



Technical Assistance Consultant's Report

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Mongolia: Darkhan Wastewater Management Project

Prepared by the Consultant Team comprised of Dr. James Arthur, Mr. Chuluun Chinzorig, Mr. Davaasuren Chuluunbat, Mr. Nelson Jose, Ms. Dorjnyamjav Purevsuren, Mr. Chimedkhorol Tseren, and Ms. Rachel Wildblood

For the Ministry of Construction and Urban Development, Darkhan-uul *aimag* government, and Darkhan Us Suvag

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Asian Development Bank

Wastewater Management for Darkhan – Project Preparation

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APPENDIX T: ECONOMIC ANALYSIS OF PROJECT

1 PROJECT COST ASSUMPTIONS

1.1 Investment Cost

1. The project cost components are prepared based on technical design concepts that considered both existing and future demands in Darkhan Uul. Four technical options that combine new and existing technologies are being considered for the project. Cost estimates have been prepared for each based on available market price information, updated to suit local conditions. The cost estimation for the proposed project components follows the calculation of the dynamic prime cost as applied in ODA projects. The project cost components are discussed below.
2. Civil works. Includes the costs of the construction of fixed and temporary works, auxiliary works, temporary buildings on site for living and construction management. Construction cost is based on bill of quantities for conceptual design, other estimated quantities and appropriate construction unit prices.
3. Materials and equipment. Includes the costs of planned equipment and materials, including transportation cost from ports of production to the site, storage costs, and insurance fees. Equipment costs are based on quantities, types and market prices at the time of project cost preparation (Q3 2013).
4. Institutional reform and capacity building. Formal and on-the-job training to improve general and financial management, including procurement capacity development at the levels of aimag and PUSO, and capacity upgrade in MCUD, and appurtenant costs. Training and seminar costs include costs for consultants, participants and all incidentals.
5. Project management support. Includes organization and project management costs, calculated according to issued cost norms for project management and consulting services of construction projects in Mongolia.
6. Start-up and adjustment works. Working capital required to initialize project operation. Funds are provided for the administration and maintenance of the start-up phase. A set of tools and materials have been included in the estimates.
7. Taxes and duties. Includes VAT and custom duties. VAT is calculated on current rate at 10% based on Mongolian VAT Law. Duties on imported materials and equipment is calculated at 5% per Mongolian law for customs and duties. All project taxes will form part of and paid by GOM contribution to project financing (Refer to project financing and investment plan).
8. Physical contingencies: Covers physical adjustments for unforeseeable works during project implementation. Physical contingencies are assumed at 5% for foreign cost components and 15% for local cost components.
9. Price contingencies. Covers allowance for price inflation during project implementation. Local inflation rates applied in the evaluation are based on ADB published rates (Staff estimates): 2012, 15%, 2013, 9.5%, 2014, 10%, and 2015 onward, 8%. Foreign inflation conforms to the ADB and World Bank projected indexes (October 2013): 2012 at 2.7%, 2013, -1.6%, 2014, 2.3%, 2015, 1%, and 2016 onward, 1.4%. Foreign exchange rate is \$1.00:MNT 1,690 (as of end October 2013). The base price used is at MNT 1,520 (as of August 2013), adjusted to current rate.

10. Financial charge during implementation (FCDI). This refers to interest during construction (IDC) and commitment charge, when required by specific loan terms¹
11. Other costs. Includes reinvestments for electro-mechanical equipment to be replaced during the evaluation period 2014-30; and the residual value of the investment components still to be used beyond the period have been incorporated in the financial and economic projections. Replacements arising during operational period will be treated as capital expenditures to be financed by Us Suvag using own resources and thus do not form part of the project investment cost estimates.

1.2 Operating and Maintenance Costs

- 1 Personnel salaries. Estimated based on number of staff complement to operate the additions to the existing system and average salary per staff. It is assumed that the staff requirement grows on average based on the number of water and wastewater connections. There will be annual real increases in salaries at between 2% and 5%. Required positions include plant manager, plant operations manager, electrical and controls engineer, production equipment engineer, lab research engineer, lab assistant, operators, electricians, and mechanics. The assumptions are similar for all options.
- 2 Power. Based on wastewater flow and load, and sludge production for the type of processes. Maximum daily power consumption at sewage treatment plants is at 5,050 kilowatts. Medium range annual power consumption is at 1,843,250 kilowatts. Cost of one (1) kilowatt in 2014 is estimated at \$0.067. It is assumed unit electricity cost will have a real increase of 2% p.a. Assumptions are the same for all options.
- 3 Chemicals. Treatment requires 29 tons of coagulant for removing residual sulphate of purified water at a cost of \$1,356 (MNT 2.29 million) per ton. Treatment also requires 1.46 tons of flocculant for sludge mechanical dehydration at \$10,172 (MNT 17.19 million) per ton. Assumptions are the same for all options.
- 4 Heating services. Unit heating cost for plant and equipment, as given in **Table 1**.

Table 1. Unit Heating Cost

Modified BR/AS process (3-sludge sistem)					Modification and rehabilitation of existing AS WWT				
A. Heating					A. Heating				
Plant and Building	Plant size, m ³	Rated thermal load of plant, kwh	Amount of heat per year(7-mo.), mw	Unit price, USD	Plant and Building	Plant size, m ³	Rated thermal load of plant, kwh	Amount of heat per year(7-mo.), mw	Unit price, USD
Administration and factory	3,024	110	554.40	16.00	Administration and factory	2,664	120	605	16.00
Main pumping station	1,017	34	171.36	16.00	Main pumping station	1,017	34	171	16.00
Mechanical dewatering	576	22	110.88	16.00	Blowers	1,728	90	454	16.00
					Mechanical dewatering	1,536	65	328	16.00
B. Drinking Water					B. Drinking Water				
	Plant size, m ³	Annual water consumption, m ³	Unit price, USD			Plant size, m ³	Annual water consumption, m ³	Unit price, USD	
Administration and factory	2,664	2,000	0.45		Administration and factory	2664	2000	0.45	
Main pumping station	1,017	115	0.45		Main pumping station	1017	115	0.45	
Mechanical dewatering	225	300	0.45		Blowers	225	300	0.45	
					Mechanical dewatering	1536	200	0.45	

Note: The unit cost includes the cost of heat, the cost of repairs and testing of heating system and instrumentation.

Source: TA Consultant.

- 5 Laboratory cost. Laboratory cost is similar for all options with monitoring cost before consolidating wastewater from industries at \$0.006 million (MNT 10.14 million) per annum, and at \$0.004 million (MNT 6.8 million) p.a. after interaction with State control. Costs of chemicals and substances for use in laboratory work and other activities are given in **Table 2**.

¹ These costs are calculated according ADB Technical Note on Preparation and Presentation of Cost estimates for Projects. Following the main LA 2301 terms, where Asian Development Fund (ADF) was applied, commitment charge is waived in the project cost estimation.

Table 2. Laboratory Costs

Cost items	Unit	Annual chemical consumption	Price, USD	Annual Cost, mill.USD
Ethyl alcohol (ethanol)	L	80	17	0.001
Farmalin	kg	260	1	0.000
Nickel sulphate	kg	15	200	0.003
Novocaine	L	12	34	0.000
Tizercin (levomepromazin)	L	5	285	0.001
Distilled water	L	80	0	0.000
Sublimated twice jodit	L	10	70	0.001
Potassium Jodit	L	10	70	0.001
Sodium acetate	L	10	95	0.001
Dyes	unit	100	7	0.001
Glycerin	kg	40	4	0.000
Crystallical iodine	kg	40	170	0.007
Orange hydrochloride	kg	40	34	0.001
Nitric acid silver	kg	2	1,050	0.002
Costs of monitoring before it consolidates wastewater from industrial companies				0.006
Cost of interaction with State water quality control				0.004

Source: TA Consultant.

- 6 Other costs. Include cost of repairs, removal of dehydrated sludge removal, transport, etc., estimated at \$0.045 million (MNT 76.05 million) annually. Other costs are common to all options.
- 7 Depreciation expense. Calculated based on existing assets and additions through the project and renewals. Plant and buildings will have economic life of 30 years, machinery and equipment, 25 years, vehicles, 7 years.
- 8 Financing cost. The cost of borrowing on invested capital will follow the assumed ADB loan financing terms, to be discussed in the section on project financing.
- 9 Business income tax. Based on corporate income tax law. Applicable rate is 10% for income less than or equal to MNT 3 billion or \$1.78 million, 25% beyond MNT 3 billion.
- 10 Price inflation. Annual inflationary effects will be added on to the O&M cost estimates when calculating for required, appropriate tariffs.

2 Project Demand

- 11 The demand projections follow the demand analysis² given in **Chapter 3 of the Main Final Report** for water and wastewater flows. The percentage of water supplied by Us Suvag JSC and consumed in households and entities in core population areas, and which enters the sewerage system is at 80%, and assumed to remain at this level in the future. Additional sewered water will come from 75% of hot water provided to households during winter at 90 l/c/d, and from industrial and other connections. Exfiltration losses from the sewer network are currently assumed at 25%, and expected to decrease to 15% by 2040.
- 12 In the ensuing project financial and economic analyses, only the demand from core population areas is included. It is deemed demand generated from ger areas would not be substantial in the near term. At most demand from ger areas calculated in proportion to core demand is estimated to reach 5-6% by 2030, and 10-12% by 2040. If in the future ger areas will be sewered, any incremental increase in O&M expenses will be minimal and so tariff adjustment will be unsubstantial to cover them, if at all required. **Table 3** presents the projected water and sewerage demand.

Table 3. Water and Wastewater Projections, in m3 million

Particulars	2015	2020	2025	2030	2035	2040
Water	2.335	3.381	4.371	5.224	5.732	6.261
Domestic	1.732	2.442	3.070	3.559	3.733	3.864
Non-domestic	0.602	0.940	1.301	1.665	1.998	2.398
Wastewater	3.198	3.703	4.234	4.903	5.645	6.471
Domestic	1.680	1.877	2.071	2.312	2.527	2.717
Hot water	0.290	0.331	0.367	0.410	0.444	0.475
Non-domestic	1.228	1.496	1.796	2.181	2.674	3.280

Source: Consultant

- 13 Water consumption is projected to increase by 268% from 2.335 million m3 in 2015 to 6.261 million m3 in 2040, a compound annual growth rate (CAGR) of 4.03%. Domestic water usage will increase by 223% over the 25-year period; non-domestic usage by 398%. Wastewater flow, including sewered hot water, is projected to increase by 202% from 3.198 million m3 in 2015 to 6.471 million m3 in 2040, with CAGR at 2.86%.
- 14 Based on the average household size of 4 members, the number of domestic service connections will grow 128% from 14,528 in 2015 to 18,630 in 2040. Non-domestic connections will increase by the same rate at 128% from 2015 to 2040. CAGR for total connections is projected at 1.0%. **Table 4** presents the projected number of water and sewerage connections.

Table 4. Projected Service Connections

Particulars	2015	2020	2025	2030	2035	2040
Total	14,528	15,269	16,048	16,866	17,726	18,630
Domestic	13,434	14,119	14,840	15,597	16,392	17,228
Non-domestic	1,094	1,150	1,208	1,269	1,334	1,401

Source: Consultant

² Demand projections are based on projections given in Chapter 3 of the Final Report. In the financial and economic analyses, the engineering demand estimates are adjusted to allow for conservative population growth rates averaging 1.0% annually from 2015 to 2040. Estimated number of service connections for water and wastewater services are projected to grow from 10,554 in 2015 to 19,960 in 2040.

3 Project Cost Estimates and Financing Plan

Table 5 – Project Cost Estimates

Item	(MNT Million)			(\$ Million)			% of Total Cost
	Foreign Currency	Local Currency	Total Cost	Foreign Currency	Local Currency	Total Cost	
A. Investment Cost							
1. Wastewater Treatment Plant	20,573	4,774	25,347	12.17	2.83	15.00	73
2. Pumping Stations and Sewers							
2.1. Pump Stations	1,480	164	1,645	0.88	0.10	0.97	5
2.2. Sewers	711	474	1,184	0.42	0.28	0.70	3
Subtotal (2)	2,191	638	2,829	1.30	0.38	1.67	8
3. Project Management Support and Capacity Development							
3.1. PMS, Design and Capacity Development	2,002	222	2,224	1.18	0.13	1.32	6
3.2. PMU and PIU Support	736	82	818	0.44	0.05	0.48	2
Subtotal (3)	2,738	304	3,042	1.62	0.18	1.80	9
Subtotal (A)	25,502	5,717	31,219	15.09	3.38	18.47	89
B. Contingencies							
1. Physical	765	171	937	0.45	0.10	0.55	3
2. Price	1,492	118	1,609	0.88	0.07	0.95	5
Sub-total (B)	2,257	289	2,546	1.34	0.17	1.51	7
C. Financing Charges During Implementation							
1. Interest During Construction	1,104	-	1,104	0.65	-	0.65	3
2. Commitment Fees	88	-	88	0.05	-	0.05	0
Sub-total (C)	1,192	-	1,192	0.71	-	0.71	3
Total Project Cost (A+B+C)	28,951	6,006	34,957	17.13	3.55	20.68	100

Source: TA Consultant.

Table 6 – Detailed Cost Estimates by Output, in \$ million

Item	(\$ Million)								
	Total Cost	Wastewater Treatment Plant		Sewer and Pump Stations		Project Management and Capacity Development		PMU and PIU Support	
		Amount	% Cost Category	Amount	% Cost Category	Amount	% Cost Category	Amount	% Cost Category
A. Investment Cost									
1. Wastewater Treatment Plant	15.00	15.00	100	-	0	-	0	-	0
2. Pumping Stations and Sewers									
2.1. Pump Stations	0.97	-	0	0.97	100	-	0	-	0
2.2. Sewers	0.70	-	0	0.70	100	-	0	-	0
Subtotal (2)	1.67	-	0	1.67	100	-	0	-	0
3. Project Management Support and Capacity Development									
3.1. PMS, Design and Capacity Development	1.32		0		0	1.32	100		0
3.2. PMU and PIU Support	0.48		0		0		0	0.48	100
Subtotal (3)	1.80	-	0	-	0	1.32	73	0.48	27
Subtotal (A)	18.47	15.00	81	1.67	9	1.32	7	0.48	3
B. Contingencies									
1. Physical	0.55	0.45	81	0.05	9	0.04	7	0.01	3
2. Price	0.95	0.76	80	0.08	9	0.08	8	0.03	3
Sub-total (B)	1.51	1.21	81	0.13	9	0.12	8	0.04	3
C. Financing Charges During Implementation									
1. Interest During Construction	0.65	0.53	81	0.06	9	0.05	8	0.02	3
2. Commitment Fees	0.05	0.04	80.56	0.00	8.82	0.00	7.76	0.00	3
Sub-total (C)	0.71	0.57	81	0.06	9	0.05	8	0.02	3
Total Project Cost (A+B+C)	20.68	16.78	81	1.87	9	1.49	7	0.55	3

Source: TA Consultant.

Table 7 – Project Financing Plan, in \$ million

Item	Total Cost	ADB		Darkhan Aimag	
		Amount	% Cost Category	Amount	% Cost Category
A. Investment Cost					
1. Wastewater Treatment Plant	15.00	13.33	89	1.67	11
2. Pumping Stations and Sewers					
2.1. Pump Stations	0.97	0.85	87	0.12	13
2.2. Sewers	0.70	0.64	91	0.06	9
Subtotal (2)	1.67	1.49	89	0.19	11
3. Project Management Support and Capacity Development					-
3.1. PMS, Design and Capacity Development	1.32	1.20	91	0.12	9
3.2. PMU and PIU Support	0.48	0.44	91	0.04	9
Subtotal (3)	1.80	1.64	91	0.16	9
Subtotal (A)	18.47	16.45	89	2.02	11
B. Contingencies					
1. Physical	0.55	0.49	89	0.06	11
2. Price	0.95	0.85	89	0.10	11
Sub-total (B)	1.51	1.34	89	0.16	11
C. Financing Charges During Implementation					
1. Interest During Construction	0.65	0.65	100	-	-
2. Commitment Fees	0.05	0.05	100	-	-
Sub-total (C)	0.71	0.71	100	-	-
Total Project Cost (A+B+C)	20.68	18.50	89	2.18	11

Source: TA Consultant.

Table 8 – Annual Project Financing Plan, in \$ million

Item	(\$ Million)					
	Total	2015	2016	2017	2018	2019
A. Investment Cost						
1. Wastewater Treatment Plant	15.00	1.50	5.38	4.36	3.22	0.54
2. Pumping Stations and Sewers						
2.1. Pump Stations	0.97	0.10	0.39	0.28	0.18	0.02
2.2. Sewers	0.70	0.07	0.21	0.20	0.18	0.04
Subtotal (2)	1.67	0.17	0.60	0.49	0.36	0.06
3. Project Management Support and Capacity Development						
3.1. PMS, Design and Capacity Development	1.32	0.13	0.33	0.39	0.26	0.20
3.2. PMU and PIU Support	0.48	0.05	0.12	0.15	0.10	0.07
Subtotal (3)	1.80	0.18	0.45	0.54	0.36	0.27
Subtotal (A)	18.47	1.85	6.43	5.39	3.94	0.87
B. Contingencies						
1. Physical	0.55	0.06	0.19	0.16	0.12	0.03
2. Price	0.95	0.05	0.28	0.30	0.26	0.07
Sub-total (B)	1.51	0.10	0.47	0.46	0.38	0.10
C. Financing Charges During Implementation		75				
1. Interest During Construction	0.65	0.02	0.09	0.15	0.19	0.20
2. Commitment Fees	0.05	0.03	0.02	0.01	0.00	0.00
Sub-total (C)	0.71	0.04	0.10	0.16	0.20	0.21
Total Project Cost (A+B+C)	20.68	2.00	7.00	6.00	4.52	1.17

Source: TA Consultant.

Table 9 – Debt Service Schedule -- ADB OCR Loan, in \$ million

Period	Disbursement	IDC	Loan Outstanding	Annual Repayment (inc. interest)	Interest	Interest Rate (%)
1st 2015	0.45	0.01	0.46			2.48%
2nd 2015	0.45	0.01	0.91			2.48%
1st 2016	1.56	0.02	2.50			2.48%
2nd 2016	1.56	0.02	4.09			2.48%
1st 2017	1.33	0.04	5.46			2.48%
2nd 2017	1.33	0.04	6.82			2.48%
1st 2018	0.98	0.05	7.86			2.48%
2nd 2018	0.98	0.05	8.89			2.48%
1st 2019	0.22	0.06	9.17	-	-	2.48%
2nd 2019	0.22	0.06	9.45	-	-	2.48%
1st 2020			9.21	0.24	0.15	3.18%
2nd 2020			8.98	0.24	0.14	3.18%
1st 2021			8.74	0.24	0.14	3.18%
2nd 2021			8.50	0.24	0.14	3.18%
1st 2022			8.27	0.24	0.13	3.18%
2nd 2022			8.03	0.24	0.13	3.18%
1st 2023			7.80	0.24	0.12	3.18%
2nd 2023			7.56	0.24	0.12	3.18%
1st 2024			7.32	0.24	0.12	3.18%
2nd 2024			7.09	0.24	0.11	3.18%
1st 2025			6.85	0.24	0.11	3.18%
2nd 2025			6.61	0.24	0.11	3.18%
1st 2026			6.38	0.24	0.10	3.18%
2nd 2026			6.14	0.24	0.10	3.18%
1st 2027			5.91	0.24	0.09	3.18%
2nd 2027			5.67	0.24	0.09	3.18%
1st 2028			5.43	0.24	0.09	3.18%
2nd 2028			5.20	0.24	0.08	3.18%
1st 2029			4.96	0.24	0.08	3.18%
2nd 2029			4.72	0.24	0.08	3.18%
1st 2030			4.49	0.24	0.07	3.18%
2nd 2030			4.25	0.24	0.07	3.18%
1st 2031			4.02	0.24	0.06	3.18%
2nd 2031			3.78	0.24	0.06	3.18%
1st 2032			3.54	0.24	0.06	3.18%
2nd 2032			3.31	0.24	0.05	3.18%
1st 2033			3.07	0.24	0.05	3.18%
2nd 2033			2.83	0.24	0.05	3.18%
1st 2034			2.60	0.24	0.04	3.18%
2nd 2034			2.36	0.24	0.04	3.18%
1st 2035			2.13	0.24	0.03	3.18%
2nd 2035			1.89	0.24	0.03	3.18%
1st 2036			1.65	0.24	0.03	3.18%
2nd 2036			1.42	0.24	0.02	3.18%
1st 2037			1.18	0.24	0.02	3.18%
2nd 2037			0.94	0.24	0.02	3.18%
1st 2038			0.71	0.24	0.01	3.18%
2nd 2038			0.47	0.24	0.01	3.18%
1st 2039			0.24	0.24	0.00	3.18%
2nd 2039			0.00	0.24	0.00	3.18%
Total	9.08	0.37		9.45	2.93	

Source: TA Consultant.

