006	1,940	880	970	440	0	1,410	0	(1,410)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,584		792	2,668	3,460	3,324	(136)		
2025		1,584		792	2,668	3,460	3,324	(136)		
2026		792		396	2,668	3,064	3,324	260		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	6.07%	(754)

Table E.10 Financial Analysis of Apa Canal Soroca-Balti (Case M+F)

(USD 1000)

Year	Civil	M&E	30% Civil	30% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	3,880	1,760	1,164	528	0	1,692	0	(1,692)		
2005	3,880	1,760	1,164	528	0	1,692	0	(1,692)		
2006	1,940	880	582	264	0	846	0	(846)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,584		475	2,668	3,143	3,324	181		
2025		1,584		475	2,668	3,143	3,324	181		
2026		792		238	2,668	2,905	3,324	419		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	10.38%	1,927

Table E.11 Financial Analysis of Apa Canal Soroca-Balti (Case M+R+F)

(USD 1000)

Year	Civil	M&E	100% Civil	100% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	6,368	2,032	6,368	2,032	0	8,400	0	(8,400)		
2005	6,268	2,032	6,268	2,032	0	8,300	0	(8,300)		
2006	3,184	1,016	3,184	1,016	0	4,200	0	(4,200)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,829		1,829	2,668	4,497	3,324	(1,173)		
2025		1,829		1,829	2,668	4,497	3,324	(1,173)		
2026		914		914	2,668	3,582	3,324	(258)		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	#NUM!	(13,627)

Table E.12 Financial Analysis of Apa Canal Soroca-Balti (Case M+R+F)

(USD 1000)

Year	Civil	M&E	Civil 50%	M&E 50%	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	6,368	2,032	3,184	1,016	0	4,200	0	(4,200)		
2005	6,268	2,032	3,134	1,016	0	4,150	0	(4,150)		
2006	3,184	1,016	1,592	508	0	2,100	0	(2,100)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,829		914	2,668	3,582	3,324	(258)		
2025		1,829		914	2,668	3,582	3,324	(258)		
2026		914		457	2,668	3,125	3,324	199		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	3.46%	(3,839)

Table E.13 Financial Analysis of Apa Canal Soroca-Balti (Case M+R+F)

(USD 1000)

Year	Civil	M&E	30% Civil	30% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow	FIRR	NPV at 7%
2004	6,368	2,032	1,910	610	0	2,520	0	(2,520)		
2005	6,268	2,032	1,880	610	0	2,490	0	(2,490)		
2006	3,184	1,016	955	305	0	1,260	0	(1,260)		
2007					1,471	1,471	1,791	319		
2008					1,588	1,588	1,939	350		
2009					1,714	1,714	2,097	383		
2010					1,844	1,844	2,266	422		
2011					1,988	1,988	2,450	462		
2012					2,142	2,142	2,647	505		
2013					2,307	2,307	2,858	551		
2014					2,480	2,480	3,083	603		
2015					2,668	2,668	3,324	656		
2016					2,668	2,668	3,324	656		
2017					2,668	2,668	3,324	656		
2018					2,668	2,668	3,324	656		
2019					2,668	2,668	3,324	656		
2020					2,668	2,668	3,324	656		
2021					2,668	2,668	3,324	656		
2022					2,668	2,668	3,324	656		
2023					2,668	2,668	3,324	656		
2024		1,829		549	2,668	3,216	3,324	107		
2025		1,829		549	2,668	3,216	3,324	107		
2026		914		274	2,668	2,942	3,324	382		
2027					2,668	2,668	3,324	656		
2028					2,668	2,668	3,324	656		
2029					2,668	2,668	3,324	656		
2030					2,668	2,668	3,324	656		
2031					2,668	2,668	3,324	656		
2032					2,668	2,668	3,324	656		
2033					2,668	2,668	3,324	656		
2034					2,668	2,668	3,324	656		
2035					2,668	2,668	3,324	656		
2036					2,668	2,668	3,324	656		
2037					2,668	2,668	3,324	656		
2038					2,668	2,668	3,324	656		
2039					2,668	2,668	3,324	656		
2040					2,668	2,668	3,324	656		
2041					2,668	2,668	3,324	656		
2042					2,668	2,668	3,324	656		
2043					2,668	2,668	3,324	656	7.10%	76

Table E.14 Financial Analysis of Apa Canal Soroca

(USD 1000)

Year	With		Without		Difference		With	Without	Difference	Difference	With	Without	Difference	Net Cash Flow	NPV at 7%
	Civill	M&E	Civill	M&E	Civill	M&E	O&M	O&M	O&M	Total Outflow	Net Revenue	Revenue	Revenue		
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2006	0	0	0	100	0	(100)	327	502	(176)	(276)	338	268	70	346	
2007	0	0	0	0	0	0	343	527	(185)	(185)	367	281	86	271	
2008	0	0	0	0	0	0	360	554	(194)	(194)	398	295	103	297	
2009	0	0	0	0	0	0	378	582	(204)	(204)	432	310	122	325	
2010	0	0	0	0	0	0	397	611	(214)	(214)	467	325	142	356	
2011	0	0	0	0	0	0	417	641	(224)	(224)	506	342	164	389	
2012	0	0	0	90	0	(90)	438	673	(236)	(326)	547	359	189	514	
2013	0	0	0	0	0	0	459	707	(247)	(247)	591	377	215	462	
2014	0	0	0	0	0	0	482	742	(260)	(260)	639	395	243	503	
2015	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2016	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2017	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2018	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2019	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2020	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2021	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2022	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2023	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2024	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2025	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2026	0	0	0	90	0	(90)	507	779	(273)	(363)	689	415	274	637	
2027	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2028	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2029	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2030	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2031	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2032	0	0	0	81	0	(81)	507	779	(273)	(354)	689	415	274	628	
2033	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2034	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2035	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2036	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2037	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2038	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2039	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2040	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2041	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2042	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	
2043	0	0	0	0	0	0	507	779	(273)	(273)	689	415	274	547	5,338

Table E.15 Financial Analysis of Apa Canal Balti

(USD 1000)

Year	With		Without		Difference		With	Without	Difference	Difference	With	Without	Difference	Net Cash Flow	NPV at 7%
	Civill	M&E	Civill	M&E	Civill	M&E	O&M	O&M	O&M	Total Outflow	Net Revenue	Revenue	Revenue		
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2006	0	0	0	2,553	0	(2,553)	1,365	2,101	(735)	(3,288)	1,960	2,933	(973)	2,315	
2007	0	0	0	0	0	0	1,365	2,101	(735)	(735)	2,115	3,080	(964)	(229)	
2008	0	0	0	0	0	0	1,365	2,101	(735)	(735)	2,281	3,234	(952)	(217)	
2009	0	0	0	0	0	0	1,365	2,101	(735)	(735)	2,459	3,395	(937)	(201)	
2010	0	0	0	0	0	0	1,365	2,101	(735)	(735)	2,648	3,565	(917)	(182)	
2011	0	0	0	0	0	0	1,365	2,101	(735)	(735)	2,851	3,743	(892)	(157)	
2012	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,068	3,930	(863)	(127)	
2013	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,299	4,127	(828)	(92)	
2014	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,546	4,333	(787)	(52)	
2015	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2016	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2017	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2018	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2019	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2020	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2021	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2022	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2023	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2024	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2025	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2026	0	0	0	2,298	0	(2,298)	1,365	2,101	(735)	(3,033)	3,809	4,550	(741)	2,292	
2027	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2028	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2029	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2030	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2031	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2032	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2033	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2034	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2035	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2036	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2037	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2038	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2039	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2040	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2041	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2042	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	
2043	0	0	0	0	0	0	1,365	2,101	(735)	(735)	3,809	4,550	(741)	(5)	1,534

Table E.16 Financial Analysis of Apa Canal Riscani

(USD 1000)

