Town	No. & Facility:		Year of Construction	Financed by:
Aileu	05 - Distribution	on Main		
Existing Condit			Photograph:	
Facility: Water dis				
Diameter: GSP 1.	1/2-inch			
Length: 2.0 km				
	stribution to the wate			
at the Accessories:	gov't housing esta	ie.		
Accessories.				
				(Date:)
Evaluation:				
The existing	distribution main is	s insufficient.		
D-11-11((1	<u> </u>			
Rehabilitation F				
1) Basic Considera		Jiataihtia.a. aa	ain that arrealing the harr	nin a natata
			ain that supplies the hous	=
		-	.2m3/day = 120m3/day = 0.7m/aaa	1.4L/Sec
	0m/1500m = 20 per ameter: 2inch	iiii, velocity	= 0.711/560	
2) Civil Work: non				
z) Givii Work. Hori	C			
3) Piping work:				
, , ,	of 50mm x 1.5 km	with necessa	ary appurtenances	
, , ,			, , , ,	
4) Mechanical wor	rk: none			
5) Electrical work:	none			
6) Miocellere e e e	200			
6) Miscellaneous:	none			
Estimated cost		Construct	ion schedule:	Priority:
		201.50 400		B-1
05\$1	6,500			B-1

The Study on Urgent Improvement Project for the Water Supply System in East Timor No. & Facility: Town Year of Construction | Financed by: Aileu 06 - Sloi Kraik Intake **Existing Condition:** Photograph: Facility: Spring intake Source of Water: Sloi Kraik spring Supplies to: Sloi Kraik reservoir Function: raw water intake Major facilities: Intake weir Raw water transmission main GSP 3-inch Elevation (amsl): (Date: Evaluation: During dry season the flow substantially drops to almost nil. During rainy season the turbidity is high. Rehabilitation Plan: 1) Basic Consideration This source will serve a community based water supply system and will be disconnected by valve from the town's water supply. To improve the water quantity and quality, rehabilitation of the intake facilities such as installation of perforated pipes under a graded filter bed should be carried out. 2) Civil Work: Excavation: 6.0m length x 2.0m width x 2.0m depth upstream of the intake weir. Installation of perforated pipes: perforated pipe 150mm diameter GSP (20 mm dia x 20 holes) Backfilling: gravel (80 cm thick), sand (1.2m thick) 3) Piping work: Installation of water collector with the following specification Diameter and length: 150mm x 6m Depth: 1.8m below the riverbed 4) Mechanical work: none 5) Electrical work: none

Estimated cost:	Construction schedule:	Priority:
US\$4,917		B-2

6) Miscellaneous: none

The Study on Urgent Improvement Project for the Water Supply System in East Timor No. & Facility: Town Year of Construction | Financed by: Aileu 07 - Hularema Intake Existing Condition: Photograph: Facility: Spring intake Source of Water: Hularema spring Supplies to: Hularema reservoir Function: raw water intake Major facilities: Intake weir Raw water transmission main GSP 2-inch Elevation (amsl): (Date: Evaluation: During dry season the flow substantially drops to almost nil. During rainy season the turbidity is high. Rehabilitation Plan: 1) Basic Consideration This source will serve a community based water supply system and will be disconnected by valve from the town's water supply. To improve the water quantity and quality, rehabilitation of the intake facilities such as installation of perforated pipes under a graded filter bed should be carried out. 2) Civil Work: Excavation: 6.0m length x 2.0m width x 2.0m depth upstream of the intake weir. Installation of perforated pipes: perforate pipe 150mm (20 mm dia x 20 holes)0 Backfilling: gravel (80 cm thick), sand (1.2m thick) 3) Piping work: Installation of water collector with the following specification Diameter and length: GSP 6-inch x 6m Depth: 1.8m below the riverbed 4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	Construction schedule:	Priority:
US\$4,848		B-2