Table 10 – Debt Service Schedule – ADB ADF Loan, in \$ million

Period	Disbursement	IDC	Loan Outstanding	Annual		Interest	Interest Rate (%)
				Repayment (inc. interest)			
1st 2015	0.43	0.00	0.43				2.0%
2nd 2015	0.43	0.00	0.86				2.0%
1st 2016	1.51	0.02	2.39				2.0%
2nd 2016	1.51	0.02	3.92				2.0%
1st 2017	1.28	0.03	5.23				2.0%
2nd 2017	1.28	0.03	6.55				2.0%
1st 2018	0.95	0.04	7.54				2.0%
2nd 2018	0.95	0.04	8.53	-	-		2.0%
1st 2019	0.21	0.04	8.79				2.0%
2nd 2019	0.21	0.04	9.05				2.0%
1st 2020		-	8.82	0.23	0.09		2.0%
2nd 2020		-	8.59	0.23	0.09		2.0%
1st 2021		-	8.37	0.23	0.08		2.0%
2nd 2021		-	8.14	0.23	0.08		2.0%
1st 2022		-	7.92	0.23	0.08		2.0%
2nd 2022		-	7.69	0.23	0.08		2.0%
1st 2023		-	7.46	0.23	0.07		2.0%
2nd 2023		-	7.24	0.23	0.07		2.0%
1st 2024		-	7.01	0.23	0.07		2.0%
2nd 2024		-	6.79	0.23	0.07		2.0%
1st 2025		-	6.56	0.23	0.07		2.0%
2nd 2025			6.33	0.23	0.06		2.0%
1st 2026			6.11	0.23	0.06		2.0%
2nd 2026			5.88	0.23	0.06		2.0%
1st 2027			5.65	0.23	0.06		2.0%
2nd 2027			5.43	0.23	0.05		2.0%
1st 2028			5.20	0.23	0.05		2.0%
2nd 2028			4.98	0.23	0.05		2.0%
1st 2029			4.75	0.23	0.05		2.0%
2nd 2029			4.52	0.23	0.05		2.0%
1st 2030			4.30	0.23	0.04		2.0%
2nd 2030			4.07	0.23	0.04		2.0%
1st 2031			3.84	0.23	0.04		2.0%
2nd 2031			3.62	0.23	0.04		2.0%
1st 2032			3.39	0.23	0.03		2.0%
2nd 2032			3.17	0.23	0.03		2.0%
1st 2033			2.94	0.23	0.03		2.0%
2nd 2033			2.71	0.23	0.03		2.0%
1st 2034			2.49	0.23	0.02		2.0%
2nd 2034			2.26	0.23	0.02		2.0%
1st 2035			2.04	0.23	0.02		2.0%
2nd 2035			1.81	0.23	0.02		2.0%
1st 2036			1.58	0.23	0.02		2.0%
2nd 2036			1.36	0.23	0.01		2.0%
1st 2037			1.13	0.23	0.01		2.0%
2nd 2037			0.90	0.23	0.01		2.0%
1st 2038			0.68	0.23	0.01		2.0%
2nd 2038			0.45	0.23	0.00		2.0%
1st 2039			0.23	0.23	0.00		2.0%
2nd 2039			0.00	0.23	0.00		2.0%
Total	8.76	0.29		9.05	1.76		

Source: TA Consultant.

4 Financial Internal Rate of Return

Table 11. FIRR and Sensitivity Analysis, in MNT million

Year	Revenue	Costs		Net Inflow (Outflow)					
		Capital	O&M	Base Case	Cap Cost + O&M Cost + Revenue - 10%	10%	10%	Costs+, Benefits- 10%	Delay by 1-year
2015	660	3,216	536	(3,091)	(3,413)	(3,145)	(3,157)	(3,532)	(3,752)
2016	769	11,189	645	(11,065)	(12,184)	(11,129)	(11,142)	(12,325)	(11,173)
2017	881	9,381	750	(9,250)	(10,188)	(9,325)	(9,338)	(10,351)	(9,362)
2018	996	6,860	851	(6,716)	(7,402)	(6,801)	(6,815)	(7,586)	(6,831)
2019	1,115	1,509	950	(1,344)	(1,494)	(1,439)	(1,455)	(1,701)	(1,463)
2020	1,636	0	1,047	589	589	484	426	321	69
2021	1,763	0	1,136	627	627	513	451	337	500
2022	1,895	0	1,224	671	671	549	482	359	540
2023	2,031	0	1,310	721	721	590	518	387	585
2024	2,171	0	1,394	777	777	637	560	420	637
2025	2,820	0	1,477	1,342	1,342	1,195	1,060	913	693
2026	2,997	0	1,564	1,433	1,433	1,277	1,133	977	1,256
2027	3,181	0	1,650	1,530	1,530	1,365	1,212	1,047	1,347
2028	3,370	0	1,736	1,634	1,634	1,460	1,297	1,123	1,444
2029	3,565	0	1,822	1,743	1,743	1,561	1,387	1,205	1,548
2030	4,092	0	1,908	2,184	2,184	1,993	1,775	1,584	1,657
2031	4,309	0	1,992	2,318	2,318	2,119	1,887	1,688	2,101
2032	4,533	0	2,075	2,457	2,457	2,250	2,004	1,797	2,234
2033	4,763	0	2,160	2,604	2,604	2,388	2,127	1,911	2,373
2034	5,000	0	2,244	2,756	2,756	2,532	2,256	2,032	2,519
2035	5,644	0	2,329	3,314	3,314	3,081	2,750	2,517	2,671
2036	5,905	0	2,413	3,492	3,492	3,251	2,901	2,660	3,230
2037	6,175	0	2,498	3,677	3,677	3,427	3,059	2,809	3,407
2038	6,453	0	2,584	3,868	3,868	3,610	3,223	2,965	3,591
2039	6,738	0	2,671	4,067	4,067	3,800	3,393	3,126	3,781
2040	7,033	0	2,759	4,274	4,274	3,998	3,570	3,294	3,979
FIRR				2.4%	1.8%	1.7%	1.0%	-0.3%	1.3%
FNPV	69,848	30,508	34,420	4,920	1,869	1,478	(2,065)	(8,678)	(802)
Sensitivity Indicator									
FIRR					6.41	6.93	14.49	28.10	16.53
FNPV					6.20	7.00	14.20	27.64	16.51
Switching Value									
FIRR					0.16	0.14	0.07	0.04	0.06
FNPV					0.16	0.14	0.07	0.04	0.06

Source: TA Consultant.

5 Affordability Analysis

Table 12. Affordability Analysis

Particulars	Unit	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040
Average Household											
Average HH income /1	MNT	732,335	790,922	790,922	790,922	790,922	854,196	913,990	977,969	1,046,427	1,119,677
Average HH sewerage bill	MNT/mo	10,125	10,257	10,389	10,523	10,658	11,874	13,723	15,308	16,694	17,060
Income spent for sewerage	rate	1.4%	1.3%	1.3%	1.3%	1.3%	1.4%	1.5%	1.6%	1.6%	1.5%
Average HH water bill	MNT/mo	8,956	9,632	10,273	14,147	14,899	15,615	31,568	58,841	73,416	108,429
Income spent for water	rate	1.2%	1.2%	1.3%	1.8%	1.9%	1.8%	3.5%	6.0%	7.0%	9.7%
Combined spending	rate	2.6%	2.5%	2.6%	3.1%	3.2%	3.2%	5.0%	7.6%	8.6%	11.2%
Low-income Household /2											
Average HH income	MNT	322,904	348,737	348,737	348,737	348,737	376,636	403,000	431,210	461,395	493,693
Average HH sewerage bill	MNT/mo	6,750	6,838	6,926	7,015	7,105	7,916	9,148	10,205	11,129	11,373
Income spent for sewerage	MNT/mo	2.1%	2.0%	2.0%	2.0%	2.0%	2.1%	2.3%	2.4%	2.4%	2.3%
Average HH water bill	MNT/mo	5,970	6,421	6,849	9,431	9,933	10,410	21,046	39,227	48,944	72,286
Income spent for water	rate	1.8%	1.8%	2.0%	2.7%	2.8%	2.8%	5.2%	9.1%	10.6%	14.6%
Combined spending	rate	3.9%	3.8%	3.9%	4.7%	4.9%	4.9%	7.5%	11.5%	13.0%	16.9%
1/ http://en.wikipedia.org/wiki/Economy_of_Mongolia ; adjusted to current value.											
2/ Based on 2013 field survey results; adjusted to current value.											

Source: TA Consultant.

6 Projected Financial Statements

Table 13. Projected Income Statements, in MNT million

Particulars	Unit	2015	2016	2017	2018	2019	2020	2021	2024	2025	2027	2030	2033	2035	2040
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 10	Year 11	Year 13	Year 16	Year 19	Year 21	Year 26
Wastewater flow	m3 mill	3.198	3.293	3.391	3.492	3.596	3.703	3.803	4.121	4.234	4.489	4.903	5.336	5.645	6.471
Average Effective Wastewater	MNT/m3	1,061	1,063	1,065	1,067	1,070	1,179	1,182	1,189	1,311	1,317	1,392	1,404	1,484	1,509
Increase in WW Tariff, Househ	rate	20%					10%			10%		5%		5%	
Water sold	m3 mill	2.335	2.549	2.761	2.970	3.177	3.381	3.580	4.173	4.371	4.703	5.224	5.520	5.732	6.261
Average Effective Water Tariff,	MNT/m3	1,029	1,032	1,035	1,349	1,353	1,357	1,768	2,318	2,324	3,038	3,984	5,039	5,079	7,789
Increase in Water Tariff, House	rate	30%			30%			30%	30%		30%	30%	25%		
Sewerage Revenue	MNT mill	3,392	3,500	3,612	3,727	3,847	4,367	4,495	4,902	5,551	5,912	6,824	7,495	8,375	9,764
Water Revenue	MNT mill	2,403	2,632	2,858	4,007	4,298	4,588	6,331	9,671	10,158	14,289	20,809	27,812	29,109	48,767
Other Revenue	MNT mill	709	750	792	947	997	1,096	1,325	1,783	1,922	2,472	3,381	4,320	4,587	7,162
Total Revenues	MNT mill	6,504	6,882	7,261	8,681	9,142	10,051	12,150	16,357	17,631	22,673	31,014	39,627	42,071	65,694
O&M Cost															
Sewerage O&M	MNT mill	1,708	1,900	2,113	2,350	2,613	2,907	3,224	4,401	4,882	6,038	8,307	11,391	14,055	23,672
Water O&M	MNT mill	2,860	3,156	3,482	3,843	4,242	4,682	5,172	6,975	7,707	9,405	12,688	16,889	20,456	32,833
Other O&M	MNT mill	822	897	978	1,067	1,164	1,270	1,385	1,797	1,961	2,333	3,028	3,814	4,449	6,536
Total O&M Expense	MNT mill	5,391	5,952	6,574	7,260	8,019	8,859	9,781	13,173	14,550	17,777	24,023	32,094	38,959	63,041
Depreciation	MNT mill	-	884	884	884	884	884	884	884	884	884	884	884	884	884
Interest on Loan	MNT mill	-	-	-	-	-	811	780	682	647	575	460	335	245	(0)
Tax	MNT mill	111	5	-	54	24	-	71	162	155	344	565	631	198	177
Net Income (Loss)	MNT mill	1,002	41	(196)	484	215	(503)	635	1,456	1,395	3,094	5,083	5,683	1,784	1,592
Operating Ratio	rate	0.8	0.9	0.9	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.9	1.0
O&M Cost Recovery	rate	121%	116%	110%	120%	114%	113%	124%	124%	121%	128%	129%	123%	108%	104%
O&M Cost + Depreciation Reco	rate	121%	101%	97%	107%	103%	103%	114%	116%	114%	122%	125%	120%	106%	103%
O&M Cost + Depr + Interest Re	rate	121%	101%	97%	107%	103%	95%	106%	111%	110%	118%	122%	119%	105%	103%

Source: TA Consultant

Table 14. Projected Funds Flow Statements, in MNT million

Particulars	Unit	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 11	Year 16	Year 21	Year 26
Sources of Funds											
Income before interest	MNT mill	1,114	46	(196)	538	239	308	2,198	6,107	2,228	1,768
Add: Depreciation	MNT mill	-	884	884	884	884	884	884	884	884	884
Internal cash generation	MNT mill	1,114	929	688	1,421	1,122	1,192	3,081	6,991	3,111	2,652
Aimag/PUSO Contribution	MNT mill	360	1,306	1,079	780	164	-	-	-	-	-
Government	MNT mill	-	-	-	-	-	-	-	-	-	-
ADB Loan	MNT mill	2,970	10,499	9,053	6,849	1,808	-	-	-	-	-
Operating Subsidy	MNT mill										
Total Fund Sources	MNT mill	4,444	12,734	10,820	9,051	3,094	1,192	3,081	6,991	3,111	2,652
Uses of Funds	MNT mill										
Investment in project	MNT mill	3,298	11,655	9,882	7,304	1,626	-	-	-	-	-
Interest during construction	MNT mill	33	149	250	326	346	-	-	-	-	-
Commitment charge	MNT mill	42	27	14	4	2	-	-	-	-	-
Total Financing	MNT mill	3,373	11,832	10,145	7,633	1,973	-	-	-	-	-
Other capex	MNT mill	-	-	-	-	-	-	-	-	-	-
Interest on loan	MNT mill	-	-	-	-	-	811	647	460	245	(0)
Principal repayment	MNT mill	-	-	-	-	-	1,210	1,374	1,561	1,775	0
Total Debt Service	MNT mill	-	-	-	-	-	2,021	2,021	2,021	2,021	-
Reserves	MNT mill	240	263	286	401	430	459	1,016	2,081	2,911	4,877
Working capital changes	MNT mill	831	639	389	1,017	691	(1,288)	45	2,889	(1,820)	(2,225)
Total Fund Uses	MNT mill	4,444	12,734	10,820	9,051	3,094	1,192	3,081	6,991	3,111	2,652
Working Capital Analysis											
Increase (Decrease) in Work	MNT mill	831	639	389	1,017	691	(1,288)	45	2,889	(1,820)	(2,225)
Working capital, beginning	MNT mill	(643)	187	827	1,215	2,232	2,923	(612)	(545)	5,876	2,635
Working capital, end	MNT mill	187	827	1,215	2,232	2,923	1,635	(568)	2,345	4,055	411
Cash Analysis	MNT mill										
Cash, beginning	MNT mill	(28)	880	1,595	2,069	3,081	3,875	664	1,618	9,029	7,565
Cash, ending	MNT mill	880	1,595	2,069	3,081	3,875	2,704	899	4,323	7,776	6,253

Source: TA Consultant

Table 15. Projected Balance Sheets, in MNT million

Particulars	Unit	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 11	Year 16	Year 21	Year 26
Assets											
Fixed Assets	MNT mill	39,159	42,532	54,364	64,509	72,142	74,115	74,115	74,115	74,115	74,115
Accumulated Depreciation	MNT mill	17,098	17,982	18,866	19,750	20,633	21,517	25,936	30,354	34,773	39,191
Net Fixed Assets	MNT mill	22,060	24,550	35,498	44,759	51,509	52,598	48,180	43,761	39,343	34,924
Work-In-Progress	MNT mill	3,373	11,832	10,145	7,633	1,973	-	-	-	-	-
Unclassified	MNT mill	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)
Total Fixed Assets	MNT mill	25,415	36,362	45,624	52,374	53,463	52,579	48,161	43,742	39,324	34,905
Cash	MNT mill	880	1,595	2,069	3,081	3,875	2,704	899	4,323	7,776	6,253
Accounts receivable	MNT mill	240	263	286	401	430	459	1,016	2,081	2,911	4,877
Inventories	MNT mill	44	49	54	60	66	73	120	197	318	510
Other current assets	MNT mill	28	31	34	46	50	53	114	228	323	539
Total Current Assets	MNT mill	1,194	1,938	2,442	3,587	4,420	3,289	2,148	6,829	11,328	12,178
Reserves	MNT mill	548	811	1,097	1,498	1,928	2,386	6,379	13,973	26,813	47,862
Total Assets	MNT mill	27,157	39,112	49,164	57,459	59,811	58,255	56,688	64,544	77,464	94,945
Equity & Liabilities											
Paid-in capital	MNT mill	22,548	23,854	24,933	25,713	25,877	25,877	25,877	25,877	25,877	25,877
Other Contribution - Oper Sul	MNT mill	374	374	374	374	374	374	374	374	374	374
Retained earnings	MNT mill	(234)	(193)	(389)	95	310	(193)	3,295	15,452	32,165	50,673
Total Equity	MNT mill	22,688	24,035	24,918	26,182	26,560	26,058	29,546	41,703	58,416	76,924
Long-term debt	MNT mill	2,970	13,470	22,523	29,372	29,970	28,729	22,028	14,415	5,758	(0)
Accounts payable	MNT mill	898	992	1,096	1,210	1,337	1,476	2,425	4,004	6,493	10,507
Other current liabilities	MNT mill	108	119	131	145	160	177	291	480	779	1,261
Short-term loan	MNT mill	350	350	350	350	350	350	350	350	350	350
Taxes payable	MNT mill	142	146	146	200	224	224	639	1,990	3,847	5,903
Current Portion of long-term c	MNT mill	-	-	-	-	1,210	1,241	1,409	1,602	1,822	0
Total Current Liabilities	MNT mill	1,498	1,607	1,723	1,905	3,281	3,468	5,114	8,426	13,291	18,021
Total Equity & Liabilities	MNT mill	27,157	39,112	49,164	57,459	59,811	58,255	56,688	64,544	77,464	94,945
Current Ratio		0.8	1.2	1.4	1.9	1.3	0.9	0.4	0.8	0.9	0.7

Source: TA Consultant

7 Economic Costs & Benefits

Table 16. Economic Investment Cost, in MNT million

	Financial	Foreign	Local	Unskilled	Balance	Taxes	Other	Foreign	Unskilled	Other	Economic
Components	Cost	Cost	Cost	Labor	Local		Costs	x SERF	x SWRF	x SCF	Project
	Total			30%	Cost	10%		1.03	0.80	1.00	Cost
Civil Works	12,167	3,650	8,517	2,555	5,962	596	5,366	3,752	2,044	5,366	11,162
Materials & Equipment	16,010	12,808	3,202	961	2,241	224	2,017	13,166	768	2,017	15,952
Executive Design	2,224	1,779	445	133	311	31	280	1,829	107	280	2,216
Project Management	818	654	164	49	115	11	103	673	39	103	815
Base Cost	31,219	18,891	12,327	3,698	8,629	863	7,766	19,420	2,959	7,766	30,145
Physical Contingency	937	749	187	56	131	13	118	770	45	118	933
Total Cost	32,155		12,514	3,754	8,760	876	7,884	20,190	3,003	7,884	31,078

SERF = shadow exchange rate factor; SWRF = shadow wage rate factor; SCF = standard conversion factor

Source: TA Consultant

Table 17. Economic Operating and Maintenance Costs, in MNT million

Particulars	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 11	Year 16	Year 21	Year 26
Staff salaries, etc.	351	362	373	384	395	407	465	539	620	711
Power	409	421	434	447	460	474	541	627	722	828
Chemical dosing	91	94	97	100	103	106	121	140	161	185
Heating services, fuel	441	454	468	482	496	511	584	676	779	892
Labotatory & monitoring	51	52	54	55	57	59	67	78	89	103
Maintenance materials, others	85	87	90	92	95	98	112	130	149	171
Total Unescalated O&M Costs	1,428	1,470	1,514	1,559	1,606	1,654	1,890	2,189	2,521	2,889
Traded	405	417	429	442	455	469	536	620	714	819
Non-traded	1,023	1,054	1,085	1,117	1,151	1,185	1,355	1,569	1,806	2,070
Taxes, Local Costs	102	105	109	112	115	118	135	157	181	207
Others, Local Costs	921	948	977	1,006	1,036	1,066	1,219	1,412	1,626	1,863
Shadow Pricing										
Unskilled labor	84	87	89	92	95	98	112	129	149	171
Skilled labor	246	253	261	269	277	285	326	377	434	498
Traded	416	428	441	454	468	482	551	638	734	842
Non-traded	1,003	1,033	1,063	1,095	1,128	1,161	1,327	1,537	1,770	2,029
Total Economic O&M Cost	1,749	1,801	1,855	1,910	1,967	2,026	2,316	2,682	3,088	3,539
Present Value @ EOCC	15,255									

Source: TA Consultant

Table 18. Economic Incremental and Non-incremental Benefits

Particulars	Unit	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040
Existing Connected											
Without Project	mill m3/y	1.469	1.470	1.471	1.472	1.473	1.474	1.471	1.471	1.475	1.475
With Project	mill m3/y	1.561	1.575	1.590	1.605	1.620	1.635	1.711	1.792	1.820	1.820
Incremental	mill m3/y	0.092	0.105	0.119	0.133	0.147	0.161	0.241	0.321	0.345	0.345
New Consumers											
Without Project	mill m3/y	1.709	1.737	1.766	1.795	1.825	1.855	2.003	2.169	2.356	2.552
With Project	mill m3/y	1.909	1.950	1.992	2.035	2.079	2.124	2.358	2.625	2.891	3.156
Incremental	mill m3/y	1.909	1.950	1.992	2.035	2.079	2.124	2.358	2.625	2.891	3.156
Existing Connected + New Consumers											
Total Flow	mill m3/y	3.470	3.526	3.582	3.640	3.699	3.759	4.069	4.417	4.711	4.976
Total Non-incremental	mill m3/y	1.469	1.470	1.471	1.472	1.473	1.474	1.471	1.471	1.475	1.475
Total Incremental	mill m3/y	2.001	2.056	2.111	2.168	2.226	2.285	2.599	2.946	3.236	3.500
Supply price	MNT/m3	1,021	1,021	1,021	1,021	1,021	1,123	1,236	1,297	1,362	1,362
Willingness-to-pay price	MNT/m3	1,314	1,314	1,314	1,314	1,314	1,532	1,532	1,754	1,754	1,754
Total Flow Value	MNT mill	4,130	4,202	4,276	4,352	4,429	5,157	5,800	7,077	7,687	8,151
Value of Non-incremental flow	MNT mill	1,501	1,501	1,502	1,503	1,504	1,656	1,817	1,909	2,010	2,010
Value of Incremental flow	MNT mill	2,629	2,701	2,774	2,848	2,924	3,502	3,982	5,169	5,677	6,141
Present Value @ EOCC		36,905									

Source: Consultant estimates.