Year	With		Without		Difference		With	Without	Difference	Difference	With	Without	Difference	Net Cash Flow	NPV at 7%
	Civill	M&E	Civill	M&E	Civill	M&E	O&M	O&M	O&M	Total Outflow	Net Revenue	Revenue	Revenue		
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005	154	0	0	0	154	0	0	0	0	154	0	0	0	(154)	
2006	0	0	0	100	0	(100)	0	0	0	(100)	0	0	0	100	
2007	0	0	0	0	0	0	90	139	(49)	(49)	95	35	60	108	
2008	0	0	0	0	0	0	95	146	(51)	(51)	107	37	70	122	
2009	135	0	0	0	135	0	100	153	(54)	81	121	39	82	1	
2010	0	0	0	0	0	0	105	161	(56)	(56)	136	41	95	151	
2011	0	0	0	0	0	0	110	169	(59)	(59)	155	43	112	171	
2012	0	0	0	0	0	0	115	177	(62)	(62)	175	45	130	192	
2013	0	0	0	0	0	0	121	186	(65)	(65)	197	47	150	215	
2014	171	0	0	0	171	0	127	196	(68)	102	220	49	171	69	
2015	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2016	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2017	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2018	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2019	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2020	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2021	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2022	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2023	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2024	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2025	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2026	0	0	0	90	0	(90)	134	205	(72)	(162)	246	52	194	356	
2027	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2028	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2029	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2030	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2031	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2032	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2033	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2034	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2035	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2036	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2037	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2038	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2039	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2040	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2041	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2042	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	
2043	0	0	0	0	0	0	134	205	(72)	(72)	246	52	194	266	2,128

Table E.17 Financial Analysis of Apa Canal Falesti

(USD 1000)

Year	With		Without		Difference		With	Without	Difference	Difference	With	Without	Difference	Net Cash *Flow*	NPV at 7%
	Civil	M&E	Civil	M&E	Civil	M&E	O&M	O&M	O&M	Total Outflow	Net Revenue	Revenue	Revenue		
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005	118	0	0	0	118	0	0	0	0	118	0	0	0	(118)	
2006	0	0	0	175	0	(175)	0	0	0	(175)	0	0	0	175	
2007	0	0	0	0	0	0	49	76	(27)	(27)	147	70	77	104	
2008	0	0	0	0	0	0	49	76	(27)	(27)	161	74	88	114	
2009	120	0	0	80	120	(80)	49	76	(27)	13	177	77	99	86	
2010	0	0	0	0	0	0	49	76	(27)	(27)	193	81	111	138	
2011	0	0	0	0	0	0	49	76	(27)	(27)	210	85	125	151	
2012	0	0	0	0	0	0	49	76	(27)	(27)	229	90	139	166	
2013	0	0	0	0	0	0	49	76	(27)	(27)	249	94	155	182	
2014	122	0	0	0	122	0	49	76	(27)	95	271	99	172	77	
2015	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2016	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2017	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2018	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2019	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2020	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2021	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2022	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2023	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2024	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2025	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2026	0	0	0	158	0	(158)	49	76	(27)	(184)	294	104	190	375	
2027	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2028	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2029	0	0	0	72	0	(72)	49	76	(27)	(99)	294	104	190	289	
2030	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2031	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2032	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2033	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2034	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2035	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2036	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2037	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2038	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2039	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2040	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2041	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2042	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	
2043	0	0	0	0	0	0	49	76	(27)	(27)	294	104	190	217	1,962

Table E.18 Consolidated Financial Analysis (Case M)

(USD 1000)

Year	Civil	M&E	Civil 100%	M&E 100%	OM&OH	Total Outflow	Revenue	Net Cash Flow (M)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Consolidated Net Cash Flow	FIRR	NPV at 7%
2004	3,240	2,640	3,240	2,640	0	5,880	0	(5,880)			(5,880)		
2005	2,160	1,760	2,160	1,760	0	3,920	0	(3,920)			(3,920)		
2006					1,306	1,306	1,573	267	346	2,315	2,929		
2007					1,407	1,407	1,700	293	271	(229)	335		
2008					1,513	1,513	1,836	323	297	(217)	402		
2009					1,628	1,628	1,981	352	325	(201)	476		
2010					1,750	1,750	2,136	386	356	(182)	560		
2011					1,882	1,882	2,302	420	389	(157)	652		
2012					2,020	2,020	2,480	460	514	(127)	847		
2013					2,169	2,169	2,670	501	462	(92)	871		
2014					2,328	2,328	2,873	545	503	(52)	996		
2015					2,499	2,499	3,089	590	547	(5)	1,131		
2016					2,499	2,499	3,089	590	547	(5)	1,131		
2017					2,499	2,499	3,089	590	547	(5)	1,131		
2018					2,499	2,499	3,089	590	547	(5)	1,131		
2019					2,499	2,499	3,089	590	547	(5)	1,131		
2020					2,499	2,499	3,089	590	547	(5)	1,131		
2021					2,499	2,499	3,089	590	547	(5)	1,131		
2022					2,499	2,499	3,089	590	547	(5)	1,131		
2023					2,499	2,499	3,089	590	547	(5)	1,131		
2024		2,376		2,376	2,499	4,875	3,089	(1,786)	547	(5)	(1,245)		
2025		1,584		1,584	2,499	4,083	3,089	(994)	547	(5)	(453)		
2026					2,499	2,499	3,089	590	637	2,292	3,519		
2027					2,499	2,499	3,089	590	547	(5)	1,131		
2028					2,499	2,499	3,089	590	547	(5)	1,131		
2029					2,499	2,499	3,089	590	547	(5)	1,131		
2030					2,499	2,499	3,089	590	547	(5)	1,131		
2031					2,499	2,499	3,089	590	547	(5)	1,131		
2032					2,499	2,499	3,089	590	628	(5)	1,212		
2033					2,499	2,499	3,089	590	547	(5)	1,131		
2034					2,499	2,499	3,089	590	547	(5)	1,131		
2035					2,499	2,499	3,089	590	547	(5)	1,131		
2036					2,499	2,499	3,089	590	547	(5)	1,131		
2037					2,499	2,499	3,089	590	547	(5)	1,131		
2038					2,499	2,499	3,089	590	547	(5)	1,131		
2039					2,499	2,499	3,089	590	547	(5)	1,131		
2040					2,499	2,499	3,089	590	547	(5)	1,131		
2041					2,499	2,499	3,089	590	547	(5)	1,131		
2042					2,499	2,499	3,089	590	547	(5)	1,131		
2043					2,499	2,499	3,089	590	547	(5)	1,131	9.34%	2,618

Table E.19 Cosolidated Financial Analysis (Case M)

(USD 1000)

Year	Civil	M&E	Civil 50%	M&E 50%	OM&OH	Total Outflow	Revenue	Net Cash Flow (M)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Consolidated Net Cash Flow	FIRR	NPV at 7%
2004	3,240	2,640	1,620	1,320	0	2,940	0	(2,940)			(2,940)		
2005	2,160	1,760	1,080	880	0	1,960	0	(1,960)			(1,960)		
2006					1,306	1,306	1,573	267	346	2,315	2,929		
2007					1,407	1,407	1,700	293	271	(229)	335		
2008					1,513	1,513	1,836	323	297	(217)	402		
2009					1,628	1,628	1,981	352	325	(201)	476		
2010					1,750	1,750	2,136	386	356	(182)	560		
2011					1,882	1,882	2,302	420	389	(157)	652		
2012					2,020	2,020	2,480	460	514	(127)	847		
2013					2,169	2,169	2,670	501	462	(92)	871		
2014					2,328	2,328	2,873	545	503	(52)	996		
2015					2,499	2,499	3,089	590	547	(5)	1,131		
2016					2,499	2,499	3,089	590	547	(5)	1,131		
2017					2,499	2,499	3,089	590	547	(5)	1,131		
2018					2,499	2,499	3,089	590	547	(5)	1,131		
2019					2,499	2,499	3,089	590	547	(5)	1,131		
2020					2,499	2,499	3,089	590	547	(5)	1,131		
2021					2,499	2,499	3,089	590	547	(5)	1,131		
2022					2,499	2,499	3,089	590	547	(5)	1,131		
2023					2,499	2,499	3,089	590	547	(5)	1,131		
2024		2,376		1,188	2,499	3,687	3,089	(598)	547	(5)	(57)		
2025		1,584		792	2,499	3,291	3,089	(202)	547	(5)	339		
2026					2,499	2,499	3,089	590	637	2,292	3,519		
2027					2,499	2,499	3,089	590	547	(5)	1,131		
2028					2,499	2,499	3,089	590	547	(5)	1,131		
2029					2,499	2,499	3,089	590	547	(5)	1,131		
2030					2,499	2,499	3,089	590	547	(5)	1,131		
2031					2,499	2,499	3,089	590	547	(5)	1,131		
2032					2,499	2,499	3,089	590	628	(5)	1,212		
2033					2,499	2,499	3,089	590	547	(5)	1,131		
2034					2,499	2,499	3,089	590	547	(5)	1,131		
2035					2,499	2,499	3,089	590	547	(5)	1,131		
2036					2,499	2,499	3,089	590	547	(5)	1,131		
2037					2,499	2,499	3,089	590	547	(5)	1,131		
2038					2,499	2,499	3,089	590	547	(5)	1,131		
2039					2,499	2,499	3,089	590	547	(5)	1,131		
2040					2,499	2,499	3,089	590	547	(5)	1,131		
2041					2,499	2,499	3,089	590	547	(5)	1,131		
2042					2,499	2,499	3,089	590	547	(5)	1,131		
2043					2,499	2,499	3,089	590	547	(5)	1,131	19.30%	7,543