Town	No. & Facility:		Year of Construction	Financed by:
Aileu	08 - Marele Re	eservoir 2		
Existing Condit			Photograph:	
Facility: Sevice res				
Structure: Reinfore	ced concrete			
Shape: Rectangul	ar			
Dimension:				W TO SALE
Capacity: 30m ³				
Function: Storage				
Source of Water:	Sloi Kraik River			
Elevation (amsl):				HIN A HIS WALL
Accessories:				
				(Date:
Evaluation:			I	
In use				
Rehabilitation F				
1) Basic Calculation	on			
2) Civil Work: Installation o	of water level gauge	e		
	of 75mm flow meter tions of 75mm diam		valve ength 0f 30m between No	o.1 and No.2 reservoirs
4) Mechanical wor	k: none			
5) Electrical work:	none			
6) Miscellaneous:	none			
Estimated cost	:	Construct	ion schedule:	Priority:
US\$3	3,991			B-2

Town	No & Facility:		Year of Construction	Final	nced by:
Aileu	09 - Hularema	Reservoir	rear or construction		no c u by.
Existing Condition		1709011011	Photograph:	<u> </u>	
Facility: Service re			i notograpii.		
Structure: Reinfor					
Shape: Rectangul					
Dimension: 5.2m					美
Capacity: 120m ³	X 0.2111 X 3.0111			5.74	
Function: Storage					10.4
Source of Water:					
Elevation (amsl):	nularema Kivei				
Accessories:					
Accessories.			No. of the last of		
					本外。主、冰 峰。
				- N	
Cualizatia				(Date	:)
Evaluation:	96				
In use but w	rith some leaks at th	ne base			
	<u> </u>				
Rehabilitation I					
1) Basic Consider	ation				
2) Civil Work:					
Installation of	of water level gauge	9			
Piping work:					
Leak repair	work and installation	n of 50mm f	low meter and control val	ve.	
4) Mechanical wor	rk: none				
,					
5) Electrical work:	none				
6) Miscellaneous:	none				
o, imoodianoodo.					
Estimated cost		Construct	ion schedule:		Priority:
		30.10ti dol			-
08\$	3,057				B-2

Town	No. & Facility:	Year of Construction	Financed by:
Maubisse	01 - Erulu Spring	7.	Portuguese
Existing Con		Photograph:	
•	ion chamber, storage reservoir		
Dimension:	. 503	TOWN BY TO THE	NAME OF THE PARTY
Storage capacit			
Function: Intake	<u> </u>		阿斯 人一型的
Source or vvate Elevation (amsl	er: Erulu Spring		
Elevation (amsi Accessories:)-	THE REAL PROPERTY OF THE PARTY	
accessories.			
		STATE OF THE PARTY	The state of the s
		Markey & Market	
			(Date:
The rese	rvoir, which is a few hundred me	· ·	
	rvoir, which is a few hundred me I section of the transmission ma	· ·	
The rese		· ·	
The reser	I section of the transmission ma	· ·	
The reser damaged Rehabilitation	I section of the transmission ma	· ·	
The reser damaged Rehabilitation 1) Basic Calcula	I section of the transmission ma n Plan: ation:	in.	is not in use due to
The reser damaged Rehabilitation 1) Basic Calcula Storage r	I section of the transmission ma In Plan: ation: requirement = 356 m3/day * 33%	in. % * 8/24 = 40 m ³ (Assumed	is not in use due to
The reser damaged Rehabilitation 1) Basic Calcula Storage r Capacity	n Plan: ation: equirement = 356 m3/day * 33% of the existing reservoir = 56 m	6 * 8/24 = 40 m ³ (Assumed	is not in use due to
The reser damaged Rehabilitation 1) Basic Calcula Storage r Capacity	I section of the transmission ma In Plan: ation: requirement = 356 m3/day * 33%	6 * 8/24 = 40 m ³ (Assumed	is not in use due to
The reser damaged Rehabilitation 1) Basic Calcula Storage r Capacity Therefore	n Plan: ation: equirement = 356 m3/day * 33% of the existing reservoir = 56 m	6 * 8/24 = 40 m ³ (Assumed	is not in use due to
The reservation damaged Rehabilitation 1) Basic Calcular Storage r Capacity Therefore 2) Civil Work:	n Plan: ation: equirement = 356 m3/day * 33% of the existing reservoir = 56 m	6 * 8/24 = 40 m ³ (Assumed	is not in use due to

3) Piping work:

Installation of flow meter, control valves

Repair/replacement of the damaged section of the transmission main (75mm x 30 m) Installation of 1public tap

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous:

Installation of chlorine-dosing device

Estimated cost:	Construction schedule:	Priority:	_
US\$7,891		C-2	

<i>i</i> own	NO. & Facility:		Year of Construction	Financed by:
Maubisse	02 - Transmiss			
	(Bucana - Po	usada)		
Existing Condit			Photograph:	
Facility: Transmis				
Diameter & length	: GSP 3-inch			
Length: 1.7 km				
Function: Transmi				
the Po	ousada reservoir			
				(Date:)
Evaluation:				
· ·			along the pipeline.	
	nections were insta	_		
Water does	not reach the reser	voir during p	eak nour.	
Rehabilitation I	Dlan:			
1) Basic Consider				
*		offoctive if re	einstallation of a new tran	emission main is carried
	ce the existing.	enective ii re	emstaliation of a new train	Sillission main is camed
out to replac	be the existing.			
2) Civil Work: non	e			
2) 01111 11011. 11011	·			
3) Piping work:				
	of transmission mai	n 75mm x 1.	7 km including the neces	sary appurtenances.
motanation (or transcribering		Than morading are neede	cary apparteriariosor
4) Mechanical wor	k: none			
,,				
5) Electrical work:	none			
,				
6) Miscellaneous:	none			
,				
Estimated cost		Construct	ion schedule:	Priority:
US\$3	0,600			C-1
2240	,			

No. & Facility: Year of Construction | Financed by: Town Maubisse 03 - Pousada Reservoir Portuguese **Existing Condition:** Photograph: Structure: Reinforced Concrete Shape: Rectangular Dimension: Capacity: 23m3 Function: Storage Source of Water: Bucana Spring Ground level: Accessories: (Date: Evaluation: In operation but limited supply is coming due to service connections made on the transmission main. The capacity of the existing reservoir will be sufficient to store water supplied from the source estimated @ 0.7 L/s. Rehabilitation Plan: 1) Basic Calculation Storage requirement = $0.70 \text{ L/s} * 86,400 * 8/24 = 20 \text{ m}^3$ Capacity of the existing reservoir = 23 m³ Therefore, reservoir expansion is not required. 2) Civil Work: Installation of water level gauge. 3) Piping work: Installation of flow meter and control valve. 4) Mechanical work: none 5) Electrical work: none 6) Miscellaneous: Installation of chlorine-dosing facilities.

Construction schedule:

Estimated cost:

US\$6,451

Priority:

C-2

Town	No. & Facility:		Year of Construction	Financed by:
	04 - Distribution	Main		
Maubisse	(Pousada - town	center)		
Existing Condi	`	,	Photograph:	
			3 17	
				(Date:
Evaluation:				(Date.
	a dietribution main will	ha incuffic	cient for the expected incr	rease in water demand
THE EXISTING	g distribution main wiii	De Ilisuille	dentior the expected inci	ease iii watei demand.
Rehabilitation I	Dlan:			
1) Basic Consider				
*		necessar	ry to augment the existing	nineline
Additional d	iistribution main wiii be	riecessai	y to augment the existing) pipeline.
2) Civil Work: non	nΔ			
2) CIVII WOIK. HOI	ic			
3) Piping work:				
, , ,	of 75mm v 0.70 km or	od E0mm v	OF km including the new	account appurtance
mstallation	OI 75IIIIII X 0.70 KIII ai	ia somini i	c 0.5 km including the ned	essary appurteriances.
1) Machaniaela	ula nono			
4) Mechanical wo	rk: none			
E) Flooting I	nono			
5) Electrical work:	none			
C) Min II -				
6) Miscellaneous:	none			
Falimente	, I A		ion only state	D.:///
Estimated cost		onstruct	ion schedule:	Priority:
US\$1	18,100			C-1