8 Economic Internal Rate of Return

Table 19. EIRR and Sensitivity Analysis, in MNT million

Year	Benefits			Costs					Net Inflow (Outflow)											
	Total	Incremental Value	Non-incrmal Value	Total	Capital	Replacemt Cost	Salvage Value	O&M	Base Case	Cap Cost + 10%	O&M Cost + 10%	Benefit - 10%	Costs+, 10%	Benefits- 10%	Delay by 1-year					
2015	4,130	2,629	1,501	4,785	3,036	-	-	1,749	-	655	-	959	-	830	-	1,068	-	1,547	-	4,785
2016	4,202	2,701	1,501	12,529	10,728	-	-	1,801	-	8,327	-	9,400	-	8,507	-	8,747	-	10,000	-	8,400
2017	4,276	2,774	1,502	10,951	9,096	-	-	1,855	-	6,675	-	7,584	-	6,860	-	7,102	-	8,197	-	6,749
2018	4,352	2,848	1,503	8,633	6,723	-	-	1,910	-	4,281	-	4,953	-	4,472	-	4,716	-	5,580	-	4,357
2019	4,429	2,924	1,504	3,463	1,496	-	-	1,967	-	965	-	816	-	769	-	522	-	176	-	888
2020	5,157	3,502	1,656	2,026	-	-	-	2,026	-	3,132	-	3,132	-	2,929	-	2,616	-	2,413	-	2,403
2021	5,249	3,594	1,655	2,080	-	-	-	2,080	-	3,169	-	3,169	-	2,960	-	2,644	-	2,436	-	3,077
2022	5,342	3,688	1,654	2,137	-	-	-	2,137	-	3,206	-	3,206	-	2,992	-	2,671	-	2,458	-	3,112
2023	5,438	3,784	1,654	2,195	-	-	-	2,195	-	3,243	-	3,243	-	3,024	-	2,699	-	2,480	-	3,148
2024	5,535	3,882	1,653	2,254	-	-	-	2,254	-	3,281	-	3,281	-	3,055	-	2,727	-	2,502	-	3,184
2025	5,800	3,982	1,817	2,316	-	-	-	2,316	-	3,484	-	3,484	-	3,253	-	2,904	-	2,673	-	3,220
2026	5,902	4,084	1,818	2,384	-	-	-	2,384	-	3,517	-	3,517	-	3,279	-	2,927	-	2,689	-	3,415
2027	6,006	4,189	1,818	2,455	-	-	-	2,455	-	3,551	-	3,551	-	3,305	-	2,950	-	2,705	-	3,447
2028	6,113	4,295	1,818	2,529	-	-	-	2,529	-	3,584	-	3,584	-	3,331	-	2,973	-	2,720	-	3,478
2029	6,222	4,404	1,818	2,604	-	-	-	2,604	-	3,618	-	3,618	-	3,357	-	2,995	-	2,735	-	3,509
2030	7,077	5,169	1,909	2,682	-	-	-	2,682	-	4,396	-	4,396	-	4,128	-	3,688	-	3,420	-	3,540
2031	7,177	5,267	1,910	2,759	-	-	-	2,759	-	4,418	-	4,418	-	4,142	-	3,701	-	3,425	-	4,319
2032	7,278	5,367	1,911	2,838	-	-	-	2,838	-	4,440	-	4,440	-	4,157	-	3,713	-	3,429	-	4,339
2033	7,381	5,469	1,912	2,919	-	-	-	2,919	-	4,462	-	4,462	-	4,170	-	3,724	-	3,432	-	4,359
2034	7,485	5,572	1,913	3,002	-	-	-	3,002	-	4,483	-	4,483	-	4,183	-	3,735	-	3,434	-	4,379
2035	7,687	5,677	2,010	3,088	-	-	-	3,088	-	4,599	-	4,599	-	4,291	-	3,831	-	3,522	-	4,397
2036	7,777	5,767	2,010	3,173	-	-	-	3,173	-	4,604	-	4,604	-	4,286	-	3,826	-	3,509	-	4,514
2037	7,869	5,859	2,010	3,261	-	-	-	3,261	-	4,607	-	4,607	-	4,281	-	3,820	-	3,494	-	4,516
2038	7,961	5,952	2,010	3,352	-	-	-	3,352	-	4,610	-	4,610	-	4,275	-	3,814	-	3,478	-	4,517
2039	8,056	6,046	2,010	3,444	-	-	-	3,444	-	4,611	-	4,611	-	4,267	-	3,806	-	3,461	-	4,517
2040	8,151	6,141	2,010	3,539	-	-	-	3,539	-	4,612	-	4,612	-	4,258	-	3,797	-	3,443	-	4,516
EIRR										13.0%		11.4%		11.8%		10.0%		7.5%		9.9%
ENPV	36,905	25,277	11,628	35,664	20,409	-	-	15,255		1,241		(800)		(285)		(2,450)		(6,738)		(3,055)
Sensitivity Indicator																				
EIRR												15.82		12.28		29.51		53.64		90.33
ENPV												16.45		12.29		29.74		64.30		102.95
Switching Value																				
EIRR												0.06		0.08		0.03		0.02		0.10
ENPV												0.06		0.08		0.03		0.02		0.01

Table 20 Economic Life-cycle Cost, in MNT million

Year	Capital	Cost O&M	Total	Demand m3	Cost MNT/m3
2015	3,036	1,749	4,785	0.09	50,442
2016	10,728	1,801	12,529	0.19	65,966
2017	9,096	1,855	10,951	0.29	38,034
2018	6,723	1,910	8,633	0.39	22,198
2019	1,496	1,967	3,463	0.49	7,026
2020	-	2,026	2,026	0.60	3,375
2021	-	2,080	2,080	0.70	2,971
2022	-	2,137	2,137	0.80	2,661
2023	-	2,195	2,195	0.91	2,414
2024	-	2,254	2,254	1.02	2,214
2025	-	2,316	2,316	1.13	2,049
2026	-	2,384	2,384	1.26	1,898
2027	-	2,455	2,455	1.39	1,772
2028	-	2,529	2,529	1.52	1,664
2029	-	2,604	2,604	1.66	1,571
2030	-	2,682	2,682	1.80	1,490
2031	-	2,759	2,759	1.94	1,422
2032	-	2,838	2,838	2.08	1,361
2033	-	2,919	2,919	2.23	1,307
2034	-	3,002	3,002	2.39	1,259
2035	-	3,088	3,088	2.54	1,215
2036	-	3,173	3,173	2.70	1,176
2037	-	3,261	3,261	2.86	1,141
2038	-	3,352	3,352	3.02	1,108
2039	-	3,444	3,444	3.19	1,078
2040	-	3,539	3,539	3.37	1,051
ENPV	20,409	15,255	35,664	6.01	5,931

Year	Capital	Cost		Total	Demand m3	Cost MNT/m3
		Replacement	O&M			
2013	-	0	-	-	-	-
2014	1,205	0	-	1,205	-	-
2015	18,092	0	2,530	20,622	0.18	117,830
2016	1,880	0	2,615	4,495	0.33	13,450
2017	1,977	0	2,702	4,679	0.50	9,398
2018	2,225	0	2,792	5,017	0.67	7,530
2019	-	0	2,885	2,885	0.84	3,436
2020	-	0	2,979	2,979	1.02	2,927
2021	-	0	3,063	3,063	1.15	2,657
2022	-	0	3,150	3,150	1.29	2,437
2023	-	0	3,239	3,239	1.44	2,255
2024	-	0	3,330	3,330	1.59	2,101
2025	-	0	3,425	3,425	1.74	1,970
2026	-	0	3,540	3,540	1.97	1,800
2027	-	0	3,658	3,658	2.20	1,662
2028	-	12,673	3,780	16,452	2.44	6,741
2029	-	0	3,905	3,905	2.69	1,453
2030	-	0	4,032	4,032	2.94	1,372
2031	-	0	4,120	4,120	3.08	1,338
2032	-	0	4,209	4,209	3.22	1,305
2033	-	0	4,301	4,301	3.37	1,275
2034	-	0	4,395	4,395	3.52	1,247
2035	-	0	4,490	4,490	3.68	1,220
2036	-	0	4,584	4,584	3.82	1,199
2037	-	0	4,679	4,679	3.97	1,178
2038	-	0	4,776	4,776	4.12	1,159
2039	-	0	4,875	4,875	4.28	1,140
2040	-	0	4,977	4,977	4.43	1,123
ENPV	19,356	2,315	22,381	44,052	9.44	4,666

APPENDIX U: LAND ACQUISITION AND RESETTLEMENT PLAN

Resettlement Plan

Document Stage: Draft
Project Number: L2301-MON

April 2014

Urban Sector Development Project
(Additional Financing) MON: WFMFDC00100

The resettlement plan is a document of the borrower. The views expressed herein do not necessarily represent those of the ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

Preparation of a Wastewater Management Project for Darkhan
city under the Urban Sector Development Project for Mongolia
(Loan 2301-MON)

Draft Resettlement Plan

November 2013

DEFINITION OF TERMS

Affected Persons: In the context of involuntary resettlement, affected persons are those who are physically and economically displaced as a result of (i) involuntary acquisition of land, or (ii) involuntary restrictions on land use or on access.

Economical displacement: Loss of land, assets, access to assets, income sources, or means of livelihood as a result of (i) involuntary acquisition of land or (ii) involuntary restriction on land use or access to legally designated parks and protected area.

Physical displacement: Relocation or loss of shelter. Loss of shelter and assets resulting from the acquisition of land with a project that requires affected persons to move another location.

Compensation: Cash or in-kind payment of the replacement cost of an asset lost due to project-related impacts

Entitlement: Range of measures comprising compensation, income restoration, transfer assistance, income substitution, and relocation, which are due to affected people, depending on the nature of their losses, to restore their economic and social base

Income Restoration: Reestablishment of income sources and livelihoods of affected entities

Involuntary Resettlement: Full or partial, permanent or temporary physical displacement (relocation, loss of residential land or shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a consequence of development projects, compelling affected entities to rebuild their lives, incomes and asset bases

Land Acquisition: The process whereby a person is compelled by a government agency to relinquish their land or land use rights to the government (i) for a public purpose and (ii) in return for compensation. This land may be either owned or possessed by the affected person.

Rehabilitation: Compensatory measures provided under the ADB Policy Framework on Involuntary Resettlement other than payment of the replacement cost of acquired assets

Replacement Cost: The value determined to be fair compensation for various types of agricultural and residential land, crops, trees, and other commodities based on current market rates; the cost of rebuilding houses and structures at current market prices of building materials and labor, without depreciation or deductions for salvaged building material

Temporary Land Use Impacts: When land outside the proposed ROW is required temporarily to carry out construction, persons may be affected in terms of temporary land loss, damage to attachments or disruption of living or business conditions, for which compensation or mitigation is required to offset such impacts

Vulnerable Groups: Distinct group of people (poor, elderly, disabled and female headed households) who may suffer disproportionately from resettlement effects

ABBREVIATIONS

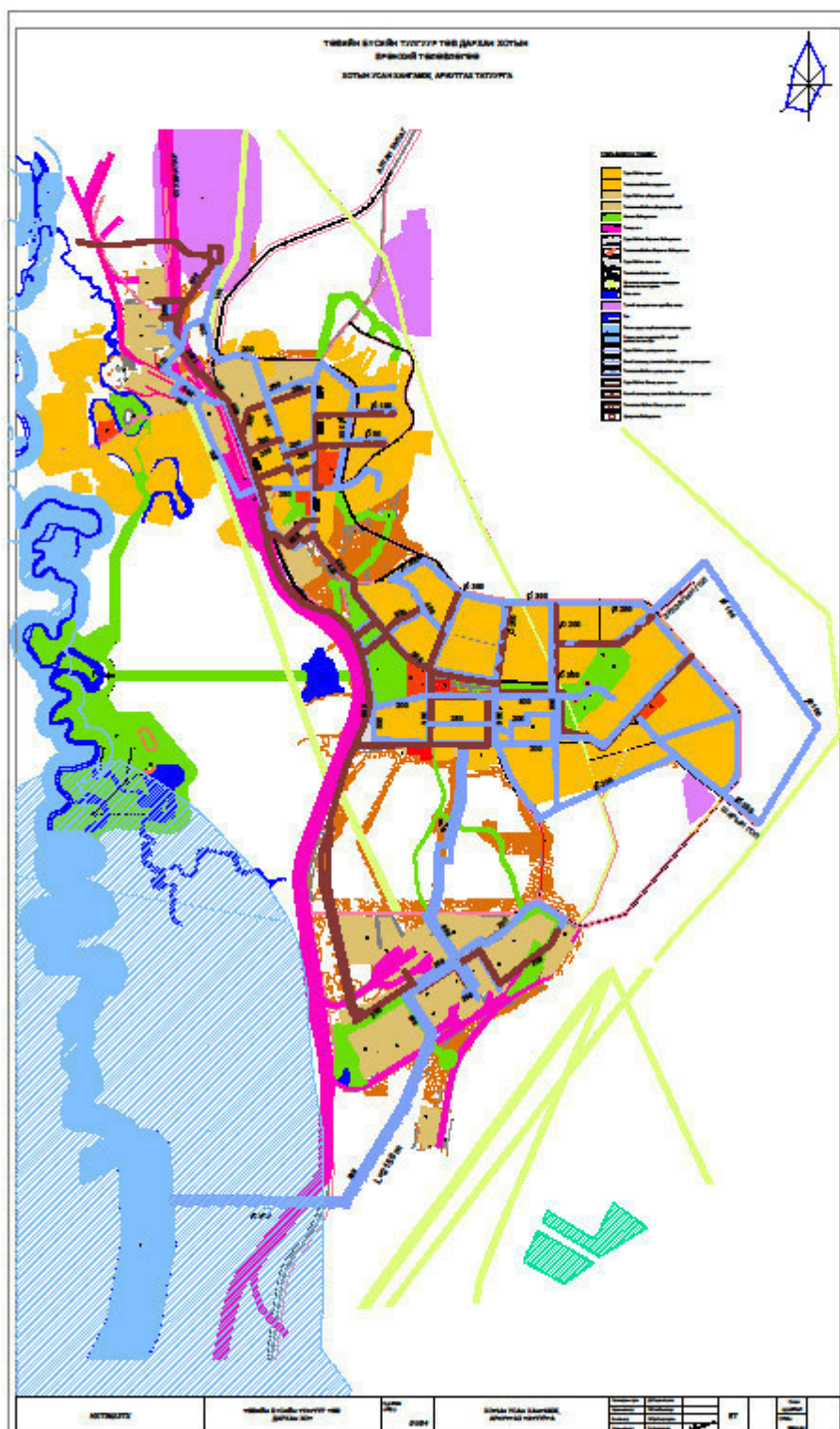
ADB	Asian Development Bank
AP	Affected person / Entity
GOM	Government of Mongolia
GOD	Government of Darkhan-Uul aimag
RP	Resettlement Plan
DMS	Detailed Measurement Survey
MNT	Mongolian currency
PIU	Project Implementation Unit
WG	Working group
GRM	Grievance Redress Mechanism
GAF	Grievance action form
ROW	Right of Way
TOR	Terms of Reference
SPS	Safeguard Policy Statement
UDSP	Urban Development Sector Project
NGO	Non Governmental Organization
CBO	Community Based Organization
LRCUDD	Land Relations, Construction and Urban Development Department

Notes:

Currency Unit		Tugrugs (MNT)
MNT 1.00	=	US\$ 0.000580083
US\$ 1.00	=	MNT 1723.89

Exchange rate: November 12, 2013

LOCATION MAP: PROJECT AREA IN RELATION TO DARKHAN



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A. EXECUTIVE SUMMARY

This document constitutes the Resettlement Plan (RP) for the Additional Financing Technical Assistance (TA) for the Preparation of a Wastewater Management Project for Darkhan city under the Urban Sector Development Project for Mongolia (Loan 2301-MON: UDSP). This RP is prepared in accordance with applicable laws of Mongolia, the Asian Development Bank's (ADB) 2009 Safeguard Policy Statement (SPS) and Land Acquisition and Resettlement Framework (LARF) for the Loan 2301-MON: UDSP.

Project site and ROW: The project will improve the sewerage system of Darkhan city of Darkhan Uul aimag (Darkhan city) through (i) renewing the central treatment facility, (ii) renovation of pump station of Shine Omnod industrial area and construction of 1.4km length sewerage pipeline which is planned to be constructed in right side of the railway, (iii) renovation of 2nd pump station and 50m sewerage pipeline, (iv) 600 m length sewerage pipeline in 5th bag area. The sewerage system will benefit around 80 000 residents Darkhan city. In order to minimize resettlement impact, the right of way (ROW) of the pipelines, which traverse the project areas in various directions, will be reduced to 5m in accordance with the Construction Standard and Rules of Mongolia for Water Supply, External Networks and Structures BNBD 40-02-06 once the detailed design prepared.

Scope of resettlement impact: Only some portions of the sewerage pipelines right-of-way will involve land acquisition and resettlement; other portions will be constructed on either public land or possessed land by Darkhan-Uu Suvag agency. A total of 8 affected entities including two small enterprises, three commercial entities and three state budget institutions will be affected by land acquisition and resettlement. Of the 8 affected entities, 5 affected entities were enumerated in the socioeconomic survey. 5 affected entities will lose a total of 2711.1m² of land and all these losses are partial, all plots are possessed by the state institutions and private companies. No residential land or structures will be affected by the project. Fences and gates totaling 112m in length and belonging to 3 affected entities will need to be moved or replaced. Other affected structures include 2 entrance ways to the food shop and hair and beauty salon, speed bump and an advertisement board.

Indigenous people and gender impact: Indigenous people, i.e. tribal communities existing outside the cultural and legal mainstream of Mongolian society, are not present in the Darkhan city project site. Therefore, the ADB Policy on Indigenous People will not be triggered by this subproject. Adverse differential gender impact by the project on either men or women is not expected.

Legal and policy framework: Land acquisition and resettlement by the government for projects in urban areas is based on negotiation and contracts with affected persons according to the Civil Code of Mongolia. The ADB SPS recognizes negotiated LAR as long as there are willing and free buyers and sellers and eligibility and entitlements are clearly defined and agreed. All APs are eligible for entitlements, as stipulated in the LARF for the Project, including owners, possessors, users, legalizable occupants, non-titled occupants and lessees. The eviction of unlicensed APs is a violation of the ADB SPS. The eligibility and entitlements for specific types of losses in the project are summarized in the Entitlement Matrix in Table 5 of this RP.