Table E.20 Consolidated Financial Analysis (Case M)

(USD 1000)

Year	Civil	M&E	30% Civil	30% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow (M)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Consolidated Net Cash Flow	FIRR	NPV at 7%
2004	3,240	2,640	972	792	0	1,764	0	(1,764)			(1,764)		
2005	2,160	1,760	648	528	0	1,176	0	(1,176)			(1,176)		
2006					1,306	1,306	1,573	267	346	2,315	2,929		
2007					1,407	1,407	1,700	293	271	(229)	335		
2008					1,513	1,513	1,836	323	297	(217)	402		
2009					1,628	1,628	1,981	352	325	(201)	476		
2010					1,750	1,750	2,136	386	356	(182)	560		
2011					1,882	1,882	2,302	420	389	(157)	652		
2012					2,020	2,020	2,480	460	514	(127)	847		
2013					2,169	2,169	2,670	501	462	(92)	871		
2014					2,328	2,328	2,873	545	503	(52)	996		
2015					2,499	2,499	3,089	590	547	(5)	1,131		
2016					2,499	2,499	3,089	590	547	(5)	1,131		
2017					2,499	2,499	3,089	590	547	(5)	1,131		
2018					2,499	2,499	3,089	590	547	(5)	1,131		
2019					2,499	2,499	3,089	590	547	(5)	1,131		
2020					2,499	2,499	3,089	590	547	(5)	1,131		
2021					2,499	2,499	3,089	590	547	(5)	1,131		
2022					2,499	2,499	3,089	590	547	(5)	1,131		
2023					2,499	2,499	3,089	590	547	(5)	1,131		
2024		2,376		713	2,499	3,212	3,089	(123)	547	(5)	418		
2025		1,584		475	2,499	2,974	3,089	115	547	(5)	656		
2026					2,499	2,499	3,089	590	637	2,292	3,519		
2027					2,499	2,499	3,089	590	547	(5)	1,131		
2028					2,499	2,499	3,089	590	547	(5)	1,131		
2029					2,499	2,499	3,089	590	547	(5)	1,131		
2030					2,499	2,499	3,089	590	547	(5)	1,131		
2031					2,499	2,499	3,089	590	547	(5)	1,131		
2032					2,499	2,499	3,089	590	628	(5)	1,212		
2033					2,499	2,499	3,089	590	547	(5)	1,131		
2034					2,499	2,499	3,089	590	547	(5)	1,131		
2035					2,499	2,499	3,089	590	547	(5)	1,131		
2036					2,499	2,499	3,089	590	547	(5)	1,131		
2037					2,499	2,499	3,089	590	547	(5)	1,131		
2038					2,499	2,499	3,089	590	547	(5)	1,131		
2039					2,499	2,499	3,089	590	547	(5)	1,131		
2040					2,499	2,499	3,089	590	547	(5)	1,131		
2041					2,499	2,499	3,089	590	547	(5)	1,131		
2042					2,499	2,499	3,089	590	547	(5)	1,131		
2043					2,499	2,499	3,089	590	547	(5)	1,131	32.89%	9,513

Table E.21 Consolidated Financial Analysis (Case M+R)

(USD 1000)

Year	Civil	M&E	100% Civil	100% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+R)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Riscani)	Consolidated Cash Flow (M+R)	FIRR	NPV at 7%
2004	3,960	1,760	3,960	1,760	0	5,720	0	(5,720)	0	0	0	(5,720)		
2005	3,960	1,760	3,960	1,760	0	5,720	0	(5,720)	0	0	(154)	(5,874)		
2006	1,980	880	1,980	880	0	2,860	0	(2,860)	346	2,315	100	(99)		
2007					1,471	1,471	1,791	319	271	(229)	108	469		
2008					1,588	1,588	1,939	350	297	(217)	122	552		
2009					1,714	1,714	2,097	383	325	(201)	1	508		
2010					1,844	1,844	2,266	422	356	(182)	151	747		
2011					1,988	1,988	2,450	462	389	(157)	171	865		
2012					2,142	2,142	2,647	505	514	(127)	192	1,084		
2013					2,307	2,307	2,858	551	462	(92)	215	1,136		
2014					2,480	2,480	3,083	603	503	(52)	69	1,122		
2015					2,668	2,668	3,324	656	547	(5)	266	1,463		
2016					2,668	2,668	3,324	656	547	(5)	266	1,463		
2017					2,668	2,668	3,324	656	547	(5)	266	1,463		
2018					2,668	2,668	3,324	656	547	(5)	266	1,463		
2019					2,668	2,668	3,324	656	547	(5)	266	1,463		
2020					2,668	2,668	3,324	656	547	(5)	266	1,463		
2021					2,668	2,668	3,324	656	547	(5)	266	1,463		
2022					2,668	2,668	3,324	656	547	(5)	266	1,463		
2023					2,668	2,668	3,324	656	547	(5)	266	1,463		
2024		1,584		1,584	2,668	4,252	3,324	(928)	547	(5)	266	(121)		
2025		1,584		1,584	2,668	4,252	3,324	(928)	547	(5)	266	(121)		
2026		792		792	2,668	3,460	3,324	(136)	637	2,292	356	3,149		
2027					2,668	2,668	3,324	656	547	(5)	266	1,463		
2028					2,668	2,668	3,324	656	547	(5)	266	1,463		
2029					2,668	2,668	3,324	656	547	(5)	266	1,463		
2030					2,668	2,668	3,324	656	547	(5)	266	1,463		
2031					2,668	2,668	3,324	656	547	(5)	266	1,463		
2032					2,668	2,668	3,324	656	628	(5)	266	1,544		
2033					2,668	2,668	3,324	656	547	(5)	266	1,463		
2034					2,668	2,668	3,324	656	547	(5)	266	1,463		
2035					2,668	2,668	3,324	656	547	(5)	266	1,463		
2036					2,668	2,668	3,324	656	547	(5)	266	1,463		
2037					2,668	2,668	3,324	656	547	(5)	266	1,463		
2038					2,668	2,668	3,324	656	547	(5)	266	1,463		
2039					2,668	2,668	3,324	656	547	(5)	266	1,463		
2040					2,668	2,668	3,324	656	547	(5)	266	1,463		
2041					2,668	2,668	3,324	656	547	(5)	266	1,463		
2042					2,668	2,668	3,324	656	547	(5)	266	1,463		
2043					2,668	2,668	3,324	656	547	(5)	266	1,463	7.84%	1,365

Table E.22 Consolidated Financial Analysis (Case M+R)

(USD 1000)