No. & Facility: Town Year of Construction | Financed by: Maubisse 05 - Raikuak Ulun Spring **Existing Condition:** Photograph: Facility: Spring Intake Dimension: Function: Intake for raw water Source of Water: Raikuak Ulun Spring Ground level (amsl): Accessories: Weir: made of earth Transmission main: GSP 1-inch (Date: Evaluation: The intake facility is not properly designed and constructed It requires rehabilitation including the construction of the concrete weir, collection chamber Rehabilitation Plan: 1) Basic Consideration: Rehabilitation of the existing facilities including the construction of the concrete weir, collection chamber 2) Civil Work: Weir: 5m width x 2.5 m height, made of concrete Collection chamber: 2m x 3m x 1.5m height Construction of the security fence. 3) Piping work: Installation of 75mm x 15 m inlet pipe including 150mm perforated pipe for water collection. 4) Mechanical work: none 5) Electrical work: none 6) Miscellaneous: none Construction schedule: Estimated cost: **Priority:**

C-1

US\$9,295

Town	No. & Facility:		Year of Construction	rinanced by:
Maubisse	06 - Transm Main (Raikuak Ulu			
Existing Condit	,	- [Photograph:	<u> </u>
Facility: Transmiss	sion main			
Diameter & Length	n:			
GSP 3-inch	= 1.2 km			
GSP 2-inch	= 100m			
Function: Transmi	t spring water to th	e Leputo		
reserv	oir/			
Accessories:				
				(D)
Francisco.				(Date:
Evaluation: In use				
	erly designed and	constructed	changing from 3-inch to 2	2-inch along the line
ιι ιο ποι ριορ	deriy designed and	constructed	changing nom 5-men to 2	-inch along the line.
Rehabilitation F	Plan:			
1) Basic Considera	ation:			
*	ipeline should have	uniform dia	meter at 75mm.	
	•			
2) Civil Work: non	e			
3) Piping work:				
	of 75mm x 100m to	replace the	existing including air valv	es, gate valves and
blow-off.				
4) 14 - 1 - 1 - 1 - 1				
4) Mechanical wor	K: none			
5) Electrical work:	none			
o, Licotileai work.	HOLIC			
6) Miscellaneous:	none			
, : : : : : : : : : : : : : : : : : : :	-			
Estimated cost.		Construct	ion schedule:	Priority:
US\$2	2,553			C-1
ΟΟΨ	-,000			Ű,

Town No. & Facility: Year of Construction Financed by: Maubisse 07 - Leputo Reservoir **Existing Condition:** Photograph: Facility: Service reservoir Structure: Reinforced Concrete Shape: Rectangular Dimension: Capacity: 20m3 Function: Storage Source of Water: Raikuak Ulun Ground level (amsl): Accessories: (Date: Evaluation: Currently in use but requires rehabilitation and expansion. The raikuak ulun water source supplies about 1.7 L/s or 146.9 m³/day to this reservoir. Rehabilitation Plan: 1) Basic Calculation: Required storage capacity = 146.9 m3/day * 8/24 = 49 m³ Capacity of the existing reservoir = 20 m³ Storage deficit = $49 - 20 = 29 \text{ m}^3$ 2) Civil Work: Construction of a new reservoir with a capacity of 30 m³ including the necessary appurtenances Construction of the security fence. 3) Piping work: Installation of flow meter and control valves for the existing reservoir Pipe interconnection. 4) Mechanical work: none 5) Electrical work: none

6) Miscellaneous:

Installation of chlorine-dosing device

Estimated cost:	Construction schedule:	Priority:
US\$15,651		C-2

Town	No. & Facility:		Year of Constru	ction	Financed by:
Maubisse	08 - Distributio (Erulu Reservoir - t				
Existing Condit Facility: Distribution Diameter & length. GSP 4-inch GSP 3-inch Function: Distribution Accessories:	on main : i = 1.2 km	e town center	Photograph:		
					(Date:)
Evaluation:					1_ 4.0.
	nost had lapsed thei	r economic	life resulting to nu	merous	leaks.
Rehabilitation F	Plan:				
1) Basic Considera Require repl	ation: lacement and instal	lation of new	<i>ı</i> pipeline.		
2) Civil Work: non	e				
blow-off). Installation o 100m	of new pipelines incl m x 1.2 km n x 0.5 km				air valves, gate valves,
5) Electrical work:	none				
6) Miscellaneous:	none				
Estimated cost.	: 1	Construct	ion schedule:		Priority:
	9,000				C-1