Consultation and grievance redress: Information, consultation and participation of APs are ensured through individual and public meetings throughout the RP preparation and implementation process. To date one public meeting to prepare the APs for resettlement was held in October 2013. A four-step grievance mechanism with a clearly defined timeline of 5 weeks for each case has been established and a Grievance Action Form initiating and tracking the grievance process for each complaint prepared.

Institutional arrangements and monitoring: The Working Group for land acquisition and resettlement will be established prior to commencement of civil work which will be responsible for the implementation of the project RP. With the support of the PIU, the WG assists and ensures resettlement safeguard compliance prior to any resettlement, or the award of civil works contracts. Close coordination and commitment between all stakeholders are facilitated by the participation of the WG members.

Compensation strategy and budget: Losses of land and structures, as well as transaction and relocation costs for each AP are covered. The budget for resettlement in the Darkhan city project is expected to amount to **MNT 78,116,172** or **USD 45,313.9** for compensation, administration and contingency costs as well as for monitoring costs which will be funded from state government resources.

A. INTRODUCTION

1. This document constitutes the Resettlement Plan (RP) for the Additional Financing Technical Assistance (TA) for the Preparation of a Wastewater Management Project for Darkhan city under the Urban Sector Development Project for Mongolia (Loan 2301-MON: UDSP). This RP is prepared in accordance with applicable laws of Mongolia, the Asian Development Bank's (ADB) 2009 Safeguard Policy Statement (SPS).
2. This draft RP prepared in compliance with the Safeguard Policy Statement of ADB, which serves as the foundational document for all related resettlement activities undertaken in Darkhan city. These activities are expected to include acquisition of land, removal of physical structures and utilities, and temporary land disturbance on some parts of the project area.
3. This draft RP is prepared based on preliminary project design; and as a result, the information it contains related to scope of land acquisition and resettlement impacts is also preliminary and only an estimation. The resettlement consultant has visited the project site, and conducted a Detailed Measurement Survey (DMS) of affected land plots with support of officers of Land Relations, Construction and Urban Development Department (LRCUDD), socioeconomic survey of affected entities, consultation with government officers and potentially affected people/entities.
4. This draft RP needs to be updated based on final detailed design, and/or if project implementation delays more than two years. The Project Implementation Unit (PIU) will update and finalize the RP in coordination with related government agencies. The final RP will be submitted to the ADB and Government of Darkhan-Uul aimag for review and approval before award of related civil work and before commencement of any resettlement activities.
5. This draft RP provides (i) an assessment of the scope of land acquisition and resettlement, (ii) an overview of the socio-economic situation of affected entities, (iii) the RP policy framework and entitlements, (iv) the procedures for consultation and public participation, (v) a description of institutional arrangements and the land acquisition and resettlement grievance redress mechanism, (vi) the compensation strategy, (vii) a preliminary resettlement budget, (viii) internal and external monitoring and evaluation procedures and (ix) a preliminary implementation schedule.
6. The project will improve the sewerage system of Darkhan city through (i) renewing the central treatment facility, (ii) renovation of 1st pump station of Shine Omnod industrial area and construction of 1.4km length sewerage pipeline which is planned to be constructed in right side of the railway, (iii) renovation of 2nd pump station and 50m sewerage pipeline, (iv) renovation of 600 m length sewerage pipeline in 5th bag area. The sewerage system will benefit around 80 000 residents Darkhan city. Acquisition of land is required only for some activities of the project, namely, for renovation of 1st pump station of Shine Omnod industrial area and renovation of 600 m length sewerage pipeline in 5th bag area.

B. SCOPE OF LAND ACQUISITION AND RESETTLEMENT

Potential Resettlement Impacts

7. The resettlement consultant identified the potentially affected persons/ entities on the basis of preliminary project design and conducted an assessment of land acquisition and resettlement

impacts. The assessment of LAR impacts based on the standard right of way (ROW) width of 10m for the sewerage pipelines. In order to minimize LAR impact, the right of way of the pipelines, can be reduced to the minimum 5m in accordance with the Construction Standard and Rules of Mongolia for Water Supply, External Networks and Structures BNBD 40-02-06 once the detailed design prepared.

8. Land acquisition is required only for some activities of the project, namely, for construction of 1.4km length sewerage pipeline and renovation of 600m length sewerage pipeline in 5th bag area. No land acquisition will be carried out neither on areas for renovation of the existing pump stations nor for construction of the new treatment facility. As informed by LRCUDD, at the time being no land was allocated for possession and ownership at the site, where a new central treatment facility is planned to be constructed.
9. No land acquisition and resettlement take place when replaces 50m length sewerage pipeline which currently is not in operation and connected to the 2nd pump station. Since this area located at the edge of the railway protection zone, there are neither animals nor settlements. During the replacement of the pipeline, temporary disturbance will not be occurred.
10. A detailed measurement survey of affected plots and structures, and a socioeconomic survey of potentially affected persons/entities were conducted on October of 2013. Results of the surveys show that a total of 8 entities located on 7 affected plots in Darkhan city will experience LAR impacts induced by the project. No physical displacement, loss of livelihood is envisaged. Major LAR impacts are partial land loss, removal of structures, temporary land disturbance, and temporary business loss.
11. Two private companies (AP-07, AP-08) will be affected by losing their possession land partially .for ROW of 1.4km length sewerage pipeline. At the time of surveying both land plots were undeveloped: no fences, constructions or structures, crops etc. Since the area is industrial zone and 1.4km length sewerage pipeline, which is planned to be constructed along the right side of the railway no pasture land is affected.
12. Total 6 entities will be affected during replacement of existing 600m length sewerage pipeline: of which three (AP-03, AP-04, AP-06) government budget organizations, two (AP-01, AP-02) small enterprises, and one (AP-05) private company. LAR impacts on these entities are insignificant: partial land loss, removal and reestablishment of the affected structures. These impacts will not interfere their business: business can be continued as usual during construction work and after completion of the project. Only two enterprises will be closed for a short period during construction work, while removing and reestablishing the affected entrance ways/staircase, which was built on public land.
13. Several public assets will be affected by the project and budget for restoration will be included in quantities and budget of the civil works for the entire project. These are: (i) cement square built between the Health center II and the Jiguur secondary school, (ii) some part of cement square within school and health center areas, (iii) sidewalk nearby Khaan Bank's fence, (iv) Two-lane auto road, where sewerage pipes cross This RP does not consider these affected public assets as rehabilitation of these assets have been included in the quantities and budget of the civil works for the entire project.
14. Resettlement impacts identified in this RP preparation needs to be updated and reaffirmed at the project stage of Detailed Engineering Plan. Moreover, RP needs to be updated in accordance with Land Expropriation Law if the law will be submitted and endorsed by the Parliament of Mongolia before the project civil work commencement.

Socioeconomic profile of affected entities

15. Table 1 indicates the number and types of affected entities impacted by the Project. A total of 8 entities including public services, such as school, health center and government agency will be affected.

Table 1: Summary of project affected companies/institutions

	Name of company/institutions	Business activity	LAR impacts
AP-01	"Russian food" Co., LTD	Grocery shop	Removal and reestablishment of entrance way, temporary business loss
AP-02	"Munk-Altangegee" Co., LTD	Beauty salon	Removal and reestablishment of entrance way, temporary business loss
AP-03	"Jiguur" 16 th school complex	Secondary school	Partial land loss, 30m fence, gate and speed bump
AP-04	Health center II	Healthcare service, in and outpatient treatment, diagnosis	Partial land loss, 33m fence and gate
AP-05	KHAAN Bank	Banking service	Partial land loss, 40 m fence and 16 trees
AP-06	Local Property Agency	Property registration	Removal of an electronic advertisement board
AP-07	Montech LLC	unknown	Partial land loss
AP-08	"Nogoon burd" Co., LTD	unknown	Partial land loss

16. Two affected small enterprises owned and run by individuals located at 1st floor of an apartment block building. AP-01 "Russian food" shop employs 1 full time salesperson and serves residents of surrounding area. The shop earning is declining because of prohibition of tobacco and alcohol sales. Nowadays shop's daily net income is around 80,000 MNT. AP-02 "Munk-Altangegee" Co., LTD runs hair and beauty salon with 4 hairdressers and 2 cosmetologists. The owner of the company works as a hairdresser at the salon. All other staffs are lessees and pay monthly rent 150, 000MNT to the owner. Each person earns approximately 40,000-45,000MNT per day.
17. AP-03: 16th school "Jiguur" complex has around 1400 pupils, 90 teachers and 10 other staff. The schoolteachers' receive basic salary approximately 450, 000MNT plus additional salary for class teaching etc. Average salary for other staff ranges between 320,000-360,000MNT. The land has been possessed by the school; however the building belongs to Russian company since 1990s. The school rents the building
18. AP-04 Health center services around 30 000 residents of Old Darkhan and has more than 100 staff including doctors, laboratory assistants, technicians and service staffs. The staff salary ranges between 280,000 up to 680,000MNT.
19. AP -05 Darkhan Khan Bank's central office is located in left side of the Health Center II and it has 40 staff persons. The bank directly serves the banking needs of a community of 15,000 to 60,000 people.
20. AP-06 Local Property Agency of Darkhan-Uul aimag is responsible for registration, usage and control of the local properties.

21. AP-07 and AP-08. Information is not available at this time.

b. Affected land

22. Total size of affected land is 2711,1 m² of possessed land of 5 companies/institutions. As shown in Table 2, all land losses are partial, minimum 0.36% and maximum 1/3 of possessed land. Business activities of the affected companies/institutions can be carried on the remaining land, therefore, physical displacement and allocation of replacement land is not required. Advertisement board that belongs to AP-06 is located within the boundary of the KHAAN Bank plot. Therefore, this entity will not lose any land. Preliminary sizes of affected land are based on the DMS made by land specialists of LRCUDD of Darkhan-Uul aimag.

Table 2: Affected land

Plot Name		Plot number	Land use	Date granted possession right	Validity Period	Size of plot land(m2)	Size of affected land(m2)	Percentage of land loss
AP-03	"Jiguur" 16th school complex	080100387	Education	Unknown	Unknown	19,700	72	0.36%
AP-04	Health center II	080100241	Health care	Unknown	Unknown	2,701	121.6	32.84%
AP-05	KHAAN Bank	080100140	Banking service	Unknown	Unknown	742	200	26.9%
AP-07	Montech Co., LTD	080100492	Commercial	2011	5 years	150,000	1997.5	1.3%
AP-08	"Nogoon burd" Co., LTD	080153837	Commercial	2011	5 years	10,000	320	3.2%

c. Affected structures

23. Three affected entities will have their iron fences of a total length 103 m and gates of length 9m moved back from the edge of their property to accommodate the renewing of sewerage pipes. AP-03 will remove and reestablish total of 30m length metal fence with 60cm high concrete foundation and 30m length wooden bench placed on the fence foundation, fence metal door and speed bump. AP-04 will remove and reestablish 33m length metal fence with concrete foundation and metal gate. AP-05 will remove and reestablish 40 m length newly constructed metal fence with 60cm high concrete foundation. Results of the survey indicate that two entrance ways, an advertisement board that belongs to the government agency needs to be removed. Again, as project design is finalized, there will be a strong focus on minimizing or avoiding the impacts presented above. All affected assets shown in Annex 1.

Table 3: Summary of affected structures

Type of loss	Unit		Number of entities
Iron fence	m	103	3 AP-03, AP-04, AP-05
Iron gate	item	2	2 AP-03, AP-04
Speed bump	item	1	1 AP-03
Advertisement board	item	1	1 AP-06
Entrance ways	item	2	2 AP-01, AP-02
Trees	item	16	1 AP-05,

d. Affected Businesses

24. AP-01 and AP-02 will have temporary business income losses for short period. Entrance ways need to be removed during civil work of renovation of sewerage pipelines and reestablished once civil work completed. Business losses will be compensated on the basis of an average daily net income for last 3 months.

C. OBJECTIVE AND POLICY FRAMEWORK

25. The objective of this RP is to stipulate all relevant entitlements, procedures and compensation, relocation and rehabilitation measures due to entities affected by the acquisition of land under the L2301-MON: Urban Sector Development Project. In particular, the RP is meant to safeguard people's livelihoods and quality of life, meaning that the assistance they will receive is designed to ensure they maintain a level of well-being which is at least equivalent to or better than what it would have been without the project. To achieve this, affected entities must be fully informed, closely consulted, compensated for their losses, assisted to gain possession or ownership of replacement land and property, in order to reestablish their living conditions and enterprises. All affected entities should be provided opportunities to participate in any decision making pertinent to involuntary resettlement (IR).

26. All provisions of this RP are in accordance with the applicable Mongolian Laws³, and the ADB's 2009 Safeguard Policy Statement (SPS). The relevant stipulations of national law and ADB policy are summarized below and the Project's entitlement framework is presented.
27. The basic legislative framework for land acquisition and resettlement under the existing legal framework consists of the Constitution (1992), the Land Law (2006) and the Law on Allocation of Land to Private Citizens (2003), as well as the Civil Code. The Land Law specifies three kinds of private land tenure: (i) ownership, which may be granted only to citizens of Mongolia; (ii) possession, granted under license, to Mongolian citizens, economic entities and organizations, for terms of 15 to 60 years, extendable up to 40 years at a time; and (iii) use, granted under contract or lease to foreign countries and legal entities.
28. The Constitution of Mongolia states, inter alia, that "The State shall have the right to hold landowners responsible in connection with the manner the land is used, to exchange or take it over with compensation on the grounds of special public need, or confiscate the land if it is used in a manner adverse to the health of the population, the interests of environmental protection and national security" and "If the State and its bodies appropriate private property on the grounds of exclusive public need, they shall do so with due compensation and payment" respectively.
29. The Land Law governs expropriation of land allocated for possession or use. The Law on Allocation of Land to Private Citizens contains provisions respecting expropriation of land under private ownership. Non-titled occupants of land are considered illegal land users and can be evicted on the basis of Article 27.4 of the Land Law, which states that "possessing land without a valid license is prohibited".
30. Article 13.1 of the Land Law lists special needs for which land in private possession can be acquired by the state: (i) land under special government protection; (ii) border strip lands; (iii) land for ensuring national defense and security; (iv) land for foreign diplomatic missions and consulates, as well as resident offices of international organizations; (v) free zone area; (vi) land for scientific and technological tests, experiments and sites for regular environmental and climatic observation; and (vi) aimag level reserve rangelands.
31. Article 32 of the Law on Allocation of Land to Private Citizens includes among the special needs "to build roads, lines and networks and other objects of national scale" (32.1.3). Article 13 of the Land Law defines land under roads and networks as "land outside cities, villages and other urban settlements" (13.1). Article 3 of the Law on Auto Roads defines as national scale roads those which connect the capital city to aimag cities, aimag cities to aimag cities and aimag cities to border points and defines local scale roads as those which connect soums, districts, cities and urban settlements in the territory of the capital city and aimags (3.1.8).
32. Consequently, urban roads, water supply and sewerage facilities and district heating facilities, belonging to cities, villages and other urban settlements, are on a local scale. Accordingly, the civil works under the Project is not of a national scale, so exercise of eminent domain under current legislation is not possible.
33. In the absence of legal provisions regulating land acquisition and resettlement in the context of local scale infrastructure facilities, including roads and sewerage networks, the Civil Code provides a legal framework which place land acquisition and resettlement in the context of negotiated settlement. This implies that the State or its legally appointed agents and affected persons engage with each other contractually as equal and autonomous legal persons and participants in a civil

³ Civil Code of Mongolia, 2002; Law of Mongolia on Land, 2002, amendments 2003/04/05/06; Law on Allocation of Land to Mongolian Citizens for Ownership, 2003, amendments 2005/08

legal relationship (Article 1). Citizens and organizations, as well as aimags, the capital city, soums and districts are able to enter into civil legal relations with regard to objects of material and non-material wealth and their acquisition and possession (Articles 6, 7 and 8).

34. The right of a landowner to dispose of owned land through sale 'according to relevant procedures' (notarized contract) is guaranteed in Article 27 of the Law on Allocation of Land to Private Citizens. Possessors, according to Articles 35 and 38 of the Land Law, are also entitled to transfer their possession licenses via a notarized contract, but need to seek the approval of the governor of the soum or district.
35. The local practice of land acquisition and resettlement among district or soum and khoroo or bag level land administration officers, sanctioned by the Directors of the Capital City or Aimag Property Relations Departments, does to some extent reflect the legal framework of the Civil Law based on contracts between autonomous legal persons, but also contains certain elements of involuntary land acquisition and resettlement. After identification of the required properties, affected persons are sent official notifications or "demand letters" by the Property Relations Department, often repeatedly, if no positive response to the government's claim to land is forthcoming. Thereafter, negotiations about the terms of compensation take place with titled affected persons (owners and possessors) and eventually a written agreement is reached. The land administration officers generally follow Cabinet Resolution 103 of 13 April 2003, which determines land valuation tariffs. Once at least 50 percent of the agreed compensation is paid, the land is acquired; when structures have been moved or land is vacated so construction works can commence, the remaining compensation is paid.

ADB Involuntary Resettlement Policy Requirements

36. The 2009 ADB Safeguard Policy Statement (SPS) outlines the requirements that ADB borrowers/clients are required to meet in delivering involuntary resettlement (IR) safeguards⁴ to ADB supported projects. The overriding objectives of the safeguards are: (i) avoid involuntary resettlement wherever possible; (ii) minimize IR by exploring project and design alternatives; (iii) improve, or at least restore the assets, living conditions and livelihoods of affected persons; and (iv) improve the standards of living of vulnerable displaced groups.
37. SPS main principles are:
 - Involuntary resettlement is to be avoided or minimized.
 - Compensation/Rehabilitation provisions will ensure that APs' standard of living is enhanced or at least retorted.
 - APs should be fully informed and consulted on land acquisition and resettlement compensation options.
 - APs' socio-cultural institutions (such as libraries, community centers, cultural centers) should be supported/used as much as possible. They shall be involved at a maximum level.
 - Compensation will be carried out with equal consideration of women and men.
 - Lack of legal title should not hinder compensation and/or rehabilitation.

⁴ Refer to Appendix 2 of the SPS – "Safeguard Requirements for Involuntary Resettlement".

- The standards of living of the displaced poor and other vulnerable groups, including women, should be improved at least national minimum standards.
 - Land acquisition and resettlement subsidies will be fully provided prior to clearance of right of way/ground leveling and demolishing
 - Conceive and execute involuntary resettlement as part of a development project or program.
38. The ADB's IR safeguards state that eligibility includes all people with formal legal rights to affected land (in whole or part) and those who have claims to the affected land that is recognized under national laws. People without formal legal rights or recognized claims, but who have occupied the land or structure prior to the agreed upon and publicized cut-off date, are eligible for compensation for non-land assets and resettlement assistance.
39. The ADB's IR principles also describe the compensation and assistance that will be provided, including: adequate and appropriate replacement land and structures, or cash compensation at full replacement cost without depreciation, transaction costs, accrued interest, transitional/restoration costs and any other payments; where feasible preference for land-based (not cash) resettlement strategies; assistance with relocation and improved housing with comparable access to employment/productive opportunities, civic infrastructure and community services; transitional support and development assistance; and opportunities to share in project benefits. For those who are economically displaced, they will be compensated for loss of income, and be assisted in restoring, and where possible improving, their earning capacity, production levels and standard of living.
40. Project proponents are expected to carry out meaningful consultations with affected persons and other stakeholders, including disclosure of information on entitlements and resettlement options, participation in the resettlement planning process, and establishment of a transparent and effective Grievance Redress Mechanism (GRM), and, wherever possible, negotiate fair settlements to avoid forcible evictions.
41. Project proponents are also expected to undertake a comprehensive Social Impact Assessment (SIA) in order to understand fully who will be displaced and how it will impact them currently and into the future. The SIA is to include an inventory of affected people, their assets, their income and livelihoods, and should be disaggregated based on gender. The SIA should also describe the people who might be more vulnerable to negative impacts, and suggest targeted measures the proponent will put in place to ensure vulnerable people do not suffer disproportionately and can share equally in the project opportunities and benefits.
42. The ADB's SPS requires preparation and disclosure of a Resettlement Plan (RP). The RP should describe in detail affected people's entitlements; income and livelihood restoration strategy (including measures for vulnerable people); institutional arrangements; consultation, participation and disclosure; GRM; monitoring and reporting framework (including external monitoring for projects with significant land related impacts), budget and time-bound implementation schedule. Displacement may not occur prior to implementation of the Resettlement Plan, including payment of compensation and provision of other resettlement entitlements.