Year	Civil	M&E	Civil 50%	M&E 50%	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+R)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Riscani)	Consolidated Cash Flow (M+R)	FIRR	NPV at 7%
2004	3,960	1,760	1,980	880	0	2,860	0	(2,860)	0	0	0	(2,860)		
2005	3,960	1,760	1,980	880	0	2,860	0	(2,860)	0	0	(154)	(3,014)		
2006	1,980	880	990	440	0	1,430	0	(1,430)	346	2,315	100	1,331		
2007					1,471	1,471	1,791	319	271	(229)	108	469		
2008					1,588	1,588	1,939	350	297	(217)	122	552		
2009					1,714	1,714	2,097	383	325	(201)	1	508		
2010					1,844	1,844	2,266	422	356	(182)	151	747		
2011					1,988	1,988	2,450	462	389	(157)	171	865		
2012					2,142	2,142	2,647	505	514	(127)	192	1,084		
2013					2,307	2,307	2,858	551	462	(92)	215	1,136		
2014					2,480	2,480	3,083	603	503	(52)	69	1,122		
2015					2,668	2,668	3,324	656	547	(5)	266	1,463		
2016					2,668	2,668	3,324	656	547	(5)	266	1,463		
2017					2,668	2,668	3,324	656	547	(5)	266	1,463		
2018					2,668	2,668	3,324	656	547	(5)	266	1,463		
2019					2,668	2,668	3,324	656	547	(5)	266	1,463		
2020					2,668	2,668	3,324	656	547	(5)	266	1,463		
2021					2,668	2,668	3,324	656	547	(5)	266	1,463		
2022					2,668	2,668	3,324	656	547	(5)	266	1,463		
2023					2,668	2,668	3,324	656	547	(5)	266	1,463		
2024		1,584		792	2,668	3,460	3,324	(136)	547	(5)	266	671		
2025		1,584		792	2,668	3,460	3,324	(136)	547	(5)	266	671		
2026		792		396	2,668	3,064	3,324	260	637	2,292	356	3,545		
2027					2,668	2,668	3,324	656	547	(5)	266	1,463		
2028					2,668	2,668	3,324	656	547	(5)	266	1,463		
2029					2,668	2,668	3,324	656	547	(5)	266	1,463		
2030					2,668	2,668	3,324	656	547	(5)	266	1,463		
2031					2,668	2,668	3,324	656	547	(5)	266	1,463		
2032					2,668	2,668	3,324	656	628	(5)	266	1,544		
2033					2,668	2,668	3,324	656	547	(5)	266	1,463		
2034					2,668	2,668	3,324	656	547	(5)	266	1,463		
2035					2,668	2,668	3,324	656	547	(5)	266	1,463		
2036					2,668	2,668	3,324	656	547	(5)	266	1,463		
2037					2,668	2,668	3,324	656	547	(5)	266	1,463		
2038					2,668	2,668	3,324	656	547	(5)	266	1,463		
2039					2,668	2,668	3,324	656	547	(5)	266	1,463		
2040					2,668	2,668	3,324	656	547	(5)	266	1,463		
2041					2,668	2,668	3,324	656	547	(5)	266	1,463		
2042					2,668	2,668	3,324	656	547	(5)	266	1,463		
2043					2,668	2,668	3,324	656	547	(5)	266	1,463	15.83%	8,157

Table E.23 Consolidated Financial Analysis (Case M+R)

(USD 1000)

Year	Civil	M&E	Civil 30%	M&E 30%	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+R)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Riscani)	Consolidated Cash Flow (M+R)	FIRR	NPV at 7%
2004	3,960	1,760	1,188	528	0	1,716	0	(1,716)	0	0	0	(1,716)		
2005	3,960	1,760	1,188	528	0	1,716	0	(1,716)	0	0	(154)	(1,870)		
2006	1,980	880	594	264	0	858	0	(858)	346	2,315	100	1,903		
2007					1,471	1,471	1,791	319	271	(229)	108	469		
2008					1,588	1,588	1,939	350	297	(217)	122	552		
2009					1,714	1,714	2,097	383	325	(201)	1	508		
2010					1,844	1,844	2,266	422	356	(182)	151	747		
2011					1,988	1,988	2,450	462	389	(157)	171	865		
2012					2,142	2,142	2,647	505	514	(127)	192	1,084		
2013					2,307	2,307	2,858	551	462	(92)	215	1,136		
2014					2,480	2,480	3,083	603	503	(52)	69	1,122		
2015					2,668	2,668	3,324	656	547	(5)	266	1,463		
2016					2,668	2,668	3,324	656	547	(5)	266	1,463		
2017					2,668	2,668	3,324	656	547	(5)	266	1,463		
2018					2,668	2,668	3,324	656	547	(5)	266	1,463		
2019					2,668	2,668	3,324	656	547	(5)	266	1,463		
2020					2,668	2,668	3,324	656	547	(5)	266	1,463		
2021					2,668	2,668	3,324	656	547	(5)	266	1,463		
2022					2,668	2,668	3,324	656	547	(5)	266	1,463		
2023					2,668	2,668	3,324	656	547	(5)	266	1,463		
2024		1,584		475	2,668	3,143	3,324	181	547	(5)	266	988		
2025		1,584		475	2,668	3,143	3,324	181	547	(5)	266	988		
2026		792		238	2,668	2,905	3,324	419	637	2,292	356	3,704		
2027					2,668	2,668	3,324	656	547	(5)	266	1,463		
2028					2,668	2,668	3,324	656	547	(5)	266	1,463		
2029					2,668	2,668	3,324	656	547	(5)	266	1,463		
2030					2,668	2,668	3,324	656	547	(5)	266	1,463		
2031					2,668	2,668	3,324	656	547	(5)	266	1,463		
2032					2,668	2,668	3,324	656	628	(5)	266	1,544		
2033					2,668	2,668	3,324	656	547	(5)	266	1,463		
2034					2,668	2,668	3,324	656	547	(5)	266	1,463		
2035					2,668	2,668	3,324	656	547	(5)	266	1,463		
2036					2,668	2,668	3,324	656	547	(5)	266	1,463		
2037					2,668	2,668	3,324	656	547	(5)	266	1,463		
2038					2,668	2,668	3,324	656	547	(5)	266	1,463		
2039					2,668	2,668	3,324	656	547	(5)	266	1,463		
2040					2,668	2,668	3,324	656	547	(5)	266	1,463		
2041					2,668	2,668	3,324	656	547	(5)	266	1,463		
2042					2,668	2,668	3,324	656	547	(5)	266	1,463		
2043					2,668	2,668	3,324	656	547	(5)	266	1,463	25.70%	10,873

Table E.24 Consolidate Financial Analysis (Case M+F)

(USD 1000)

Year	Civil	M&E	Civil 100%	M&E 100%	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+F)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Falesti)	Net Cash Flow (Consolidated)	FIRR	NPV at 7%
2004	3,880	1,760	3,880	1,760	0	5,640	0	(5,640)	0	0	0	(5,640)		
2005	3,880	1,760	3,880	1,760	0	5,640	0	(5,640)	0	0	(118)	(5,758)		
2006	1,940	880	1,940	880	0	2,820	0	(2,820)	346	2,315	175	16		
2007					1,471	1,471	1,791	319	271	(229)	104	465		
2008					1,588	1,588	1,939	350	297	(217)	114	544		
2009					1,714	1,714	2,097	383	325	(201)	86	593		
2010					1,844	1,844	2,266	422	356	(182)	138	734		
2011					1,988	1,988	2,450	462	389	(157)	151	845		
2012					2,142	2,142	2,647	505	514	(127)	166	1,058		
2013					2,307	2,307	2,858	551	462	(92)	182	1,103		
2014					2,480	2,480	3,083	603	503	(52)	77	1,131		
2015					2,668	2,668	3,324	656	547	(5)	217	1,414		
2016					2,668	2,668	3,324	656	547	(5)	217	1,414		
2017					2,668	2,668	3,324	656	547	(5)	217	1,414		
2018					2,668	2,668	3,324	656	547	(5)	217	1,414		
2019					2,668	2,668	3,324	656	547	(5)	217	1,414		
2020					2,668	2,668	3,324	656	547	(5)	217	1,414		
2021					2,668	2,668	3,324	656	547	(5)	217	1,414		
2022					2,668	2,668	3,324	656	547	(5)	217	1,414		
2023					2,668	2,668	3,324	656	547	(5)	217	1,414		
2024		1,584		1,584	2,668	4,252	3,324	(928)	547	(5)	217	(170)		
2025		1,584		1,584	2,668	4,252	3,324	(928)	547	(5)	217	(170)		
2026		792		792	2,668	3,460	3,324	(136)	637	2,292	375	3,168		
2027					2,668	2,668	3,324	656	547	(5)	217	1,414		
2028					2,668	2,668	3,324	656	547	(5)	217	1,414		
2029					2,668	2,668	3,324	656	547	(5)	289	1,486		
2030					2,668	2,668	3,324	656	547	(5)	217	1,414		
2031					2,668	2,668	3,324	656	547	(5)	217	1,414		
2032					2,668	2,668	3,324	656	628	(5)	217	1,495		
2033					2,668	2,668	3,324	656	547	(5)	217	1,414		
2034					2,668	2,668	3,324	656	547	(5)	217	1,414		
2035					2,668	2,668	3,324	656	547	(5)	217	1,414		
2036					2,668	2,668	3,324	656	547	(5)	217	1,414		
2037					2,668	2,668	3,324	656	547	(5)	217	1,414		
2038					2,668	2,668	3,324	656	547	(5)	217	1,414		
2039					2,668	2,668	3,324	656	547	(5)	217	1,414		
2040					2,668	2,668	3,324	656	547	(5)	217	1,414		
2041					2,668	2,668	3,324	656	547	(5)	217	1,414		
2042					2,668	2,668	3,324	656	547	(5)	217	1,414		
2043					2,668	2,668	3,324	656	547	(5)	217	1,414	7.88%	1,376