Town No. & Facility: Year of Construction | Financed by: 01 - Mota Boot Intake Gleno **Existing Condition:** Photograph: Facility: Intake pipe and collection chamber appeared to be seriously damaged. Only traces are left. Dimension: Capacity: Function: Raw water collection Source of Water: Mota Boot River Ground level (amsl): Accessories: (Date: Evaluation: The intake facilities including transmission main are seriously damaged resulting to the nonoperation of this facility and substantial decrease in water supply. Rehabilitation Plan: 1) Basic Consideration: Require construction of new intake facilities including transmission main. The facilities must be constructed in safe place with adequate protection. 2) Civil Work: Construction of collection chamber: 5.0 m x 3.0 m x 1.5 m Construction of concrete weir: 7.0 m width x 1.5 m height (approximate) Construction of security fence 3) Piping work: Installation of new intake pipe 150mm x 10 m with perforation. Installation of new transmission main 150mm x 100 m. 4) Mechanical work: none 5) Electrical work: none 6) Miscellaneous: none Estimated cost: Construction schedule: **Priority:** US\$23.692 B-1

Town No. & Facility: Year of Construction | Financed by: Gleno 02 - Riheu Water Treatment Plant **Existing Condition:** Photograph: Process: Slow sand filtration Dimension: 10m x 18m - 2 basins Filtration rate: 4m/day Capacity: 15 L/s Function: Water Treatment Source of Water: Mota Boot and Mota Kiik Ground level (amsl): Accessories: (Date: Evaluation: In constant breakdown due to lack of resources and absence of regular maintenance. Limited supply for treatment due to breakdown of main source at Mota Boot. Capacity is enough to supply the water demand. Rehabilitation Plan: 1) Basic Consideration: No expansion is needed. Requires routine maintenance and skilled operators Requires adequate protection of water production and chlorination prior to distribution. 2) Civil Work: Construction of concrete apron for washing the filter media (sand) Apron: 10m width x 15m length x 30cm height Construction of security fence to include the WTP site and reservoir facilities. Construction of staff house. 3) Piping work: Installation of flow meter and control valve (150mm x 2 sets) 4) Mechanical work: none 5) Electrical work: none 6) Miscellaneous: none Construction schedule: Estimated cost: **Priority:**

B-2

US\$24,456

The Study on Urgent Improvement Project for the Water Supply System in East Timor Town No. & Facility: Year of Construction | Financed by: Gleno 03 - Hatsnigulau Reservoirs 1&2 **Existing Condition:** Photograph: Facility: Service reservoir Structure: Reinforced Concrete Shape: Rectangular Dimension: 5m x 6m x 3m height, 5m x 7m x 3m height Hatsnigulau 1: 6.5 m x 5.0 m x 3.0 m Hatsnigulau 2: 7.0 m x 5.0 m x 3.0 m Total Capacity: 200m3 Function: Treated water storage Source of Water: WTP Ground level (amsl): Accessories: Ventilation (Date: Evaluation: In use with traces of repair works. Require expansion to meet the required storage. Rehabilitation Plan: 1) Basic Calculation Storage requirement = Water demand x 8 hours storage per day where: water demand = $1,409 \text{ m}^3/\text{day}$ Storage requirement = $1,409 * 8/24 = 470 \text{ m}^3$ Storage deficit = $470 - 200 = 270 \text{ m}^3$ 2) Civil Work: Construction of new reservoir with capacity of 300 m³ including necessary appurtenances Installation of control valves. 3) Piping work: Pipe interconnection with the existing 150mm x 50 m. 4) Mechanical work: none 5) Electrical work: none 6) Miscellaneous: Installation of chlorine dosage facilities

Construction schedule:

Priority:

B-2

Estimated cost:

US\$38,304

Town	No. & Facility:		Year of Construction	Financed by:
Gleno	04 - Distributio	on Main	Dhatawanh	
Existing Condition: Facility: Distribution Main			Photograph:	
Diameter: GSP 4-i				
GSP 3-inch				
	-	arvice area		
Function: To distribute water to the service area such as town center, district offices,				
Perumanas Baru and neighboring areas.				
Accessories:				
				(Date:
Evaluation:				
· ·	e existing distribution		· ·	
		sufficient for t	he future service area ex	pansion and increase in
water dema	nd.			
Rehabilitation I	Dlane			
1) Basic Consider		ition ninos w	ill be required	
Additionalii	stallation of distribu	ation pipes w	iii be required.	
2) Civil Work: non	е			
,				
3) Piping work:				
Pipe laying	of 150mm x 1.5 km	and 100mm	x 1.0 km including neces	ssary appurtenances
4) Mechanical wor	rk: none			
E) Floatrical world	200			
5) Electrical work:	none			
6) Miscellaneous:	none			
-,				
Estimated cost	:	Construct	ion schedule:	Priority:
US\$8	3,500			B-1
+ -	-			1

No. & Facility: Town Year of Construction | Financed by: Ermera 01 - Ersoi and Lubulala Intake Existing Condition: Photograph: Facility: Intake structures Function: Collection of spring water Sources: Ersoi and Lubulala springs Observed flow of sources: Elevation (amsl): Accessories: (Date: Evaluation: The flow from these water sources normally drops substantially during dry season. The existing intake structures are vulnerable to damage and require rehabilitation. Rehabilitation Plan: 1) Basic Consideration: As immediate remedial measures, rehabilitation of the existing intake structures will be required. 2) Civil Work: Construction of new intake facilities for Ersoi and Lubulala with the following specifications: 2 sets of Collection chamber: 1.5m x 2m x 2m Construction of security fence. 3) Piping work: Repair of 50mm x 50 m transmission main Installation of 2 sets intake pipes 50mm x 10 m 4) Mechanical work: none 5) Electrical work: none 6) Miscellaneous: none Construction schedule: Estimated cost: **Priority:**

C-1

US\$9,200

rown	NO. & Facility:	-1 NA - 4 -	Year of Construction	Filialiced by:
Ermera	02 - Propose			
	Bura River	ıntake	Dia da arres este	
Existing Condition:			Photograph:	
Evaluation:				
	water sources is ins	ufficient to su	only the current and future	water demand in Ermera.
	ary to develop addit			water demand in Emiera.
	•		al to supply the water nee	eds of Ermera
THO MOLE D	214 THYO! 1140 4409	aato potoritio	a to oupply the water her	ao or Ermorar
Rehabilitation F	Plan:			
1) Basic Considera	ation:			
,		a source re	quires the construction o	f new intake facilities,
	e installation of trar			,
2) Civil Work:				
Construction	n of new intake faci	lities for Mot	a Bura with the following	specifications:
Intake	weir: 7m width x 1	0m length e	quipped with 6-inch perfo	rated pipe and drain
Grit cl	hamber: 1.5m x 2m	n x 2m		
Construction	n of security fence.			
3) Piping work:				
Installation of	of 100mm x 30 m a	nd 150mm x	6m perforated pipe	
Installation of	of 100mm butterfly	valves and g	ate valves	
4) Mechanical wor	k: none			
E) E(
5) Electrical work:	none			
C) Miorelles				
6) Miscellaneous:	none			
Estimated cost		Construct	ion schedule:	Drioritus
		CONSTRUCT	ion schedule:	Priority:
US\$1	9,826			C-1

<i>i</i> own	No. & Facility:		Year of Construction	Financed by:			
Ermera	03 - Propo Transmissio						
Existing Cond		II IVIAIII	Photograph:				
Existing Condi	ition.		notograpii.				
Evaluation:							
Dahahilitatian	Diam						
Rehabilitation 1) Basic Conside							
· ·		ll be used to	transmit raw water from t	he proposed Mota Bura			
	e proposed water tr			no proposod mota Bara			
		·					
2) Civil Work: no	ne						
3) Piping work:							
	Installation of 100mm x 6 km transmission main including necessary appurtenances.						
4) Mechanical work: none							
5) Electrical work	: none						
C) Minnellerer							
6) Miscellaneous	. none						
Estimated cos	t:	Construct	ion schedule:	Priority:			
	150,000			C-1			
υ υ υ	,			<u> </u>			