Assessment of Policy Gaps

43. There are several significant policy gaps between the Mongolian legal framework and the ADB IR safeguard requirements. According to Mongolian law or practice: (i) non-titled occupants of land (without ownership or possession license), including lessees of land and structures, are not eligible for compensation and rehabilitation entitlements; (ii) compensation for affected land is based on a

government compensation tariff, not market rates, although there is room for negotiation with individual APs; (iii) a depreciation coefficient is applied in the valuation of affected structures; (iv) income and livelihood rehabilitation is not normally considered in local land acquisition practice; (v) transaction costs are not included in compensation payments; (vi) there are no project internal grievance procedures preceding dispute resolution by governors and the courts; (vii) public consultation and information disclosure is not practiced; (viii) an eligibility cut-off date is not declared; (ix) there is no limitation on commencement of civil works until after completion of all land acquisition procedures; and (x) there is no need to prepare an RP or to undertake monitoring and evaluation activities.

44. Table 4 outlines the key provisions of existing Mongolian laws and practices relevant to land acquisition and resettlement and indicates their compatibility or inconsistency with the ADB IR safeguard requirements.

Table 1: Comparison of IR related provisions in Mongolian Law and the ADB SPS

IR issues	Provisions of Mongolian law	ADB policy requirements
Involuntary Resettlement	<p>Invoking eminent domain is only legally recognized when taking back land for special needs of the State including, lines and networks and other objects of national scale (Law on Allocation of Land to Private Citizens, Articles 32 and 37; Land Law, Articles 42 and 43). This law does not apply to the Project and consequently, the Civil Code will apply.</p> <p>Current practice by government in local scale projects entails a demand letter with threat of sanctions and offer of payment of compensation.</p>	Eminent domain is generally recognized and subject to policy provisions aiming at avoiding and minimizing land acquisition and replacement of lost assets and rehabilitation of livelihoods. Affected entities to be at least as well-off as without project.
Negotiated Settlement	The Civil Code of Mongolia is the legal basis for contractual agreements on the transfer of land in the ROW from affected entities to the government (Chapter 15, Articles 1, 6, 7, 8, 109 and 112, among others).	Recognition of negotiated settlement, where there is a willing buyer and a willing seller. If the seller has no option, then the IR policy requirements apply.
Eligible Affected Entities	<p>Licensed owners, possessors and users of land can transfer their titles to other legal persons recognized under the Land Law (Articles 35 and 38) and the Law on Allocation of Land to Private Citizens (Article 27).</p> <p>Non-titled occupants of land as illegal possessors are not eligible to transfer the land occupied or receive compensation (Land Law, Article 27.4).</p> <p>The Civil Code recognizes the right of a long term non-owner occupant of ownerless immovable property (incl. land) to own it after 15 years, if registered in the State register (104.2).</p>	Titled and non-titled affected entities are eligible to receive different entitlements. Titled affected entities are entitled to compensation and rehabilitation for affected land and non-land assets at replacement cost. Non-titled affected entities are eligible for entitlements for non-land assets at replacement cost and to rehabilitation assistance, possibly including replacement land, such that they are no worse off than before the project.
Compensation for land	<p>Contractually agreed payment for land transferred to the government.</p> <p>Local practice applies the government land valuation tariff (Cabinet Resolution 103, 2003), but negotiates with affected entities as well. Replacement land can be provided</p>	Land compensation at replacement cost based on land valuation at average market value within 1 year before the delivery of compensation or replacement land of similar size and quality.

IR issues	Provisions of Mongolian law	ADB policy requirements
	if an affected entity's entire land or large part thereof is acquired.	
Compensation for structures	Contractually agreed payment for transfer of structures located on land acquired. The value of structures is determined at market rates, with depreciation deducted from gross value of the structure.	Valuation of structures is based on current market value, i.e. replacement cost of new construction of the structure without deduction of depreciation. Affected entities can be permitted to salvage materials.
Joint property ownership	The Civil Code recognizes common property ownership and family property rights (Articles 108, and 125-128). Common property ownership requires permission of other owners to dispose of part of the property (108.4). Family property includes 'other properties accrued since the marriage, notwithstanding in which name of spouses or family members the property is registered' (126.2.4). Disposal of immovable (incl. land) family property requires mutual agreement (128.1) and certified written permission from an adult family member (128.2).	No conflict with ADB SPS. Joint signatures are encouraged.
Easement (property servitude)	Legal provision for easements or property servitude, allowing the use of another person's property for specific public or private purposes is permitted under local law; mutual agreement and payment of a fee are required (Civil Code, Article 151, Land Law, Article 48 and Law on Allocation of Land to Private Citizens, Article 33).	No conflict with ADB SPS.
Rental of land or house	The Civil Code, Chapter 25 regulates the lease of property, including land and houses. If ownership is transferred the new owner incurs all rights and obligations of a lessor (Article 297). No provisions for lessee rights in case of land acquisition for a project, except that termination of a lease requires a 3 month notice (Article 294.3)	Lessee is considered an affected entity and eligible to receive entitlements based on the type and degree of impacts.
Community and public resource losses	Affected community and public assets can be transferred through contractual agreement under the Civil Code. The cost of moving affected infrastructure is included in cost of civil works under the Project.	Common property resources or public structures and infrastructure affected by land acquisition are eligible for compensation.
Income and livelihood rehabilitation	No provisions in contractual agreements for transfer of property.	Assistance for economic and social rehabilitation due to loss of jobs, incomes and livelihoods, including (i) income compensation or support for the period of interruption of business or employment, and (ii) priority employment in project civil works, especially to poor and vulnerable households.
Relocation and transaction costs	The Mongolian Law on State Registration of Property Allocation Rights and Other Related Rights requires payment of registration duties and service fees for the registration of immovable property with the	Relocation and transfer expenses, including fees for the registration of properties and other administrative charges, are part of the replacement cost of lost assets and included in compensation.

IR issues	Provisions of Mongolian law	ADB policy requirements
	State Administrative Authority in charge of state registration of property rights (Article 9). All registration and other fees, as well as cost of relocation, are responsibility of parties to a contract and can be included in a contract.	
Grievance procedure	The Land Law refers disputes over land to the governors of administrative units and eventually the courts (Article 60). The Civil Code and Law on Allocation of Land to Private Citizens refer various types of disputes to the courts.	An adequate GRM for affected people is required.
RP information disclosure and public consultation	No provision for public consultation and information disclosure. In practice, all cases involve a period of negotiation.	Affected entities are to be fully informed and closely consulted on compensation and resettlement options. Draft, final and revised RPs is to be disclosed and discussed, as well as published on ADB's website.
Cut-off date	Not applicable	An eligibility cut-off date is to be set when the project is officially notified, the project area is delineated or the census of the affected population is taken, to prevent influx of non-eligible persons and land speculation.
Right of way	Water pipes up to 1000mm diameter require a safety zone of 10m (5m from center of pipe) in dry soil. It may be narrowed in built-up areas. (Mongolian Law on Water Supply and Sewerage System Utility of Cities and Settlements, Article 12.6; Construction Standard and Procedure of Mongolia BNBD 40-02-06, paragraph 10.20).	No conflict with SPS.
Notification period for vacating property and commencement of civil works	Time period for vacating a property may be defined in contract. Civil works commence in parallel with acquisition of property, but without defined waiting period.	Notification periods are not specified by ADB. Cash compensation and/or replacement of assets must be completed before displacement; land acquisition procedures, except for rehabilitation measures, must be completed before commencement of civil works.

D. ELIGIBILITY AND ENTITLEMENTS

45. To bridge the gap between Mongolian Law and the ADB SPS, this RP presents the project's entitlement provisions, which integrate both. In addition, the following principles guided the development of entitlements.

Design and implementation of the project will make every effort to avoid and minimize land acquisition and resettlement impacts, including temporary impacts during construction.

The project will adopt a negotiated land acquisition practice involving contractual agreements on the basis of the Civil Code of Mongolia.

All compensation and allowances will be determined and paid or provided as specified in the contractual agreements, and all agreements will be certified by a notary and registered with the State Administrative Authority in charge of state registration of property rights.

An adequate GRM will be established.

All affected entities will be eligible for compensation and rehabilitation entitlements irrespective of their property status, including unlicensed occupants of land, and of the type of use of their property (residential, commercial, public or community⁵).

Affected land will be compensated either at replacement cost based on market rates for comparable land or the applicable government compensation tariff, whichever is higher, or, in the case of full loss of a plot of land, with replacement land, including land preparation and restoration of utility services (electricity, water, etc.), as applicable. The Land Relations, Construction and Urban Development Department (LRCUDD) will assist the affected persons to identify and approve the relocation plot. The loss of 50% or more of a plot is considered a full loss eligible for compensation for the entire plot, if the affected person so desires.

Unlicensed occupants in case of full loss of land (i.e. greater than 50 percent) will be provided relocation assistance sufficient for them to restore their standard of living at an adequate alternative site with security of tenure (through grant of possession license), as well as compensation at full replacement cost for loss of non-land assets, such as dwellings and other improvements to the land.

All affected entities agreeing to receive replacement land or affected entities with pending license approval for ownership or possession or affected entities with possession licenses seeking ownership status, will be provided with ownership licenses prior to displacement and the affected entity will be registered with the State Administrative Authority in charge of state registration of property rights.

Affected structures will be compensated at replacement cost based on prevailing market rates for comparable types of structures determined through professional valuations by a certified valuator without deduction of depreciation. Materials may also be salvaged by the affected entities.

Temporary disturbances, including removal of fences and civil works on land outside the ROW, will be compensated in cash based on negotiated agreements with affected entities. Affected entities will enjoy continued access to land and residences. Civil works contractors will move fences and will restore land and fences upon completion of works.

Temporary loss of employment income will be compensated for the period of interruption of employment. Permanent loss of employment will be compensated with cash indemnity for 3 months wages for workers/employees that have been engaged for at least 1 year; otherwise entitlement is 1 month wage. The affected persons with permanent loss of employment shall be provided also (a) other labor benefits and retrenchment allowances according to the national labor law, (b) skills development trainings for new employment opportunities, and (c) assistance to find new employment.

Temporary loss of business income to the owner will be compensated through cash compensation equivalent to net profit after tax, i.e. for the period of interruption of business based on tax receipts/other valid documents or, if these are not available, based on the average net income of typical road businesses in subproject areas.

⁵ Not applicable if the replacement of public structures (electricity, water supply lines, etc) is covered under civil works contracts.

For permanent business loss, compensation shall include also any costs required for physical and financial reestablishment of business. If the business needs to be relocated, the following options will be provided to the APs: (a) government will provide replacement land/shop space prior to relocation; or (b) if an acceptable plot of land/space cannot be agreed upon, net income loss of 1 year will be paid and, in consultation with the affected persons; the replacement land/shop space will be provided within 1 year of displacement.

Vulnerable and poor households will be provided preferential employment in subproject-related workforce, if available and desired by DPs. Depending on nature of impact, other support may include: cash assistance up to a maximum of six months, guaranteed at the rate of minimum wage and assistance in reconstituting affected business or employment; assistance with selecting a replacement plot and with preparation of contracts and administrative process of provisions of replacement plot; and, assistance with house relocation and other construction activities (new construction should meet minimum standards), registration of property titles, relocation expenses, or a minimum housing guarantee.

All relocation, transfer and transaction expenses (fees and duties) will either be waived by government or included in the contract price of the affected properties.

An eligibility cut-off date will be set for the subproject with land-take at the time of the census and detailed measurement of affected land and property.

Civil works shall not commence unless all compensation and relocation activities have been completed, and short-term financial assistance for loss of income has been paid.

Cash compensation will not be taxable, and all fees and transaction costs to register property will be paid by the project owner.

46. The entitlements described above are summarized in the Entitlement Matrix presented in Table 5 below. Not all the types of loss described in this section have currently been identified to date as expected project impacts. Nevertheless these impact categories are in this section and included in the entitlement matrix so that should they emerge in the future, they may be addressed in accordance with this RP.

Table 2: Entitlement Matrix

Type of Loss/Application	Specification	Eligibility	Compensation entitlements
LAND (residential/ commercial/public/ community)	Full loss of plot (=>50%)	Owner, possessor	The AP may choose between the following alternatives: Land for land compensation through provision of replacement plot of comparable value and location as lost plot; Ownership license and State registration; OR Cash compensation at market rates or the government compensation tariff, whichever is higher, based on contractual agreement All taxes, registration and transfer costs are waived or included in compensation price
		Unlicensed occupant of land	Relocation assistance sufficient to restore standard of living at an adequate alternative

Type of Loss/Application	Specification	Eligibility	Compensation entitlements
			<p>site with security of tenure (i.e. possession license).</p> <p>All taxes, registration and transfer costs are waived or included in compensation price</p> <p>OR</p> <p>Cash compensation at market rates or the government compensation tariff, whichever is higher, based on contractual agreement</p> <p>All taxes, registration and transfer costs are waived or included in compensation price</p>
		User	<p>Replacement plot with use license</p> <p>OR, if feasible and desired</p> <p>Ownership license and State registration;</p> <p>All taxes, registration and transfer costs are waived or included in compensation price</p>
		Lessee	<p>The AP may choose between the following alternatives:</p> <p>Allocation of plot with ownership license and State registration</p> <p>All taxes, registration and transfer costs are waived or included in compensation price</p> <p>OR</p> <p>Cash refund at rental fee rate and proportionate to duration of remaining lease period</p>
	Partial loss of plot (<50%)	Owner, possessor	<p>Cash compensation at market rates or the government compensation tariff, whichever is higher, based on contractual agreement</p> <p>All taxes are waived or included in compensation price</p>
		Unlicensed occupant of land	<p>Possession license and State registration for adjacent unlicensed land will be provided by government;</p> <p>All taxes, registration and transfer costs are waived</p>
		User	Continuation of use license on remaining land
		Lessee	Cash refund at rental fee rate and proportionate to duration of remaining lease period
STRUCTURES (residential/ commercial/public/ community)	Full loss of structure and relocation	Owner, possessor, unlicensed occupant of land	Cash compensation for replacement of lost structure at market rate determined through professional valuations by a certified valuer without deduction of depreciation, based on contractual agreement, and no deduction for salvaged materials
Temporary disturbance	Removal of fence, civil works on land outside ROW, restoration of land and fences	Owner, possessor, unlicensed occupant of land	<p>Cash compensation fee negotiated with AP.</p> <p>Access to land and residences</p> <p>Fences will be moved by civil works contractor</p> <p>There is no deduction for salvaged materials</p>

Type of Loss/Application	Specification	Eligibility	Compensation entitlements
Businesses	Any business loss due to land acquisition or construction activities by Project	All APs so temporarily affected	Cash compensation equivalent to the loss, i.e. for the period of interruption of business based on tax receipts/other valid documents or, if these are not available, based on the average net income of typical road businesses in subproject areas.
		All APs so permanently affected	Cash compensation equivalent to the loss, i.e. for the period of interruption of business based on tax receipts/other valid documents or, if these are not available, based on the average net income of typical road businesses in subproject areas. AND Any costs required for physical and financial reestablishment of business. If the business needs to be relocated, the following options will be provided to the DPs: (a) government will provide replacement land/shop space prior to relocation; or (b) if an acceptable plot of land/space cannot be agreed upon, net income loss of 1 year will be paid and, in consultation with the affected persons; the replacement land/shop space will be provided within 1 year of displacement.
Employment	Any employment loss due to land acquisition or construction activities	All temporarily laid-off employees of affected businesses	Compensation for loss of employment income for the period of interruption of employment.
		All permanently laid-off employees of affected businesses	Compensated with cash indemnity for 3 months wages for workers/employees that have been engaged for at least 1 year; otherwise entitlement is 1-month wage. AND Other labor benefits and retrenchment allowances according to the national labor law, Skills development trainings for new employment opportunities Assistance to find new employment.
Vulnerable and/or severely affected APs ⁶	Permanent loss of livelihood	All vulnerable and/or severely affected APs	Preferential employment in subproject-related workforce, if available and desired by APs; Cash assistance up to a maximum of six months at guaranteed lowest living level and assistance in reconstitution of business or employment;

⁶ Vulnerable groups are distinct groups of people (poor, elderly, disabled, and female headed households) who may suffer disproportionately from resettlement. Severely affected APs include those whose remaining landholdings are no longer fit for original purpose.

Type of Loss/Application	Specification	Eligibility	Compensation entitlements
	Loss of land	All vulnerable and/or severely affected APs	Assistance with selecting a replacement plot and with preparation of contracts and administrative process of provisions of replacement plot;
	Loss of structure	All vulnerable and/or severely affected APs	Assistance with house relocation and other construction activities (new housing should meet minimum standard), registration of property titles, relocation expenses, minimum housing guarantee.
	Livelihood support	Any household member of a vulnerable AP	Preferential treatment for temporary employment during construction; Employment training (3–6 months).
	Temporary disturbance	All vulnerable	Preferential treatment to avoid, minimize or mitigate disturbance as quickly as possible.

47. Compensation eligibility will be limited by a cut-off date to be set at the time of the census and DMS following preparation of detailed designs. All affected entities settling in affected areas after that date or existing affected entities who alter their assets and who cannot prove that they are the rightful owners/users of affected plots will not be eligible for compensation.
48. Disclosure of entitlements and all other relevant subproject information will be conducted in a timely way. This disclosure will be done in accessible formats that give affected people the means to participate effectively from an informed position. This means that affected people will have sufficient time between the provision of information and the consultative decision making process to reflect upon the input they want to provide. For more information on consultation activities see Section E.
49. A detailed account of the resettlement impact and compensation of losses for each AP is presented in Table 6.

Table 6: List of affected entities and assets with compensation strategy

	Total licensed land (m²)	Affected land (m²)	Affected land as proportion of total land (%)	Total compensation for land (MNT)	Type of affected structure(s)	Total compensation of affected structures (MNT)	Days of Business Loss	Compensatio n of Business Loss (MNT)
AP-01					Entrance way	3,327,708	7	560,000
AP-02					Entrance way	5,546,180	7	1,680,000
AP-03	19,700	72	0.36%	756,000	Iron fence with concrete foundation , speed bum, gate	2,726,000	-	-
AP-04	2,701	121.6	32.84%	1,276,800	Iron fence with concrete foundation, gate	2,813,600	-	-
AP-05	742	200	26.9%	2,100,000	Iron fence with concrete foundation, trees	8,400,000	-	-
AP-06					Board	5,000,000	-	-
AP-07	150,000	1997.5	1.3%	20,973,750	None	-	-	-
AP-08	10,000	320	3.2%	3,360,000	None	-	-	-

E. CONSULTATION AND PUBLIC PARTICIPATION

50. According to ADB SPS policy principles affected entities must be fully informed, closely consulted, and encouraged to participate in any decision making pertinent to land acquisition and resettlement for the project, including the final design of infrastructure facilities, preparation of contractual agreements, determination of prices for assets to be transferred, selection of replacement plots and the restoration of livelihoods. For this purposes the consultant has organized a public meeting with representatives of potentially affected entities.
51. A public meeting took place in October 2013. Participants were informed about the project, potential LAR impacts induced by the project, ADB SPS. Preference of compensation was also discussed with APs and relevant info was collected. Registration page of the meeting is attached as Annex 2.
52. Such disclosure of information to and consultation with affected entities ensures that they can express their opinions, apprehensions and objections. Project proponents, including government stakeholders, can address the issues raised and, upon careful consideration, incorporate them in subproject design, insofar as they are compatible with applicable local law and the ADB SPS.
53. The final RP will include a full list of all consultation activities conducted and planned activities during implementation, and a detailed description of the consultation process, which will at minimum involve the following.
 - Individual consultations with affected entities during and after the full census, DMS, and socio-economic survey, to ensure that they have understood the subproject's parameters and their own rights, and have had the opportunity to provide input.
 - Public consultation meeting open and accessible to all affected entities to inform these entities and other stakeholders about the land acquisition and resettlement planning process, its guiding legal and policy framework and its anticipated scope of impact.
 - Public consultation meeting open to all affected entities to announce declaration of the entitlement cut-off date and identify its geographical scope.
 - Public consultation meeting with all affected entities to disclose the draft RP, including eligibility and entitlements, grievance procedures and monitoring, and to discuss changes and the concerns of the affected entities and other stakeholders.
 - Continued individual consultations to prepare contract negotiations and address individual concerns.
 - Individual negotiations of contract terms with affected entities.
 - Public consultation meeting with all affected entities to disclose and discuss revised draft RP.
 - Public consultation meeting with all affected entities to disclose approved RP and to announce the date, venue, and time of the payment of agreed property transfer prices and other compensation or entitlements.
 - Additional individual and public consultation meetings will be held throughout the planning and implementation of the RP as required in response to emergent issues.
 - Maintenance of up to date attendance lists and minutes of all public consultations (to be appended to the project's RP and subsequent monitoring reports.
 - Documentation of the consultation and participation process

54. During disclosure of the draft and final RP, rights and entitlements will be fully explained to affected entities. English versions of the RP will be submitted to the ADB for review and approval. Final RP for the project will be endorsed by the Government of Darkhan-Uul aimag (GOD). RP will be published on the ADB website (Mongolian and English versions).