Table E.25 Consolidated Financial Analysis (Case M+F)

(USD 1000)

Year	Civil	M&E	50% Civil	50% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+F)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Falesti)	Net Cash Flow (Consolidated)	FIRR	NPV at 7%
2004	3,880	1,760	1,940	880	0	2,820	0	(2,820)	0	0	0	(2,820)		
2005	3,880	1,760	1,940	880	0	2,820	0	(2,820)	0	0	(118)	(2,938)		
2006	1,940	880	970	440	0	1,410	0	(1,410)	346	2,315	175	1,426		
2007					1,471	1,471	1,791	319	271	(229)	104	465		
2008					1,588	1,588	1,939	350	297	(217)	114	544		
2009					1,714	1,714	2,097	383	325	(201)	86	593		
2010					1,844	1,844	2,266	422	356	(182)	138	734		
2011					1,988	1,988	2,450	462	389	(157)	151	845		
2012					2,142	2,142	2,647	505	514	(127)	166	1,058		
2013					2,307	2,307	2,858	551	462	(92)	182	1,103		
2014					2,480	2,480	3,083	603	503	(52)	77	1,131		
2015					2,668	2,668	3,324	656	547	(5)	217	1,414		
2016					2,668	2,668	3,324	656	547	(5)	217	1,414		
2017					2,668	2,668	3,324	656	547	(5)	217	1,414		
2018					2,668	2,668	3,324	656	547	(5)	217	1,414		
2019					2,668	2,668	3,324	656	547	(5)	217	1,414		
2020					2,668	2,668	3,324	656	547	(5)	217	1,414		
2021					2,668	2,668	3,324	656	547	(5)	217	1,414		
2022					2,668	2,668	3,324	656	547	(5)	217	1,414		
2023					2,668	2,668	3,324	656	547	(5)	217	1,414		
2024		1,584		792	2,668	3,460	3,324	(136)	547	(5)	217	622		
2025		1,584		792	2,668	3,460	3,324	(136)	547	(5)	217	622		
2026		792		396	2,668	3,064	3,324	260	637	2,292	375	3,564		
2027					2,668	2,668	3,324	656	547	(5)	217	1,414		
2028					2,668	2,668	3,324	656	547	(5)	217	1,414		
2029					2,668	2,668	3,324	656	547	(5)	289	1,486		
2030					2,668	2,668	3,324	656	547	(5)	217	1,414		
2031					2,668	2,668	3,324	656	547	(5)	217	1,414		
2032					2,668	2,668	3,324	656	628	(5)	217	1,495		
2033					2,668	2,668	3,324	656	547	(5)	217	1,414		
2034					2,668	2,668	3,324	656	547	(5)	217	1,414		
2035					2,668	2,668	3,324	656	547	(5)	217	1,414		
2036					2,668	2,668	3,324	656	547	(5)	217	1,414		
2037					2,668	2,668	3,324	656	547	(5)	217	1,414		
2038					2,668	2,668	3,324	656	547	(5)	217	1,414		
2039					2,668	2,668	3,324	656	547	(5)	217	1,414		
2040					2,668	2,668	3,324	656	547	(5)	217	1,414		
2041					2,668	2,668	3,324	656	547	(5)	217	1,414		
2042					2,668	2,668	3,324	656	547	(5)	217	1,414		
2043					2,668	2,668	3,324	656	547	(5)	217	1,414	16.10%	8,079

Table E.26 Consolidated Financial Analysis (Case M+F)

(USD 1000)

Year	Civil	M&E	30% Civil	30% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+F)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Falesti)	Net Cash Flow (Consolidated)	FIRR	NPV at 7%
2004	3,880	1,760	1,164	528	0	1,692	0	(1,692)	0	0	0	(1,692)		
2005	3,880	1,760	1,164	528	0	1,692	0	(1,692)	0	0	(118)	(1,810)		
2006	1,940	880	582	264	0	846	0	(846)	346	2,315	175	1,990		
2007					1,471	1,471	1,791	319	271	(229)	104	465		
2008					1,588	1,588	1,939	350	297	(217)	114	544		
2009					1,714	1,714	2,097	383	325	(201)	86	593		
2010					1,844	1,844	2,266	422	356	(182)	138	734		
2011					1,988	1,988	2,450	462	389	(157)	151	845		
2012					2,142	2,142	2,647	505	514	(127)	166	1,058		
2013					2,307	2,307	2,858	551	462	(92)	182	1,103		
2014					2,480	2,480	3,083	603	503	(52)	77	1,131		
2015					2,668	2,668	3,324	656	547	(5)	217	1,414		
2016					2,668	2,668	3,324	656	547	(5)	217	1,414		
2017					2,668	2,668	3,324	656	547	(5)	217	1,414		
2018					2,668	2,668	3,324	656	547	(5)	217	1,414		
2019					2,668	2,668	3,324	656	547	(5)	217	1,414		
2020					2,668	2,668	3,324	656	547	(5)	217	1,414		
2021					2,668	2,668	3,324	656	547	(5)	217	1,414		
2022					2,668	2,668	3,324	656	547	(5)	217	1,414		
2023					2,668	2,668	3,324	656	547	(5)	217	1,414		
2024		1,584		475	2,668	3,143	3,324	181	547	(5)	217	939		
2025		1,584		475	2,668	3,143	3,324	181	547	(5)	217	939		
2026		792		238	2,668	2,905	3,324	419	637	2,292	375	3,722		
2027					2,668	2,668	3,324	656	547	(5)	217	1,414		
2028					2,668	2,668	3,324	656	547	(5)	217	1,414		
2029					2,668	2,668	3,324	656	547	(5)	289	1,486		
2030					2,668	2,668	3,324	656	547	(5)	217	1,414		
2031					2,668	2,668	3,324	656	547	(5)	217	1,414		
2032					2,668	2,668	3,324	656	628	(5)	217	1,495		
2033					2,668	2,668	3,324	656	547	(5)	217	1,414		
2034					2,668	2,668	3,324	656	547	(5)	217	1,414		
2035					2,668	2,668	3,324	656	547	(5)	217	1,414		
2036					2,668	2,668	3,324	656	547	(5)	217	1,414		
2037					2,668	2,668	3,324	656	547	(5)	217	1,414		
2038					2,668	2,668	3,324	656	547	(5)	217	1,414		
2039					2,668	2,668	3,324	656	547	(5)	217	1,414		
2040					2,668	2,668	3,324	656	547	(5)	217	1,414		
2041					2,668	2,668	3,324	656	547	(5)	217	1,414		
2042					2,668	2,668	3,324	656	547	(5)	217	1,414		
2043					2,668	2,668	3,324	656	547	(5)	217	1,414	26.53%	10,760

Table E.27 Consolidated Financial Analysis (Case M+R+F)

(USD 1000)

Year	Civil	M&E	Civil 100%	M&E 100%	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+R+F)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Riscani)	Net Cash Flow (Falesti)	Net Cash Flow (Consolidated)	FIRR	NPV at 7%
2004	6,368	2,032	6,368	2,032	0	8,400	0	(8,400)	0	0	0	0	(8,400)		
2005	6,368	2,032	6,368	2,032	0	8,400	0	(8,400)	0	0	(154)	(118)	(8,672)		
2006	3,184	1,016	3,184	1,016	0	4,200	0	(4,200)	346	2,315	100	175	(1,264)		
2007					1,471	1,471	1,791	319	271	(229)	108	104	573		
2008					1,588	1,588	1,939	350	297	(217)	122	114	666		
2009					1,714	1,714	2,097	383	325	(201)	1	86	594		
2010					1,844	1,844	2,266	422	356	(182)	151	138	885		
2011					1,988	1,988	2,450	462	389	(157)	171	151	1,016		
2012					2,142	2,142	2,647	505	514	(127)	192	166	1,250		
2013					2,307	2,307	2,858	551	462	(92)	215	182	1,318		
2014					2,480	2,480	3,083	603	503	(52)	69	77	1,199		
2015					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2016					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2017					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2018					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2019					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2020					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2021					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2022					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2023					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2024		1,829		1,829	2,668	4,497	3,324	(1,173)	547	(5)	266	217	(149)		
2025		1,829		1,829	2,668	4,497	3,324	(1,173)	547	(5)	266	217	(149)		
2026		914		914	2,668	3,582	3,324	(258)	637	2,292	356	375	3,401		
2027					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2028					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2029					2,668	2,668	3,324	656	547	(5)	266	289	1,752		
2030					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2031					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2032					2,668	2,668	3,324	656	628	(5)	266	217	1,761		
2033					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2034					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2035					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2036					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2037					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2038					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2039					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2040					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2041					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2042					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2043					2,668	2,668	3,324	656	547	(5)	266	217	1,680	5.79%	(2,753)