F. GRIEVANCE REDRESS MECHANISM

55. The Working Group will serve as the initial committee for grievance redress and will provide a forum for raising objections and holding discussions to resolve conflicts. An aggrieved AP may submit grievances to any member of the Working Group, who will log a complaint in the GAF and request the chairman to call a meeting, where it will be presented, addressed and resolved within 1 week. The Working Group will record its deliberations and inform the concerned parties within the same week of its findings and recommendations and present these to the *Aimag* and *Soum* Governors for action. If the grievance is not resolved within 2 weeks from its lodging, the grievance will be submitted to the LRCUDD by the Working Group member of LAD and its resolution is recommended to the Aimag Governor for approval and action within 1 more week. If still unresolved within another week the Aimag Governor will seek to resolve the issue and initiate action within another week.
56. In cases where an affected entity is not satisfied with the attempted resolution of their grievance, they believe they have been harmed due to the project's non-compliance with ADB policy, and where they have made good faith efforts to solve their problems by working with ADB Project Team, they may submit a complaint to the ADB's Office of Special Project Facility or Office of Compliance Review in accordance with ADB's Accountability Mechanism. APs and NGOs/CBOs operating in the area can be actively involved in all stages of the grievance redress procedures. The grievance redress mechanism will include the following steps:

Table 7: Grievance mechanism

Steps	Actors / actions	Timing
1	AP lodges grievance with Working Group (WG) member	1 week
	WG member prepares GAF and initiates WG meeting	
	WG addresses grievance, informs AP and proposes resolution to Governor (aimag/soum)	
	Governor initiates action for resolution	1 week
If grievance is not resolved		
2	LRCUDD WG member submits grievance to LAD	1 week
	LRCUDD addresses grievance, informs AP and proposes resolution to Aimag Governor	
	Aimag Governor initiates action for resolution	1 week
If grievance is not resolved		
3	Aimag Governor addresses grievance and initiates action for resolution	1 week
If grievance is not resolved		
4	Grievance is referred to court system	Open

The above mentioned grievance mechanism does not limit the citizen's rights to submit the case to the court of law at any point in time of the grievance process.

57. A Grievance Action Form (GAF) will be designed to cover the various aspects of the land acquisition process, for use in the grievance redress process. GAFs serve to log and follow up grievances in a consistent and transparent manner (a sample GAF is appended in Annex 2). All grievances submitted will be recorded on a GAF, and a copy of the GAF provided to the person submitting the grievance. The GAF will at minimum contain the following:

Basic information about affected entity / entities submitting the GAF, including names and contact information.

Category of grievance filed (legal, technical/engineering, social, or financial).

Detailed description of grievance.

Type of action taken (resolved at the WG level or referred to higher authorities)

G. INSTITUTIONAL ARRANGEMENTS

58. Organization and administrative arrangements for the effective preparation and implementation of the resettlement plan will be identified and in place prior to the commencement of the process; this will include the provision of adequate human resources for supervision, consultation, and monitoring of land acquisition and rehabilitation activities.

59. WG, which includes representatives of the Government of Darkhan-Uul aimag, LRCUDD, Property Relations Agency and “Darkhan-Us Suvag” agency, will be established and is responsible for identifying the possessors and occupants of affected land and valuating the properties of APs. PIU of the Project is responsible for the update of the RP.

60. As the RP is implemented, the WG ensures resettlement safeguard compliance prior to any land acquisition or resettlement. Overall, however, it PIU, and the LRCUDD who are responsible for adequate supervision of the implementation of project RP. The PIU will be responsible for reporting the progress in implementing the RP to the Ministry of Construction and Urban Development (MCUD). Monitoring of compliance with the RP during implementation is carried out by PIU as well as by an external monitoring agency (EMA). Members of WG for land acquisition are as follows:

- i) Governor of Darkhan-Uul aimag (Chairman)
- ii) Governor of Bag (Vice Chairman)
- iii) Land acquisition specialist of PIU (Member)
- iv) Representative from the Darkhan-Us Suvag (Member)
- v) Representative from the Property Relations Department (Member)
- vi) Representative from LRCUDD of Darkhan-Uul aimag
- vii) Representatives of the APs (Member)
- viii) Representative from a CBO or NGO registered by the government (Member), if available.

61. The main activities of the WG include as following:
Participation in the public consultation meetings.

Timely follow up of grievances according to grievance redress mechanism

Information to and updating of APs on the implementation schedule and other LAR related activities requiring AP participation.

Assistance to DPs in preparing all the necessary documents pertaining to the preparation of contractual agreements and payment of compensation, i.e. licenses of possession or ownership and transfer agreements for land.

Information to APs about the schedule of payments, relocation arrangements, if any, and the commencement of civil works once the compensation and entitlement estimates have been completed for each AP.

Validation of the inventory of affected assets, and negotiation of contractual agreements with the affected households.

- Information of the APs about the date, venue, and time of the payment of agreed property transfer prices and other compensation or entitlements after negotiation and conclusion of notarized agreements.
- Provision of an updated land management map prepared by the city or aimag Land Administration Department indicating all lands that are eligible for ownership to APs to be relocated and assist the process of allocation of land ownership to these APs.
- The Aimag and Soum Governors will review and resolve the applications for land allocation within 3 months, as specified by law, and issue orders allocating lands to the APs.
- Facilitation of the process of consolidation, review, approval and allocation of compensation for the project's APs by the Aimag land administration and governor, as well as the MCUD.

H. COMPENSATION AND REHABILITATION STRATEGY

62. This section presents the compensation standards for each type of loss as well as transaction and relocation costs. It also presents the rehabilitation strategy regarding household that may be vulnerable.
63. All affected assets will be compensated at replacement cost based on market value for comparable assets estimated by the valuation team including resettlement specialist, valuation specialists of PRA and LRCUDD of Darkhan-Uul aimag and representative of affected entities, and agreed with affected persons. The PIU will be responsible for follow-up and facilitation of the processes for estimation of the replacement values for land and non-land assets and losses.⁷
64. Estimated basis of compensation negotiation for key items are presented below. Rates are based on information provided by the land department and affected entities. Values will be reviewed and finalized during RP finalization based on replacement costs estimated through assessment and market value surveys of comparable assets conducted by the valuation team.
- Land: it is currently estimated that land will be compensated for at an average rate of USD 6.1 (MNT 10,500) per m².
 - Entering stairs of AP-01 and AP-02 will be fully dismantled and rebuilt. Unit costs for the stairs will be at the rate of USD 643.45 (MNT 1, 109.236) per m² according to the Cabinet Resolution 336 dated 2010 on unit costs for buildings.
 - Iron fence: Iron fences of 3 affected entities will be dismantled and rebuilt. During replacement the foundations of fences will be destroyed. Therefore, all foundations and some parts of dated fences will be renewed. In review of inflation, the valuation made based on valuations provided by the affected entities. It is currently estimated that iron fences of AP-03 and AP-04 will be compensated for at a rate of USD 45, 9 (MNT 79,200) per 1m as while for the fence of AP-05 will be compensated at the rate of USD 116 (MNT 200,000) per 1m.

⁷ In case of disagreements over the compensation rates during the negotiation process with APs, the PIU will be able to engage an independent private valuation specialist and re-assess the compensation rates offered to the APs and disclose the results to the APs.

- A speed bump will be relocated within the fence it is currently on. Compensation for this is currently estimated at a rate of USD 87 (MNT 150,000).
- Iron gates: 2 iron gates that need to be removed will be compensated at the rate of USD 116 (MNT 200,000) each.
- An electronic advertisement board will be relocated and compensation for relocation will include costs for labor and transportation. Compensation will be at the rate of USD 2900.4 (MNT5, 000,000).
- Businesses loss will be compensated for through short term financial compensation equivalent to the net profit after tax for the 7 days interruption of business.
- Total of 16 trees will be removed and relocated on an appropriate location and will be compensated at the rate of USD 29 (MNT 50,000) each. For the biggest 8 trees that require a vehicle to move, compensation for transport cost will be allocated amount of USD 290 (MNT 500,000).
- Transaction costs will be covered by the project. This includes any fees for notary services, preparation of cadastral maps, property rights registration and service fees. Total of USD 200.1 (MNT 345,000) has to be allocated for the project. This will be reevaluated following the DMS.

65. GOD will ensure that no physical or economic displacement will occur until compensation at full replacement cost and other entitlements have been provided to each affected person and a comprehensive income and livelihood rehabilitation program, supported by an adequate budget, is in place to help affected persons to improve, or at least restore, their incomes and livelihoods.

I. RESETTLEMENT BUDGET

66. Table 8 presents the budget for LAR of the project based on the compensation strategy discussed in Section H. It provides the unit rates, the number of units affected and the compensation, costs for relocation and transaction. The contingency cost, at 12% of total compensation and administration, is intended to cover unanticipated impacts and costs arising during RP implementation. Costs for compensation, transaction and relocation for each AP are covered in the Project cost. Costs for monitoring has been included in the budget.

Table 8: Project Budget, November 2013

Asset Type	Unit	Unit Rate		Units Identified	Cost Estimate	
		MNT	USD		MNT	USD
1. Land						
Land	m²	10,500	6.1	2711.1m2	28,466,550	16,513
2. Structures						
Entrance ways	m²	1,109,236	643.4	8m2	8,873,888	5,147.6
Iron fence	m	79,200	45.9	63m	4,989,600	2,894.4
Iron fence	m	200,000	116	40m	8,000,000	4,640.6
Speed bump	item	150,000	87	1	150,000	87
Iron gates	item	200,000	116	2 pieces	400,000	232
3. Temporary Business Disruption/Business Losses						
Business loss (1)	Days	80,000	46.4	7 days	560,000	324.8
Business loss (2)	Days	240,000	139.2	7 days/ 6 persons	1,680,000	974.5

4. Relocation Costs						
Advertisement board	item	5,000,000	2900.4	1 piece	5,000,000	2900.4
Trees	Item	50,000	29	16 piece	800,000	464
Transport for trees	item	500,000	290	1 piece	500,000	290
5. Transaction Costs						
Notary fees (contracts MNT 1 to 10 million)	Lump sum	10,000	6	5.8	60,000	34.8
Notary fees (contracts MNT 10 and 25 million)	Lump sum	25,000	2	14.5	50,000	29
Cadastral map survey	Lump sum	35,000	20.3	5	175,000	101.5
Service fees including property registration rights	Lump sum	12,500	7.2	5	62,500	36.25
Sub-total Compensation						34,670.1
Administration (10% of total compensation)						3,467
Contingencies (12% of total compensation and administration)						4,576.5
External Monitoring (7.5% of Comp. Total)						2,600.3
Total						45,313.9

67. The PIU will work with the GOD, LRCUDD, and other state agencies to manage the process of formal contractual agreements with affected entities and disbursement of compensations. After having concluded contractual agreements related to the transfer of the affected assets from the affected entities to the government, the LRCUDD will consolidate all financial commitments of the contracts and refer these to the GOD. The GOD will then initiate the transfer of funds to the PIU. The PIU, with the assistance from a resettlement specialist will be responsible for delivery of entitlements to affected entities.
68. Payment of at least 50% of compensation will be made within one month of the time of conclusion of contractual agreements. The remaining 50 percent will be paid at the time of vacating of the affected assets. Disbursement of compensations and entitlements will be carried out in the Bag Governors' office. No land will be acquired by the government or handed over to the PIU for commencing construction works prior to implementation of the approved final Resettlement Plan, and full payment of due compensation and provision of other resettlement entitlements to the affected entity.

J. MONITORING AND EVALUATION

69. The implementation of this LARP will be monitored both internally and externally. The PMU will be responsible for overall internal monitoring. External monitoring will be carried out by an External Monitoring Agency (EMA) which may be a local consulting firm or NGO, or a qualified individual.
70. The key objective of LARP monitoring and evaluation is to ascertain the effectiveness of the process of LAR planning (including data collection, review, and verification and final LARP preparation by the respective consultants) and LARP implementation (including the delivery of compensation and allowances, consultation and grievance redress).

Internal Monitoring

71. The PIU will conduct internal monitoring and supervision of RP implementation and submit monthly reports to the GOD and WG. The PIU will also include the results of internal monitoring in its

quarterly reports to the ADB.⁸ These reports will also serve as input into the subproject's mid-term review, which will have a focus on the progress of RP implementation. Internal monitoring reports will also inform the completion audit that will be conducted upon completion of the subproject's land acquisition and resettlement activities. The PIU will prepare this resettlement completion report for submission to the ADB.

72. The objectives of internal monitoring will be to ensure: (i) proper execution of the responsibilities of key stakeholders; (ii) protection of the rights of affected entities under Mongolian laws, the ADB Safeguard Requirements, and this RP; (iii) adequate and prompt payment of compensation; and (iii) timely grievance redress. Internal monitoring indicators will include, but not will be limited to (i) status of land acquisition and payment on land compensation; (ii) payment of compensation for affected structures and other assets; (iii) relocation of APs (iv) resolution of grievances;
73. Internal monitoring will cover 100% of the APs identified during the impact assessment surveys. Monitoring data will be collected through the structured interview questionnaires.
74. In addition, the Audit Department of the concerned Aimag Government will independently audit and monitor the agencies involved in the land acquisition and resettlement process, based on relevant laws and regulations. The PIU will periodically review audits, and report any irregularities to the ADB, to allow for the early identification and resolution of problems encountered.

External Monitoring

75. External monitoring and evaluation will be conducted to provide independent concurrent and ex-post evaluation of the project's land acquisition and resettlement activities. For this project the PIU will be responsible for engaging an EMA, which will investigate and assess RP implementation and report findings semi-annually to the WG and the ADB. The resettlement specialist of the project implementation consultant's team will review and discuss the external monitoring design with the EMA.
76. The external monitoring process will include the following: (i) review and verification of the internal monitoring reports of the PIU; (ii) identification and selection of impact indicators; (iii) impact assessment (e.g. restoration of incomes and living conditions); (iv) consultation with APs; (v) assessment of compliance with local laws, the ADB's IR policy requirements and the RP; (vi) recommendation of land acquisition process modification and adaptation measures; (vii) lessons learned for future resettlement policy formulation and planning; (viii) effectiveness of the GRM; and (ix) all data collection and analysis will be disaggregated by gender.
77. External monitoring includes two types of activities: a) short term monitoring and evaluation of RP implementation and compensation delivery and b) a long-term evaluation of the rehabilitation effects of the RP program.
78. Short-term monitoring will be carried out in parallel with the implementation of the LARP and will entail extensive field visits and communications with APs and the PIU. This task will result in a semi-annual (compliance review reports) report indicating whether the compensation program has been carried out according to the provisions of the RP, the LARF, Mongolia's legislation and ADB's safeguard requirements, as well as to the satisfaction of the APs. The report will be communicated to EA and ADB and will be a condition for the commencement of civil work.
79. Among the key indicators will be the following.

Economic status of affected entities, including employment, income and household assets.

⁸ To report project progress, implementation issues, and the status of previously identified problems.

Status of vulnerable persons, in terms of food security, household demographics, livelihoods and health.

Degree of support for and post land acquisition status of affected vulnerable and severely affected households.

Perceptions of affected entities regarding the implementation of the land acquisition process.

Participation and involvement of affected entities in RP implementation.

Effectiveness and fairness of valuation, compensation, assessment and disbursement measures.

Implementation and effectiveness of income restoration measures.

Effectiveness and fairness of GRMs.

Level of satisfaction among affected entities in the post-resettlement period.

Adequacy of resettlement funds and results of financial audits.

Performance of project implementing agencies (PIU, LRCUDD).

80. The EMA will carry out post-implementation evaluation on the basis of the socio-economic baseline surveys 1 and 2 years after the completion of land acquisition activities in Darkhan city to ascertain whether the project was able to implement the objectives and provisions of the RP. If the objectives have not been achieved, the EMA will recommend remedial measures for follow up by the PIU. Both quantitative and qualitative survey methods can be implied for evaluation of post resettlement situation of the APs. Post-implementation evaluation must (i) assess the effectiveness, impact and sustainability of resettlement measures, (ii) learn strategic lessons for future policy formulation and planning. Over a three year period, the EMA will submit regular reports to the PIU and ADB; with a total of five inputs (baseline, 6 months, 12 months, 24 months and 36 months). TOR for EMA is shown in Annex 4.



K. IMPLEMENTATION SHCEDULE



81. The final implementation schedule for the project will be developed in coordination with the PIU once it has been established. The next step in the development of project activities in Darkhan city of Darkhan-Uul aimag to finalize the engineering and other technical designs, so that the planning of project activities can move forward. Table 9 below presents an indicative list of actions to be carried out prior to the proposed commencement of civil works in March 2015.

Table 9: Implementation schedule

Activities	2013					2014										
	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11
Preparation of Draft RP																
Preliminary infrastructure designs																
Identification of LAR scope and initial survey of Project impacts																
RP drafting																
Review by ADB																
RP Update																
Establishment of WG																
Establishment of PIU																
Detailed design																
Notification of APs and of cut-off date																
Land and property measurements and valuation surveys																
Census and socio-economic survey, and identification of vulnerable persons/HHs																
AP consultation & disclosure of draft final RP																
Preparation of draft final RP																
Revision of draft final RP																
AP consultation: disclosure of revised draft RP																
ADB review and approval																
Endorsement by MUB																
Disclosure of approved RP on ADB website and in AP community																
RP Implementation																
Funding for LAR compensation																
Conclusion of contractual agreements																
Disbursement of compensation																
Acquisition of land and other assets																>
Commencement of civil works																>
Internal Monitoring																>
External monitoring and evaluation																>

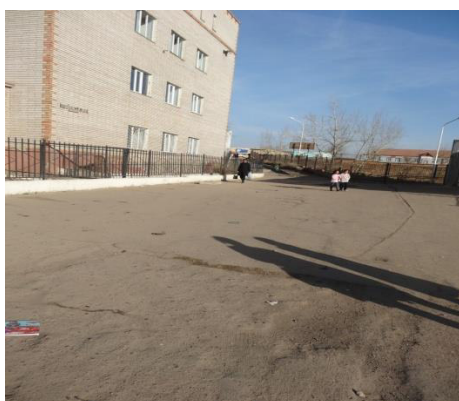
e. **Annex 1: Asset inventory**

AP-01							
<i>Picture 1: Part of unlicensed land to be acquired</i>				<i>Picture 2: Entering gate to be moved</i>			
							
Affected assets and replacement/compensation costs							
ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-01	Entrance way	Entering stairs	Dismantle and rebuild	m²	3	643.4	1930.4
	Total						1930.4

AP-02:							
<i>Picture 1: Part of unlicensed land to be acquired</i>				<i>Picture 2: Entering gate to be moved</i>			
							
Affected assets and replacement/compensation costs							
ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-02	Entrance way	Stairs	Dismantle and rebuild	m2	5	643.4	3,217.2
Total							3,217.2

AP-03:*Picture 1: Part of possessed land to be acquired**Picture 2: Iron fence, speed bump and gate to be moved***Affected assets and replacement/compensation costs**

ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-03	Land	Possessed land	Acquire land partially	m2	72	6.09	438.5
	Iron fence	Fence with concrete foundation and wooden bench placed on the fence foundation	Dismantle and rebuild within the boundary	m	30	45.9	1,378.27
	Iron gate	Movable gate	Remove within the boundary	item	1	116	116
	Speed bump	Movable	Remove within the boundary	item	1	87	87
	Total						2,019.8

AP-04*Picture 1: Part of possessed land to be acquired**Picture 2: Iron fence and gate to be moved***Affected assets and replacement/compensation costs**

ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-04	Land	Possessed land	Acquire land partially	m ²	121.6	6.09	740.6

	Iron fence	Fence with concrete foundation	Dismantle and rebuild within the boundary	m	33	45.9	1,516.1
	Iron gate	Movable gate	Remove within the boundary	item	1	116	116
	Total						2,372.7

AP-05

Picture 1: Part of possessed land to be acquired



Picture 2: Iron fence with concrete foundation to be rebuild



Affected assets and replacement/compensation costs

ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-05	Land	Possessed land	Acquire land partially	m ²	200	6.09	1,218.2
	Iron fence	Fence with concrete foundation	Dismantle and rebuild within the boundary	m	40	116	4,640.7
	Trees	Trees	Remove within the boundary	item	8	29	232
	Total						6,090.9

AP-06

Picture 1: Advertisement board to be replaced



The board locates within the boundary of AP-05.