Table E.28 Consolidated Financial Analysis (Case M+R+F)

(USD 1000)

			50%	50%											
Year	Civil	M&E	Civil	M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+R+F)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Riscani)	Net Cash Flow (Falesti)	Net Cash Flow (Consolidated)	FIRR	NPV at 7%
2004	6,368	2,032	3,184	1,016	0	4,200	0	(4,200)	0	0	0	0	(4,200)		
2005	6,368	2,032	3,184	1,016	0	4,200	0	(4,200)	0	0	(154)	(118)	(4,472)		
2006	3,184	1,016	1,592	508	0	2,100	0	(2,100)	346	2,315	100	175	836		
2007					1,471	1,471	1,791	319	271	(229)	108	104	573		
2008					1,588	1,588	1,939	350	297	(217)	122	114	666		
2009					1,714	1,714	2,097	383	325	(201)	1	86	594		
2010					1,844	1,844	2,266	422	356	(182)	151	138	885		
2011					1,988	1,988	2,450	462	389	(157)	171	151	1,016		
2012					2,142	2,142	2,647	505	514	(127)	192	166	1,250		
2013					2,307	2,307	2,858	551	462	(92)	215	182	1,318		
2014					2,480	2,480	3,083	603	503	(52)	69	77	1,199		
2015					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2016					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2017					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2018					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2019					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2020					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2021					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2022					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2023					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2024		1,829		914	2,668	3,582	3,324	(258)	547	(5)	266	217	766		
2025		1,829		914	2,668	3,582	3,324	(258)	547	(5)	266	217	766		
2026		914		457	2,668	3,125	3,324	199	637	2,292	356	375	3,858		
2027					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2028					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2029					2,668	2,668	3,324	656	547	(5)	266	289	1,752		
2030					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2031					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2032					2,668	2,668	3,324	656	628	(5)	266	217	1,761		
2033					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2034					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2035					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2036					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2037					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2038					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2039					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2040					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2041					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2042					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2043					2,668	2,668	3,324	656	547	(5)	266	217	1,680	12.31%	7,079

Table E.29 Consolidated Financial Analysis (Case M+R+F)

(USD 1000)

Year	Civil	M&E	30% Civil	30% M&E	OM&OH	Total Outflow	Revenue	Net Cash Flow (M+R+F)	Net Cash Flow (Soroca)	Net Cash Flow (Balti)	Net Cash Flow (Riscani)	Net Cash Flow (Falesti)	Net Cash Flow (Consolidated)	FIRR	NPV at 7%
2004	6,368	2,032	1,910	610	0	2,520	0	(2,520)	0	0	0	0	(2,520)		
2005	6,368	2,032	1,910	610	0	2,520	0	(2,520)	0	0	(154)	(118)	(2,792)		
2006	3,184	1,016	955	305	0	1,260	0	(1,260)	346	2,315	100	175	1,676		
2007					1,471	1,471	1,791	319	271	(229)	108	104	573		
2008					1,588	1,588	1,939	350	297	(217)	122	114	666		
2009					1,714	1,714	2,097	383	325	(201)	1	86	594		
2010					1,844	1,844	2,266	422	356	(182)	151	138	885		
2011					1,988	1,988	2,450	462	389	(157)	171	151	1,016		
2012					2,142	2,142	2,647	505	514	(127)	192	166	1,250		
2013					2,307	2,307	2,858	551	462	(92)	215	182	1,318		
2014					2,480	2,480	3,083	603	503	(52)	69	77	1,199		
2015					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2016					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2017					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2018					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2019					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2020					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2021					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2022					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2023					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2024		1,829		549	2,668	3,216	3,324	107	547	(5)	266	217	1,132		
2025		1,829		549	2,668	3,216	3,324	107	547	(5)	266	217	1,132		
2026		914		274	2,668	2,942	3,324	382	637	2,292	356	375	4,041		
2027					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2028					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2029					2,668	2,668	3,324	656	547	(5)	266	289	1,752		
2030					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2031					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2032					2,668	2,668	3,324	656	628	(5)	266	217	1,761		
2033					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2034					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2035					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2036					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2037					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2038					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2039					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2040					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2041					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2042					2,668	2,668	3,324	656	547	(5)	266	217	1,680		
2043					2,668	2,668	3,324	656	547	(5)	266	217	1,680	19.66%	11,011

Table E.30 Changes of ACSB Wholesale Water Tariff Assumed Based on the Macroeconomic Forecast in Moldova

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Nominal GDP Growth	11.31%	10.71%	10.73%	10.78%	10.24%	10.25%	10.26%	10.25%	10.24%	10.26%	10.24%	10.26%	10.25%	10.26%	10.24%
Real GDP Growth	1.20%	2.50%	3.50%	4.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Real GDP (2002=100)		100.00	103.50	108.16	113.57	119.24	125.21	131.47	138.04	144.94	152.19	159.80	167.79	176.18	184.99
Inflation	10.11%	8.21%	7.23%	6.28%	5.24%	5.25%	5.26%	5.25%	5.24%	5.26%	5.24%	5.26%	5.25%	5.26%	5.24%
Price Index (2002=1)		100.00	107.23	113.96	119.94	126.23	132.87	139.85	147.18	154.92	163.04	171.61	180.62	190.12	200.08
Population Growth	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
GDP per capita (lei)	4359	4826	5344	5920	6526	7195	7933	8746	9642	10631	11720	12922	14246	15708	17317
Exchange Rate (lei/USD)	12.80	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60	13.60

Source: World Bank, "Country Assistance Strategy", April 1999 for 2002-2008. Consultants own estimate for 2009-2015.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water Tariff (lei) (current)	0.00	1.62	1.80	2.00	2.21	2.44	2.70	2.98	3.29	3.64	4.02	4.44	4.91	5.43	6.00
Water Tariff (lei) (constant)		1.62	1.68	1.75	1.84	1.93	2.03	2.13	2.24	2.35	2.47	2.59	2.72	2.85	3.00
Water Tariff (USD) (constant)			0.1233	0.1288	0.1353	0.1420	0.1491	0.1566	0.1644	0.1727	0.1813	0.1903	0.1999	0.2099	0.2204

Table E.31 Data for Financial Analysis of Apa Canal Soroca-Balti (Case 1 of 2015 Case)

(1) 2002 Price

(USD)

	Total	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water Production	m3 / day		0	0	0	45,100	48,800	54,500	56,100	57,800	59,600	61,400	63,100	64,900	66,700
Electricity	8,130,000		0	0		717,000	776,000	867,000	892,000	919,000	948,000	976,000	1,003,000	1,032,000	1061000
Chemical for WTP	567,000		0	0		50,000	54,000	61,000	62,000	64,000	66,000	68,000	70,000	72,000	74000
Personnel and Repairing for WTP	1,780,000		0	0		157,000	170,000	190,000	195,000	201,000	207,000	214,000	220,000	226,000	232000
O/M cost for Pumping Station	1,188,000		0	0		132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132000
OM Total	13,612,842		0	0	0	1,175,703	1,216,609	1,257,515	1,298,421	1,339,328	1,381,236	1,423,145	1,465,053	1,506,962	1,548,870
GeneAdmi	458,974		0	0	0	36,818	39,468	43,582	44,663	45,883	47,173	48,464	49,684	50,974	52,264
OM&GA Total	14,071,815		0	0	0	1,212,521	1,256,077	1,301,097	1,343,085	1,385,211	1,428,410	1,471,608	1,514,737	1,557,935	1,601,134
OM&GA Total 70%						1,240,027	1,378,163	1,578,510	1,678,655	1,790,318	1,911,684	2,040,583	2,174,443	2,319,752	2,474,114
Land	8,380		140	8,240	0	0									
M&E	12,411,637		553,951	9,227,308	2,997,009	105,095									
Civil Works	12,883,363		27,049	813,692	5,823,991	5,746,905									
Investment Total	25,303,380		581,140	10,049,240	8,821,000	5,852,000									
Billing	m3 / day				0	36,080	39,040	43,600	44,880	46,240	47,680	49,120	50,480	51,920	53,360
Billing / Production					0%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