No land will be acquired.

Affected assets and replacement/compensation costs

ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-06	Advertisement board	Electric board	Remove	item	1	2,900	2,900.4
Total							2,900.4

AP-07:

Picture 1: Part of possessed land to be acquired



This land has been allocated to Montech company in 2011. Since then no structures have been built.

Affected assets and replacement/compensation costs

ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-07	Land	Possessed land	Acquire land partially	m ²	1997.5	6.09	12,166.5
Total							12,166.5

AP-08:

Picture 1: Part of possessed land to be acquired



This land has been allocated to 'Nogoon burd' LLC in 2011 and no structure has been built yet.

Affected assets and replacement/compensation costs

ID	Asset type	Description and characteristics	Activity	Unit	Q'ty	Unit rate (USD)	Cost (USD)
AP-08	Land	Possessed land	Acquire land partially	m ²	320	6.09	1,949
Total							1,949.1

f. Annex 2. Registration page of meeting

БҮРТГЭЛИЙН ХУУДАС

Дархан сум

2013.10.30

Уулзалт хийсэн газар: "Хөдөлмөр чөлөөлдөг" н
байрны 64-а

№	Нөлөөлөлд өртөгчийн нэр	Хаяг	Утас	Гарын үсэг
1	Мессинг Чамбалдор	Бр бай.	95868670	Мессинг
2	Сүхэн Бат Дархан сум	Бр бай	99084358	Сүхэн
3	Хөдөлмөрч	5-бай	95154288	Хөдөлмөрч
4	М. Ганз Итөв	✓	99032024	М. Ганз
5	Орломжигдор	Ч.сүхэн	99575202	Орломжигдор
6				
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g. Annex 3. Grievance Action Form (GAF)

The Project welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by checking box requesting CONFIDENTIALITY below.

☐ Request for Confidentiality

CATEGORY OF GRIEVANCE

☐ Legal ☐ Administrative ☐ Social ☐ Financial ☐ Technical ☐ Environment ☐ Other

Date	Place of registration	Project site:
Name (if not confidential)		
Home address		
Bag		
Phone number/email:		
Description of grievance/comment or suggestion:		
If includes attachment/note/letter, please tick here: <input type="checkbox"/>		

FOR OFFICIAL USE ONLY

Registered by: (Name and signature of officer registering grievance)
Mode of communication: Note/Letter E-mail Verbal/Telephonic
Reviewed by: (Names/Positions of Official(s) reviewing grievance)
Action Taken:
Whether Action Taken Disclosed: <input type="checkbox"/> Yes <input type="checkbox"/> No
Means of Disclosure:

h. Annex 4. TOR for External Monitor

The M&E services will be required during a period of 3 years. During implementation of the RP, external monitoring by the Monitor will be undertaken every six (6) months at project site for an input

of five (5) days, totaling 25 days for 5 inputs. Two annual evaluations will be conducted for the project after completion of RP implementation. The timing of these investigations may be staggered depending upon the progress of project. The total input of the Monitor will amount to 25 days of domestic consultancy.

Monitoring Schedule

Inputs / Tasks	Timing	Report Due
1. Baseline Surveys	Start of RP implementation	
2. Monitoring of Implementation	Month 7 of RP implementation	
3. Monitoring of Implementation	Month 13 of RP implementation	Within 3 months of start of each input
4. Evaluation	1 year after completion of RP implementation	
5. Evaluation	2 years after completion of RP implementation	

Budget for the Monitor is 7.5% of compensation amount which cost 2,600.\$

(See budget)

The Monitor will provide ADB and the EA with monitoring reports every six months during the implementation of the RP. After the EA prepares their resettlement completion report, the Monitor will conduct annual evaluations for two years. Costs for the external monitoring and evaluation will be covered by the the state resources.

Appendix V: HOUSEHOLD SOCIO-ECONOMIC SURVEY RESULTS

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SUMMARY

The survey, which covered the apartment and ger area households of Darkhan city, intends to collect information on socio economic status of project target households and their members, current situation and customers' satisfaction of the water supply and waste water treatment service, willingness and ability to pay for improved waste water treatment service. Total 200 households, of which 100 households each from ger area and apartment area were covered in the household socio-economic survey conducted.

Poverty rate: The minimum standard of living in Darkhan-Uul aimag was pegged at 117,500 tugrugs (abided 1 April 2012) per capita per month⁹. With the average size of the household at 4, the minimum standard of living (MSL) per household on a monthly basis is 470,000 tugrugs or 5,640,000 per year. Using this as basis for poverty threshold, the households in the Darkhan city may be categorized into poor and non-poor, where those households with income falling below the threshold are considered poor. The results denote that the poverty incidence in the Darkhan city is 26.5%, where the poor earn an average monthly income of 3,642,642 tugrugs, way below the MSL in Darkhan-Uul aimag. For ger area households, poverty incidence is 44.0%, while it is 9.0% for apartment area households.

Residents don't have knowledge and information about the water supply and sanitation service of the Darkhan city and have not realized there are problems. One quarter of Darkhan city resident don't know what organization provide water supply and sanitation service to them. Almost half of ger area residents don't know what organization provide water supply and sanitation service to them. Also apartment residents don't realize that sanitation service in Darkhan city is problematic as other stakeholders expected such as Darkhan Us Suvag JSC, Apartment Owners Association and City Mayor's Office. Residents of Darkhan city named poor sanitation service in eighth place among 12 selected environmental and social infrastructure issues and 61.0 percent of respondents answered this issue is existed in their living area. 70.0 percent of ger area respondents said this issue is existed in their living area, while 52.0 percent of apartment residents said this issue is existed in their living area. No one of ger area residents is satisfied with current sanitation situation. 80.0 percent of apartment area residents satisfied with current sanitation situation.

Women are mainly responsible for sanitation facilities related issues of households. Among households 53 percent of family member, who are mainly responsible for sanitation issues of household are women according to the result of the household socio economic survey.

Residents worry about the environmental issues, especially pollution of the Kharaa River and they want to do something to solve this problem. Residents of Darkhan city named pollution of the Kharaa River in the second place after air pollution among selected environmental and social infrastructure issues and 83.3 percent of respondents answered this issue is existed in their living area. Six out of ten respondents or 64.1 percent of respondents supported re-use of grey water. 40.8 percent of respondents mentioned that we have to re-use treated grey water for toilet flushing. Darkhan city residents expressed that they can pay in average 14,036 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment which WWTP of the Darkhan city allows to re-use water for industrial and household purposes. Most repeated amount (mode) was 10,000 MNT. Residents of Darkhan city expressed that they can pay in average 15,122 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment of public recreational facility in the Kharaa River for bathing or other recreational activities, if they have to pay money building it. Most repeated amount (mode) was 10,000 MNT.

Ger area households want have improved sanitation service. The mean WTPs for additional taxes for improved sanitation service were calculated at 19,844 MNT for all households and 19,956 MNT and 19,764 MNT for ger area households and apartment area households, respectively. Ger area households really want have improved sanitation service and condition and they are willing to pay more. It is also shown that apartment area households don't aware that sanitation service is not problematic in Darkhan city.

Mean WTP for improved sanitation service among apartment households. According to WTP analysis or Probit analysis mean WTP for waste water treatment service per cube meter was estimated in 1,076 MNT.

⁹ <http://www.infomongolia.com/ct/ci/3743/56/MinimumStandardofLivingwasrenewed>.

1. INTRODUCTION

1.1 Rationale and Objectives of the Survey

The Asian Development Bank (ADB) sector Loan 2301, approved on 19 December 2006, has been financing water supply, wastewater treatment, small loans for utility connection, and other urban infrastructure and capacity development for Mongolian cities and their *ger* areas in five provinces. The Government of Mongolia through its Ministry of Economic Development, and Ministry of Construction and Urban Development requested from ADB additional financing to Loan 2301 of \$20 million to support wastewater treatment and wastewater management improvement for Darkhan city. The additional financing is intended to support the technical rehabilitation and expansion of the existing Darkhan wastewater treatment plant (WWTP) if found appropriate during the assessment, or if deemed necessary, the construction of a new WWTP, and potential additional sub-projects in the areas of water supply and sanitation in Darkhan city. The additional financing and its project preparatory technical assistance (TA) activity are aligned with the government's 2012–2016 Action Program, which includes objectives to improve public utility services and networks in provincial centers and significant expansion of industrial development in Darkhan city. The activity is aligned with ADB's country partnership strategy for Mongolia, 2012–2016, which includes the support for water supply, and other municipal infrastructure and services. The project is performing well and is in compliance with ADB's eligibility criteria for additional financing. The expected project impact of the additional financing will be sustainable urban environment in Darkhan city and the Kharaa River Basin. The outcome will be improved wastewater treatment and management for domestic and industrial users in Darkhan city. Project outputs will be (i) technically modernized and expanded, or newly-constructed WWTP in Darkhan, and (ii) institutional capacity strengthened and wastewater management operation improved. The total number of the project's beneficiaries is expected to exceed 130,000 people, as well as industries and businesses in Darkhan.

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment. Consequently the rehabilitation and expansion of the existing WWTP or the development of a new WWTP, meeting national standards and international best practices, is urgently needed. Currently the city's wastewater is collected through 97 kilometers of sewerage pipes, and treated in the WWTP, which started operation in 1965 with a design capacity of 50,000 cubic meters/day, treating both, industrial and domestic wastewater. Current wastewater inflow and treatment is approximately 21,200 cubic meters/day, with the WWTP operating inefficiently and below capacity. Dilapidated and dated equipment causes frequent and significant overflows polluting the Kharaa river basin with negative environmental and health impacts.

Purpose of the household socio-economic survey is determine socio economic status of project target households and their members, current situation and customers' satisfaction of the water supply and waste water treatment service, willingness and ability to pay for improved waste water treatment service. Main beneficiaries of the project are households living in apartments of the Darkhan city.

Objectives of the Survey

The objective of the assignment is to:

- Collect and assess information on basic household data present in the apartment and ger areas of Darkhan city;
- Access to and existing conditions of water and sanitation service and satisfaction on current service; and
- Willingness and ability to pay for improved services on sanitation service.

2. ORGANIZATION OF THE SURVEY

2.1 Sampling Design of the Survey

Target population of the survey should be all households live Darkhan city. According to the Statistical Division of Darkhan-Uul aimag total 23,245 households live in Darkhan city as end of 2013 (Table 1). **Those households will be target units of our survey.**

Table 3: Total number of households of Darkhan city, by type of dwelling, as end of 2013

Type of dwelling	Total HHs
Apartment	12 153
Ger	4 491
Improved separate house	79
Simple separate house	5 958
Dormitory	482
Other type of dwelling	82
Total	23 245

Source: Statistical Division of Darkhan-Uul aimag, <http://web.nso.mn/portal/indexc.php?v=24>

Sample size: To meet survey objective, we involved households living in Darkhan city in the survey and scope of survey will cover 23 245 households. Sanitation situation will depend on dwelling type of households whether they live in ger area or apartment area. 52.3% percent of total households of Darkhan city (12 153 households) live in apartment. Based on above mentioned statistical data and considerations, we determined number of households for the survey as following. Sample size of survey (95% confidence interval, 7% confidence limit)

$$n = \frac{Z^2 p(1-p)}{e^2} \quad n = \frac{(1.96)^2 \times (0.52)(1-0.52)}{(0.07)^2}$$

Here: n – sample size, Z – Z score that corresponds to a confidence interval, p – the proportion of the attribute expressed in decimal, e – percent confidence level in decimal

$$n = \frac{0.9584}{0.0049} \quad n = 200$$

Total 200 units (households) will be selected for the survey with 95% confidence interval and 7% confidence limit. Survey results or indicators will be weighted i.e. we will estimate parameters of population using estimators. 100 household will be selected from ger area and remaining 100 will be selected from apartment area.

PS: There are two ways to determine sample size: approach to use standard deviation of the population and approach to use probability. In our case we don't have information about average water consumption and its standard deviation, we only have information what percentage of households live in apartments and what percentage of households live in other type of dwelling.

For the sampling frame: For the sampling design we combined list frame together with area based frame. Area based sampling frame is a frame which cover the entire territory, boundaries are well delineated, and units (building blocks) are mapped. The Google map and other information sources allow to us construct area based sampling frame by each baghs with apartments. All apartments are mapped in the picture.

Using area based frame has following advantages:

- Easy to construct when map is available and boundaries are clear;
- Save time;
- There are no problems such as: selecting no real unit, units not in the frame, selected units moved;

From the Google Earth map we will construct area based frame (map of apartments). We used the *Google Earth* map, *Gogoubmap*, *Autocut-2013* and *Photoshop-CS6*. Size, distribution and shape of the apartment sections in each baghs are different. If we show whole apartment area map of Darkhan city, then this map will be huge and resolution of the map will be not so good to see. So we divided apartment areas by well-known locations such as “Kheetei” and “Tumur zam” etc. Each building block were numbered and then each households or doors were numbered by combination of bagh number, apartment number, entrance number, floor number and door number (ID numbers).

Figure 1: Example of the area based sampling frame



Household selection: Each door or household in the apartment were be numbered ID or unique number. From the list of doors or households we selected 100 doors or households through the Sample Random Sampling (SRS) in MS-Excel sheet.

For the replacement strategy: For the replacement strategy we have to determine clearly what case we should replace selected households. There were general rules such as interviewers should visit selected household at least three different times if they were nobody in home etc. According to the ADB Technical Note 23, we were proposing replacement strategy which no responding preselected households replaced with one of five neighbours using a counterclockwise rule.

2.2 Survey Instrument Design

Social expert was responsible for developing and testing the survey questionnaire. After developed draft questionnaire checked the internal consistencies of the questionnaire and pre-test in order to refine the questionnaire based on following points:

1. All the questions are understandable and applicable and less problematic for target group.
2. To reduce respondent burden we have to reduce number of questions as much as possible through evaluating importance of each questions.
3. Design questionnaires format in simpler and in a way to have less error during data entry and processing.
4. To simplify data processing we should use coding as much as possible in the questionnaire.
5. Use of internationally and nationally accepted definitions and concepts in the questionnaire.
6. To use proper bidding interval for target households.

We designed survey questionnaire to include questions on willingness to pay (WTP) as well as knowledge, attitudes, and practice (KAP)s related to sanitation based on “ADB ERD Technical Note Series 23: Good Practices for Estimating Reliable Willingness-to-Pay Values in the Water Supply and Sanitation” and our previous experiences on KAP surveys.

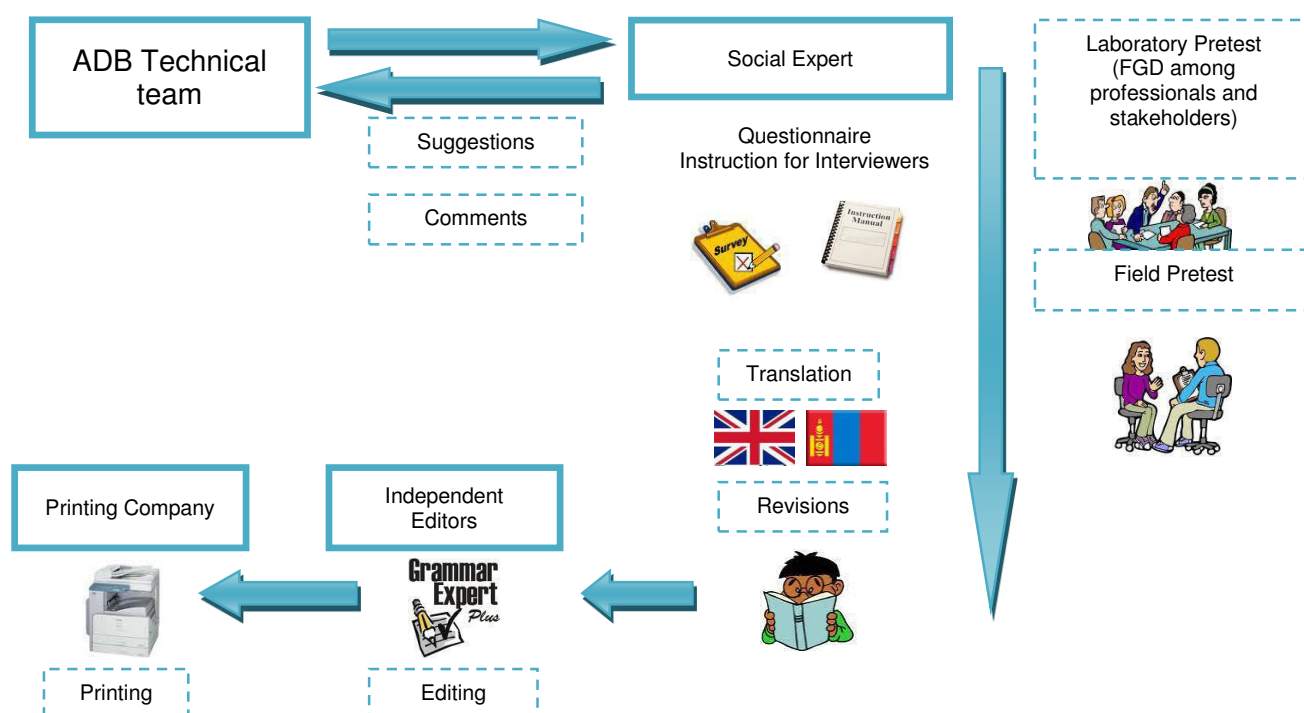
Survey questionnaire has following sections:

1. General section: address of household, interviewer's and household head's name and code, date of interview etc.
2. Household roster: name of household member, relation to household head, gender, age, marital status, educational background, employment status and health condition of household members etc.
3. Dwelling information: dwelling type, number of rooms, size of living and total area of apartment, ownership of dwelling and khashaa plot etc.
4. Water supply services and sanitation situation: ways to use drinking water (directly from tap, whether installed filter in the tap or separate tank with filter etc.), water consumption per day, evaluation of water quality, satisfaction on current water supply and sanitation service etc.
5. Priority of social and environmental issues (could be optional).
6. Community awareness and participation (could be optional).
7. Household expenditures: household expenditure for items such as electricity, water consumption for past month and past 12 months.
8. Household income: household expenditure for past month and past 12 months, by sources.
9. Willingness to Pay for Improved Sanitation Services: Additional tax and service charge for improved waste water treatment service etc.

After we developed draft questionnaire we conducted field pre-testing of survey instruments. In the field-pretesting we tested survey questionnaire and data collection methodologies including how to find out respondents and conduct interview.

Questionnaire design was implemented by following schemes (Figure 2).

Figure 2: Instrument Designing Scheme



After pretests, Social Expert did revisions based on the result of the pretests. Then Social Expert introduced revised version of questionnaires to technical team and ADB Technical Team. After ADB Technical Team agreed with draft questionnaires, we printed out all questionnaires with required numbers. Before printing we hired independent editors for editing grammatical and other errors.

For the questionnaire design we followed related sub clauses of ISO 20252:2012, including 4.4.1 (Conception and design of questionnaires), 4.4.2 (Translation of questionnaires and discussion guides or any other project-related documents) and 4.4.3 (Pre-testing questionnaires).

2.3 Survey Administration

2.3.1 Field Interviewers and Supervisors Training

Social expert selected 6 candidates for interviewers by suggestions of Statistical Division of Darkhan-Uul aimag and organize them training in cooperation with Statistical Division of Darkhan-Uul aimag. We conducted training for the interviewers in 22nd of January, 2014. After the training, we examined participants and make a list of 4 participants who can take highest points in the exam.

2.3.2 Data collection method

Data collection of the survey was done by Face-to-Face Interview method at the target households by using paper based questionnaire (PAPI) method and carried out by trained interviewers. We selected people who are familiar with the household survey and have experience to participate household survey at least twice before and organized training for them. Purpose of the survey, assignments of interviewers, in details Interviewers' manual and explanation of the questionnaire were explained in the training. Data collection of the survey conducted from 22 of January to 27 of January, 2014.

2.3.3 Conducting data quality control in the field

Data quality checks of the survey in the field had done by following five stages:

1. First phase data quality monitoring;
2. Data quality checks which would be done by interviewers themselves;
3. Home office check in the received questionnaires during the data collection;

After the main training, all selected interviewers worked in the field during a half day. They located and collected data from respondents. Then social expert received all completed surveys and checked all of them manually. Then he prepared recommendations to all interviewers based on manual checking and organize meeting with them.