(2) Current Price

Annual Inflation Rate			7.23%	6.28%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
GDP Deflator	2002=100		107.2%	114.0%	119.9%	126.2%	132.9%	139.8%	147.2%	154.9%	163.1%	171.6%	180.6%	190.1%	200.1%
Annual Growth Rate			3.50%	4.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
GDP Real Growth	2002=100		103.5%	108.2%	113.6%	119.2%	125.2%	131.5%	138.0%	144.9%	152.2%	159.8%	167.8%	176.2%	185.0%
OM&GA Total						1,565,464	1,831,196	2,207,515	2,470,813	2,773,516	3,117,013	3,501,862	3,927,487	4,409,918	4,950,291
Investment Total			623,156	11,452,520	10,580,539	7,387,821									
Water Tariff (lei / m3)		1.62	1.80	2.00	2.21	2.44	2.70	2.98	3.29	3.64	4.02	4.44	4.91	5.43	6.00
Exchange Rate (lei / USD)						13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Revenue 100%						2,361,472	2,823,823	3,485,183	3,964,636	4,514,189	5,144,102	5,856,566	6,651,436	7,560,355	8,586,867
Revenue 90%					0	2,125,325	2,541,441	3,136,665	3,568,172	4,062,770	4,629,691	5,270,909	5,986,293	6,804,319	7,728,180
OM &GA / Revenue						74%	72%	70%	69%	68%	67%	66%	66%	65%	64%
Revenue (2002 Price) 100%					0	1,870,556	2,125,217	2,492,122	2,693,549	2,913,931	3,154,910	3,412,702	3,682,550	3,976,979	4,291,644
Revenue (2002 Price) 90%					0	1,683,500	1,912,695	2,242,910	2,424,195	2,622,538	2,839,419	3,071,432	3,314,295	3,579,281	3,862,480
OM Total (2002 Price)	20,492,080		0	0	0	1,175,703	1,216,609	1,257,515	1,298,421	1,339,328	1,381,236	1,423,145	1,465,053	1,506,962	1,548,870
GeneAdmi (2002 Price)	1,470,011		0	0	0	36,818	39,468	43,582	44,663	45,883	47,173	48,464	49,684	50,974	52,264
OM&GA (2002 Price)	21,962,091					1,212,521	1,256,077	1,301,097	1,343,085	1,385,211	1,428,410	1,471,608	1,514,737	1,557,935	1,601,134
OM Total (Current, GDP Growth)	34,301,305				0	1,769,884	2,023,996	2,311,976	2,638,136	3,007,321	3,427,459	3,902,696	4,439,975	5,047,086	5,732,775
GeneAdmi (Current, GDP Growth)	1,159,681				0	55,426	65,661	80,127	90,747	103,026	117,058	132,902	150,571	170,721	193,442
OM&GA (Current, GDP Growth)	35,460,986				0	1,825,310	2,089,657	2,392,103	2,728,883	3,110,347	3,544,517	4,035,598	4,590,546	5,217,807	5,926,218
OM&GA (2002 Price, GDP Growth)					0	1,445,854	1,572,682	1,710,502	1,853,986	2,007,744	2,173,875	2,351,599	2,541,544	2,744,727	2,961,874

Table E.32 Data for Financial Analysis of Apa Canal Soroca-Balti (Case 2 of 2015 Case)

(1) 2002 Price

(USD)

	Total	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water Production	m3 / day		0	0	0	45,100	48,800	54,500	56,100	57,800	59,600	61,400	63,100	64,900	66,700
Electricity	8,130,000		0	0		717,000	776,000	867,000	892,000	919,000	948,000	976,000	1,003,000	1,032,000	1061000
Chemical for WTP	567,000		0	0		50,000	54,000	61,000	62,000	64,000	66,000	68,000	70,000	72,000	74000
Personnel and Repairing for WTP	1,780,000		0	0		157,000	170,000	190,000	195,000	201,000	207,000	214,000	220,000	226,000	232000
O/M cost for Pumping Station	1,188,000		0	0		132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132000
OM Total	13,612,842		0	0	0	1,175,703	1,216,609	1,257,515	1,298,421	1,339,328	1,381,236	1,423,145	1,465,053	1,506,962	1,548,870
GeneAdmi	458,974		0	0	0	36,818	39,468	43,582	44,663	45,883	47,173	48,464	49,684	50,974	52,264
OM&GA Total	14,071,815		0	0	0	1,212,521	1,256,077	1,301,097	1,343,085	1,385,211	1,428,410	1,471,608	1,514,737	1,557,935	1,601,134
Land	140		140	0	0										
M&E	12,664,603		553,951	9,217,310	2,893,342										
Civil Works	618,397		27,049	274,690	316,658										
Investment Total	13,283,140		581,140	9,492,000	3,210,000	0									
Billing	m3 / day				0	36,080	39,040	43,600	44,880	46,240	47,680	49,120	50,480	51,920	53,360
Billing / Production					0%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

(2) Current Price

Annual Inflation Rate			7.23%	6.28%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
GDP Deflator	2002=100		107.2%	114.0%	119.9%	126.2%	132.9%	139.8%	147.2%	154.9%	163.1%	171.6%	180.6%	190.1%	200.1%
Annual Growth Rate			3.50%	4.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
GDP Real Growth	2002=100		103.5%	108.2%	113.6%	119.2%	125.2%	131.5%	138.0%	144.9%	152.2%	159.8%	167.8%	176.2%	185.0%
OM&GA Total						1,530,740	1,668,977	1,819,559	1,976,887	2,145,934	2,329,031	2,525,439	2,735,924	2,961,682	3,203,603
Investment Total			623,156	10,817,467	3,850,304	0									
Water Tariff (lei / m3)						2.44	2.70	2.98	3.29	3.64	4.02	4.44	4.91	5.43	6.00
Exchange Rate (lei / USD)						13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Revenue 100%						2,361,472	2,823,823	3,485,183	3,964,636	4,514,189	5,144,102	5,856,566	6,651,436	7,560,355	8,586,867
Revenue 90%					0	2,125,325	2,541,441	3,136,665	3,568,172	4,062,770	4,629,691	5,270,909	5,986,293	6,804,319	7,728,180
OM &GA / Revenue						72%	66%	58%	55%	53%	50%	48%	46%	44%	41%
Revenue (2001 Price) 100%					0	1,870,556	2,125,217	2,492,122	2,693,549	2,913,931	3,154,910	3,412,702	3,682,550	3,976,979	4,291,644
Revenue (2001 Price) 90%					0	1,683,500	1,912,695	2,242,910	2,424,195	2,622,538	2,839,419	3,071,432	3,314,295	3,579,281	3,862,480
OM Total (2002 Price)	20,492,080		0	0	0	1,175,703	1,216,609	1,257,515	1,298,421	1,339,328	1,381,236	1,423,145	1,465,053	1,506,962	1,548,870
GeneAdmi (2002 Price)	1,470,011		0	0	0	36,818	39,468	43,582	44,663	45,883	47,173	48,464	49,684	50,974	52,264
OM&GA (2002 Price)	21,962,091					1,212,521	1,256,077	1,301,097	1,343,085	1,385,211	1,428,410	1,471,608	1,514,737	1,557,935	1,601,134
OM Total (Current, GDP Growth)	34,301,305				0	1,769,884	2,023,996	2,311,976	2,638,136	3,007,321	3,427,459	3,902,696	4,439,975	5,047,086	5,732,775
GeneAdmi (Current, GDP Growth)	1,159,681				0	55,426	65,661	80,127	90,747	103,026	117,058	132,902	150,571	170,721	193,442
OM&GA (Current, GDP Growth)	35,460,986				0	1,825,310	2,089,657	2,392,103	2,728,883	3,110,347	3,544,517	4,035,598	4,590,546	5,217,807	5,926,218
OM&GA (2001 Price, GDP Growth)					0	1,445,854	1,572,682	1,710,502	1,853,986	2,007,744	2,173,875	2,351,599	2,541,544	2,744,727	2,961,874

Table E.33 Data for Financial Analysis of Apa Canal Soroca-Balti (Case 3 of 2015 Case)

(1) 2002 Price

(USD)

	Total	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water Production	m3 / day		0	0	0	45,100	46,500	47,800	49,100	50,400	51,800	53,100	54,400	55,800	57,100
Electricity	7,218,000		0	0		717,000	739,000	760,000	781,000	801,000	824,000	844,000	865,000	887,000	908000
Chemical for WTP	506,000		0	0		50,000	52,000	53,000	55,000	56,000	58,000	59,000	61,000	62,000	64000
Personnel and Repairing for WTP	1,579,000		0	0		157,000	162,000	166,000	171,000	175,000	180,000	185,000	189,000	194,000	199000
O/M cost for Pumping Station	1,188,000		0	0		132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132000
OM Total	12,039,870		0	0	0	1,056,000	1,085,000	1,111,000	1,139,000	1,164,000	1,194,000	1,220,000	1,247,000	1,275,000	1,548,870
GeneAdmi	458,974		0	0	0	36,818	39,468	43,582	44,663	45,883	47,173	48,464	49,684	50,974	52,264
OM&GA Total (original)	12,498,844		0	0	0	1,092,818	1,124,468	1,154,582	1,183,663	1,209,883	1,241,173	1,268,464	1,296,684	1,325,974	1,601,134
OM&GA Total (70% up)						1,240,027	1,319,753	1,400,640	1,488,910	1,578,583	1,680,460	1,782,904	1,893,009	2,011,333	2,136,879
Land			140	0	0	0									
M&E	12,664,603		553,951	9,217,310	2,893,342	0									
Civil works	618,397		27,049	274,690	316,658	0									
Investment Total	13,283,140		581,140	9,492,000	3,210,000	0									
Billing	m3 / day				0	36,080	37,200	38,240	39,280	40,320	41,440	42,480	43,520	44,640	45,680
Billing / Production					0%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

(2) Current Price

Annual Inflation Rate			7.23%	6.28%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
GDP Deflator	2002=100		107.2%	114.0%	119.9%	126.2%	132.9%	139.8%	147.2%	154.9%	163.1%	171.6%	180.6%	190.1%	200.1%
Annual Growth Rate			3.50%	4.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
GDP Real Growth	2002=100		103.5%	108.2%	113.6%	119.2%	125.2%	131.5%	138.0%	144.9%	152.2%	159.8%	167.8%	176.2%	185.0%
OM&GA Total 70%						1,565,464	1,753,585	1,958,767	2,191,528	2,445,502	2,740,001	3,059,656	3,419,160	3,823,603	4,275,540
Investment Total			623,156	10,817,467	3,850,304	0									
Water Tariff (lei / m3)		1.62	1.80	2.00	2.21	2.44	2.70	2.98	3.29	3.64	4.02	4.44	4.91	5.43	6.00
Exchange Rate (lei / USD)						13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Revenue 100%						2,361,472	2,690,733	3,056,729	3,469,940	3,936,248	4,470,880	5,064,880	5,734,360	6,500,274	7,350,976
Revenue 90%					0	2,125,325	2,421,660	2,751,056	3,122,946	3,542,623	4,023,792	4,558,392	5,160,924	5,850,247	6,615,878
OM &GA / Revenue						74%	72%	71%	70%	69%	68%	67%	66%	65%	65%
Revenue (2002 Price) 100%					0	1,870,556	2,025,053	2,185,751	2,357,456	2,540,867	2,742,019	2,951,376	3,174,813	3,419,344	3,673,956
Revenue (2002 Price) 90%					0	1,683,500	1,822,548	1,967,176	2,121,710	2,286,780	2,467,817	2,656,238	2,857,332	3,077,410	3,306,561
OM Total (2002 Price)	20,492,080		0	0	0	1,056,000	1,085,000	1,111,000	1,139,000	1,164,000	1,194,000	1,220,000	1,247,000	1,275,000	1,548,870
GeneAdmi (2002 Price)	1,470,011		0	0	0	36,818	39,468	43,582	44,663	45,883	47,173	48,464	49,684	50,974	52,264
OM&GA (2002 Price)	21,962,091					1,092,818	1,124,468	1,154,582	1,183,663	1,209,883	1,241,173	1,268,464	1,296,684	1,325,974	1,601,134
OM Total (Current, GDP Growth)	30,455,780				0	1,589,686	1,805,047	2,042,604	2,314,223	2,613,641	2,962,843	3,345,612	3,779,145	4,270,205	5,732,775
GeneAdmi (Current, GDP Growth)	1,159,681				0	55,426	65,661	80,127	90,747	103,026	117,058	132,902	150,571	170,721	193,442
OM&GA (Current, GDP Growth)	31,615,461				0	1,645,111	1,870,707	2,122,731	2,404,970	2,716,667	3,079,901	3,478,514	3,929,716	4,440,926	5,926,218
OM&GA (2002 Price, GDP Growth)					0	1,303,116	1,407,900	1,517,885	1,633,922	1,753,622	1,888,923	2,026,978	2,175,677	2,336,063	2,961,874

Table E.34 Data for Financial Analysis of Apa Canal Soroca-Balti (Case 1 of 2008 Case)

(1) 2002 Price

(USD)

	Total	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Water Production	m3 / day		0	0	0	45,100	48,800	54,500	54,500	54,500	54,500	54,500	54,500	54,500	54,500
Electricity	7,562,000		0	0		717,000	776,000	867,000	867,000	867,000	867,000	867,000	867,000	867,000	867,000
Chemical for WTP	531,000		0	0		50,000	54,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000
Personnel and Repairing for WTP	1,657,000		0	0		157,000	170,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000	190,000
O/M cost for Pumping Station	1,188,000		0	0		132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000	132,000
OM Total	12,188,000		0	0	0	1,056,000	1,132,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
GeneAdmi	424,945		0	0	0	36,818	39,468	43,582	43,582	43,582	43,582	43,582	43,582	43,582	43,582
OM&GA Total	12,612,945		0	0	0	1,092,818	1,171,468	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582
OM&GA Total 70%						1,240,027	1,378,163	1,578,510	1,638,032	1,700,530	1,766,153	1,835,057	1,907,406	1,983,372	2,063,137
Land	8,380		140	8,240	0	0									
M&E	12,883,363		553,951	9,227,308	2,997,009	105,095									
Civil Works	12,411,637		27,049	813,692	5,823,991	5,746,905									
Investment Total	25,303,380		581,140	10,049,240	8,821,000	5,852,000									
Billing	m3 / day				0	36,080	39,040	43,600	43,600	43,600	43,600	43,600	43,600	43,600	43,600
Billing / Production					0%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

(2) Current Price

Annual Inflation Rate			7.23%	6.28%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%
GDP Deflator	2002=100		107.2%	114.0%	119.9%	126.2%	132.9%	139.8%	147.2%	154.9%	163.1%	171.6%	180.6%	190.1%	200.1%
Annual Growth Rate			3.50%	4.50%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
GDP Real Growth	2002=100		103.5%	108.2%	113.6%	119.2%	125.2%	131.5%	138.0%	144.9%	152.2%	159.8%	167.8%	176.2%	185.0%
OM&GA Total						1,565,464	1,831,196	2,207,515	2,411,020	2,634,419	2,879,724	3,149,156	3,445,164	3,770,450	4,127,995
Investment Total			623,156	11,452,520	10,580,539	7,387,821									
Water Tariff (lei / m3)		1.62	1.80	2.00	2.21	2.44	2.70	2.98	3.29	3.64	4.02	4.44	4.91	5.43	6.00
Exchange Rate (lei / USD)						13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
Revenue 100%						2,361,472	2,823,823	3,485,183	3,851,563	4,256,458	4,703,918	5,198,418	5,744,901	6,348,834	7,016,255
OM &GA / Revenue						66%	65%	63%	63%	62%	61%	61%	60%	59%	59%
Revenue (2002 Price) 100%					0	1,870,556	2,125,217	2,492,122	2,616,728	2,747,564	2,884,943	3,029,190	3,180,649	3,339,682	3,506,666

OM Total (2002 Price)	20,492,080		0	0	0	1,056,000	1,132,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
GeneAdmi (2002 Price)	1,470,011		0	0	0	36,818	39,468	43,582	43,582	43,582	43,582	43,582	43,582	43,582	43,582
OM&GA (2002 Price)	21,962,091					1,092,818	1,171,468	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582	1,293,582