All interviewers submitted their filled questionnaires end of their workday to assistant researcher in Statistical Division of Darkhan-Uul aimag and she checked all filled questionnaires immediately. If there is no error in the filled questionnaires assistant researcher received them.

2.4 Data Entry and Processing

Data entry form was created using Data entry tools of latest updated versions of CSPro software program developed by the US Census Bureau. The US Census and Survey Processing System is a public-domain software package for entering, editing, tabulating and mapping census and survey data.

Data operators were responsible for data entry in computer and submit to the data editors. All errors occurred during data entry and verification was documented and archived.

Assistant researcher checked the errors in the database using Batch editors and prepared list of errors and submitted it to data editors. Data operators did data editing based error list using CSPro Data Entry tool. Data processing, including tabulation, validity tests and estimation of mean WTP was done by SPSS 20 and MS-Excel worksheet.

3. THE HOUSEHOLD SURVEY RESULTS

3.1 Households Socio Economic Profiles

Total 200 households, of which 100 households each from ger area and apartment area were covered in the household socio-economic survey conducted. 40.5 percent of respondents were household heads himself/herself and 41.0 percent of respondents were household spouses. It means that most percentage of the respondents was household heads and spouses, people who know household situation very well were interviewed in the survey.

The average age of the respondents is 40 and household heads' average age is 46. Majority of the respondents were female (63%), while 79% of households are male-headed households. And average household size is 4 (Please see Table 2).

Table 4: Respondents' and household indicators

Indicators		Total
Respondents' average age mean		40
Respondents' gender percentage	Male	37.0%
	Female	63.0%
Household heads' average age mean		46
Household heads' gender percentage	Male	79.0%
	Female	21.0%
Average household size, mean		4

Majority of education level of household heads are completed secondary level (44.0%), then secondary level (12.0%), and then vocational (10.5). 64.0 percent of household heads are employed (of which 40.0 percent of them are employed by labor contract and 24.0 percent of them are self-employed). Other 37.0 percent of household heads are not employed due to being students, retired and other reasons. Engaged in work for the household head, 54.0% are in permanent employment. Household head is not employed to identify the causes of seasonal work, no job and house job.

93 children or 13.2 percent of the household surveyed have children 2-6 years old. 23.7 percent of them are going to kindergarten.

One out of every 5 people in the survey has been sick for the last 12 months. They mainly cough / colds (66.7%), allergies (4.3%) are infected. 4 out of every 5 people took medicine and other treatment themselves.

Table 5: Number household members has been sick for last 12 months

Disease/s	All household members	
	Number	Percent
Diarrhea,	3	2.1%
Typhoid	4	2.8%
Allergy	6	4.3%
Cough/colds	94	66.7%
Other	34	24.1%
Total	141	100.0%

3.2 Dwelling and plot

In the household socio-economic survey total 200 households interviewed. Half of them or 100 households were from ger areas and another 100 households were from apartment areas. Households selected from ger area were households living in ger and in simple detached house, respectively 40:60. Households living in ger live gers with 5 segment walls in average.

For households in apartment, 94.0% of households are owner of the dwelling. 4 households were renter of the apartment and 2 households live in not privatized apartment. In Darkhan city there are some apartments still in ownership of Russian Federation. For ger area household living in simple detached houses all of them are owner of the dwelling.

Apartments and simple detached houses were 2 rooms and 48.73 square meters in average. 51.3% of total households purchased the dwelling and 22.4% built themselves (Table 4).

Table 6: Indicators of the household dwellings, by locations

Indicators		Total*		Ger area		Apartment area	
		N	%	N	%	N	%
Ownership status	Owner of the dwelling	154	96.3%	60	100.0%	94	94.0%
	Renter of the dwelling	4	2.5%	0	0.0%	4	4.0%
	Other /Not privatized/	2	1.3%	0	0.0%	2	2.0%
Number of room in the dwelling /average/		2		2		2	
Size of square this dwelling /m2/-average		48.73		50.17		47.87	
Year of built or purchased dwelling	Mean	2003		1999		2005	
	Minimum	1962		1962		1987	
	Maximum	2013		2012		2013	
Acquired way	Privatized	18	11.5%	1	1.7%	17	17.7%
	Inherited	14	9.0%	6	10.0%	8	8.3%
	Exchanged/swapped	3	1.9%		0.0%	3	3.1%
	Purchased	80	51.3%	18	30.0%	62	64.6%
	Built themselves	35	22.4%	35	58.3%		0.0%
	Others, please specify	6	3.8%		0.0%	6	6.3%

* For 160 households live in apartment and simple detached houses.

Respondent households have been lived in their location 12 years in average. 69.0% of total households migrated or moved in their current location. 28.3% of them migrated or moved in their current location from other city, aimag and soum. Most of households (93.4%) are willing to continue to live in Darkhan city.

Table 7: Living duration and other related indicators of households, by locations

Indicators		Total		Ger area		Apartment area	
		N	%	N	%	N	%
Year of living in this location	Mean	11.74		12.28		11.20	
	Minimum	1		1		1	
	Maximum	46		45		46	
Migrated/moved in	Yes	138	69.0%	48	48.0%	90	90.0%
	No	62	31.0%	52	52.0%	10	10.0%
Year of migrated/moved in here	Mean	2002		2000		2003	
	Minimum	1984		1984		1987	
	Maximum	2013		2012		2013	
Location migrated/moved from	Other apartment area of this city	50	36.2%	0	0.0%	44	48.9%
	Other ger area of this city	49	35.5%	0	0.0%	23	25.6%
	Other city, aimag and soum	39	28.3%	0	0.0%	23	25.6%
Willing to continue to live in Darkhan city	Yes	183	93.4%	0	0.0%	93	93.0%
	No	13	6.6%	0	0.0%	7	7.0%
Year willing to continue to live in Darkhan city	2-5 years	6	3.0%	1	1.0%	5	5.0%
	10-20 years	3	1.5%	1	1.0%	2	2.0%
	Forever	157	78.5%	82	82.0%	75	75.0%
	Don't know	34	17.0%	16	16.0%	18	18.0%

19.0%-20.0% of hashaas in ger area has 2 and more dwellings and 2 and more households share one khashaa. For 35.0% of khashaas in ger area 5 and more people live in one khashaa plot. There share one pit latrine.

Table 8: Indicators of the khashaa plots

Indicators		Number	Percent
Size of square of khashaa plot (m2)	Mean	558.7	
	Minimum	100.0	
	Maximum	989.0	
Number of dwellings in khashaa	1 dwelling	81	81.0%
	2 dwellings	18	18.0%
	3 dwellings	1	1.0%
Number of households in khashaa	1 household	80	80.0%
	2 households	19	19.0%
	3 households	1	1.0%
Number of person in khashaa	1-4 person	65	65.0%
	5-9 person	32	32.0%
	10 and above	3	3.0%

3.3 Households current condition water supply and sanitation service

3.3.1 Water supply services

Main water supply source of all apartment households is central water supply system: hot and cold water supply system. As for ger area households 69.0% of households answered that main water supply source is tanker trucks delivered water. 25.0% of them said water vending kiosk connected to central pipeline and 6.0% of them said water vending kiosk with truck delivered water.

Ger area households collect water mainly from water vending kiosk with truck delivered water, as well as unprotected well in their khashaa plot. Due to insufficient truck delivery kiosk could not provide water their scheduled time. In case not having water in kiosks households use water from their own or neighbour's unprotected wells for drinking. Households in ger area see that water from unprotected wells is not suitable for drinking, because there are frequent fill up waste water from sewerage pipes, which go through or near to ger area and all households use pit latrine with infiltration layer to the soil. Pit latrines of ger area households are located near to wells about 10-20 meters each others. When they boil water from wells, then white deposits remain in the boiler. Therefore respondents of ger area hope that this will cause diarrheal disease among ger area residents (Source: Note of Focus Group Discussion among representatives of apartment and ger area residents).

As of 2011, there were 135 borehole wells and 372 simple mine wells in territory of Darkhan soum of Darkhan-Uul aimag (Source: Surface Water Census Report of 2011, Environmental Department of Darkhan-Uul aimag). Consideration of Environmental Department of Darkhan-Uul aimag is to decrease use of wells in khashaa plot of ger area, since they influence to decrease of groundwater and headwater of the Kharaa river basin (Source: Note of In-Depth Interview with representative of Environmental Department of Darkhan-Uul aimag).

One quarter of Darkhan city resident don't know what organization provide water supply and sanitation service to them. Almost half of ger area residents don't know what organization provide water supply and sanitation service to them.

Table 9: Percentage of respondents who said know what organization provide water supply and sanitation service, by location

Location	Yes%
In ger area	51.6
In apartment	77.0
Total	73.0

Households of Darkhan city spend 5,976MNT for water per month in average. While ger area households spend 3,058 MNT, apartment households spend 8,282 MNT for water per month in average (Table 8).

Table 10: Monthly expenses for water, by locations and in MNT

Season	Total			Ger area			Apartment		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Spring	5,920	1,100	55,000	3,071	1,100	7,000	8,309	1,200	55,000
Summer	5,843	1,100	55,000	3,015	1,100	6,000	8,152	1,200	55,000
Autumn	5,989	1,200	55,000	3,115	1,200	6,000	8,335	1,200	55,000
Winter	6,151	1,000	55,000	3,030	1,000	6,000	8,331	1,200	55,000

As for apartment households 92.0% of households pay water use charge based on reading of water meter. Another 8.0% of households pay water use charge based on on number of residents.

In total 87.5% of households are satisfied with current water supply service (including fair/normal, good and very good). While 91.0% of ger area households are satisfied with current water supply service, 84.0% of apartment households are satisfied with current water supply service (Table 9).

Table 11: Satisfaction level with current water supply service, by location

	Total		Ger area		Apartment	
	N	%	N	%	N	%
Very bad	2	1.0%	1	1.0%	1	1.0%
Bad	23	11.5%	8	8.0%	15	15.0%
Fair/Normal	81	40.5%	50	50.0%	31	31.0%
Good	90	45.0%	38	38.0%	52	52.0%
Very good	4	2.0%	3	3.0%	1	1.0%
Total	200	100.0%	100	100.0%	100	100.0%

Ger area households suggested installing individual water connection (23.7%), putting up additional kiosks (22.3%), putting up additional private kiosks (19.1%) and improving truck delivery schedule (14.4%) to improve water supply service. Apartment households suggested rehabilitating sewerage and water supply lines (47.3%), installing additional lines (24.8%) and improving water supply Company's service (26.4%) to improve water supply service (Table 10).

Table 12: Suggested ways to improve the water supply service, by location

	Total		Ger area		Apartment	
	N	%	N	%	N	%
Install individual water connection	51	14.8	51	23.7	0	0.0
Put up additional kiosks	48	14.0	48	22.3	0	0.0
Put up additional private kiosks	41	11.9	41	19.1	0	0.0
Improve truck delivery schedule	31	9.0	31	14.4	0	0.0
Rehabilitate sewerage and water supply lines	71	20.6	10	4.7	61	47.3
Install additional lines	48	14.0	16	7.4	32	24.8
Improve water supply company's service	48	14.0	14	6.5	34	26.4
Others, please specify	6	1.7	4	1.9	2	1.6
Total	344	100.0	215	100.0	129	100.0

3.3.2 Sanitation services

The sanitation facilities of ger area of Darkhan city are one-time simple pit latrine and mostly a new pit is dug when the old one is full. This sanitation system pollutes not only the clean water and soil source of the city but also it makes impossible to recover because of khashaa size and too many pits in the plot. Also, the pits do not meet hygienic and sanitary requirements and the design cause risk to the social health. Bad hygienic and sanitary habits, less water consumption and bad sanitation conditions increase the cases of hepatitis A, dysentery and other diseases and degrade the social health year by year.

Figure 3: Pit latrine and septic pit with infiltration layer to the soil, Ger area



Table 13: Indicators related to sanitation facilities in ger area of Darkhan city

Indicators		Number	Percent
Toilet/latrine waste discharged to	Pit latrine emptied by sewer tank	2	2.0%
	Pit latrine with infiltration layer to the soil	94	94.0%
	Flush to septic tank with infiltration layer to the soil	4	4.0%
Operation when the pit latrine /septic tank is full	Extracted by truck	3	3.0%
	Dig new one	84	84.0%
	Put chemical agents	13	13.0%
Place to dispose the wastes from latrine or septic tank	Specific/legal place	2	66.7%
	Anywhere	1	33.3%
Frequency emptying the latrine or pit or septic tank	Once more than 5 years	47	47.0%
	Once 2-5 year	21	21.0%
	Yearly	19	19.0%
	Half year	6	6.0%
	Quarterly	1	1.0%
	Monthly	4	4.0%
	Less often than once month	2	2.0%

As for apartment households 93.0% of households pay monthly sanitation service fee based on reading of water meter. Another 7.0% of households pay monthly sanitation service fee based on number of residents.

Apartment households pay 4,040 MNT for monthly sanitation service fee in average. 26.0% of apartment households called service of Public Utility Company. In average they called the service 50 days ago. Main

reasons for calling the service were to change plumbing parts (61.5%) and toilet pan and sanitation line blockage (15.4%).

Table 14: Apartment sanitation service related indicators

Indicators		Number	Percent
Average monthly sanitation service fee (MNT)	Mean	4,040	
	Minimum	840	
	Maximum	15,000	
When did you call service of public utility company last time	Up to week ago	3	3.0%
	12-20 days ago	5	5.0%
	30 days ago	10	10.0%
	60-90 days ago	5	5.0%
	150 and more days ago	3	3.0%
	Never called	58	58.0%
	Don't know	16	16.0%
Average days ago	Mean	50	
	Minimum	2	
	Maximum	240	
Reason called service of public utility company last time	Toilet pan and sanitation line blockage	4	15.4%
	Low pressure of water flow	1	3.8%
	Poor heating	3	11.5%
	Change of plumbing parts	16	61.5%
	Others, please specify	2	7.7%

No one of ger area residents is satisfied with current sanitation situation. 80.0 percent of apartment area residents satisfied with current sanitation situation. However apartment residents don't realized that sanitation service is not problematic, other implementing parties realized many issues related to sanitation service in Darkhan city (Table 13).

Table 15: Sataisfaction level of residents on current sanitation service, by location

Evaluation	Total		In ger area		In apartment	
	N	%	N	%	N	%
Very poor	34	17.0%	32	32.0%	2	2.0%
Poor	69	34.5%	51	51.0%	18	18.0%
Average	48	24.0%	17	17.0%	31	31.0%
Good	49	24.5%	0	0.0%	49	49.0%
Very good	0	0.0%	0	0.0%	0	0.0%
Total	200	100.0%	100	100.0%	100	100.0%

Ger area households mentioned issues of bad smell (19.6% of ger area households), health risk (18.6%), no space for latrine (17.6%) as reasons of not satisfied with current sanitation condition. Apartment households mentioned issues of bad smell (40.6% of apartment area households), filling up waste water (25.0%) and toilet pan and sanitation line blockage (18.8%) as reasons of not satisfied with current sanitation condition (Table 14).

Table 16: Reasons not satisfied with current sanitation condition, by locations

Reasons	Ger area		Ger area		Apartment	
	N	%	N	%	N	%
No space for latrine	72	16.3%	72	17.6%	0	0.0%
Bad smell	93	21.1%	80	19.6%	13	40.6%
Pit fills up very quickly	50	11.3%	50	12.2%	0	0.0%
Uncomfortable facility - difficult to go to during winter	33	7.5%	33	8.1%	0	0.0%
Health risks	79	17.9%	76	18.6%	3	9.4%
Soil and groundwater pollution	57	12.9%	56	13.7%	1	3.1%
Toilet pan and sanitation line blockage	6	1.4%	0	0.0%	6	18.8%
Fill up waste water	49	11.1%	41	10.0%	8	25.0%
Others please specify	2	0.5%	1	0.2%	1	3.1%
Total	441	100.0%	409	100.0%	32	100.0%

Ger area households suggested connecting to sewerage system (23.8%), rehabilitating sewerage and water supply lines (23.8%), and improving pit latrine by construction of individual household septic tank (23.8%) for improving their current sanitation condition. Apartment households suggested rehabilitating sewerage and water supply lines (46.9%), improving water supply Company's service (25.4%) and installing additional lines (22.3%) for improving their current sanitation condition (Table 15).

Table 17: Households' suggested ways to improve current sanitation condition in their household or community

	Total		Ger area		Apartment	
	N	%	N	%	N	%
Connect to sewerage system	65	23.8%	65	45.5%	0	0.0%
Improve pit latrine by construction of individual household septic tank	63	23.1%	63	44.1%	0	0.0%
Rehabilitate sewerage and water supply lines	65	23.8%	4	2.8%	61	46.9%
Install additional lines	34	12.5%	5	3.5%	29	22.3%
Improve service of water supply and sanitation company	34	12.5%	1	0.7%	33	25.4%
Others, please specify	3	1.1%	0	0.0%	3	2.3%
Don't know	9	3.3%	5	3.5%	4	3.1%
Total	273	100.0%	143	100.0%	130	100.0%

In ger area 4 share one pit latrine in average. 12 people at maximum share and use one pit latrine (Table 16).

Table 18: Average number of person sharing one sanitation facility, by location

Indicators		Total	Ger area	Apartment
Number of person sharing one sanitation facility	Mean	3.80	4.33	3.27
	Minimum	1	1	1
	Maximum	12	12	6

Among households 53 percent of family member, who are mainly responsible for sanitation issues of household are women according to the result of the survey.

37.5% of total households of Darkhan city have plan planning to improve or upgrade your current sanitation system / facilities during the next two years (Table 17).

Table 19: Number of households planning to improve or upgrade your current sanitation system / facilities during the next two years, by locations

	Total		Ger area		Apartment	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	75	37.5	38	38.0	37	37.0
No	125	62.5	62	62.0	63	63.0
Total	200	100.0	100	100.0	100	100.0

In average households are planning to spend 604.0 thousand MNT for improvement and upgradation of sanitation facilities over next two years (Table 18).

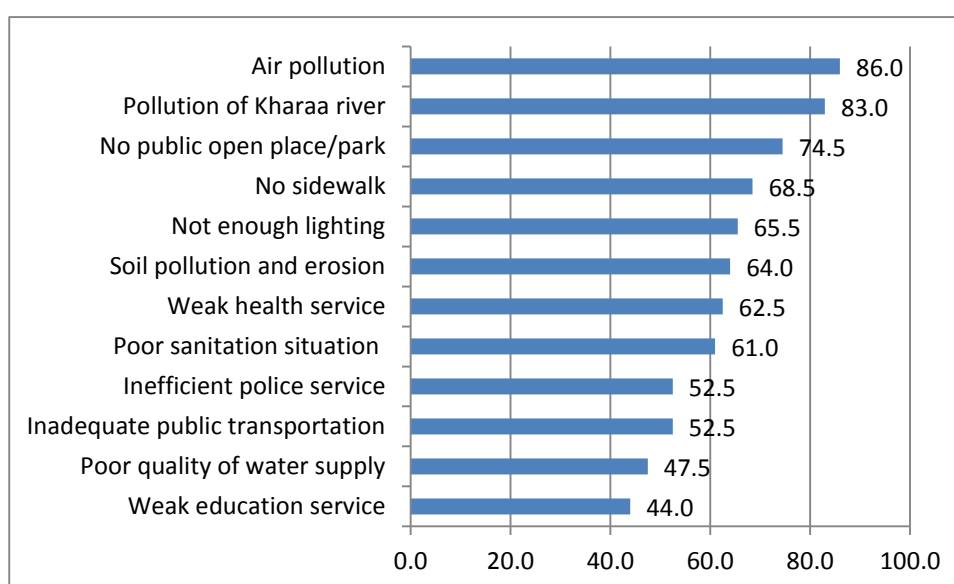
Table 20: Average planned amount of money for improvement and upgradation of sanitation facilities over next two years

Indicator	Number
Number of householdss mentioned given amount of money	26
Mean	604,038
Minimum	20,000
Maximum	3,000,000

3.4 Priority social and environmental issues

Darkhan citizens consider on air pollution (86.0% of respondents said that is issue), pollution of Kharaa River (83.0%), no public open place/park (74.5%), no sidewalk (68.5%) and not enough lighting (65.5%).

Figure 4: Prioritization of social and environmental issues



All above mentioned issues are impacted to all similarly. Only for issues of no public open place/park and weak education service significant proportion for children was shown (19.5% and 13.6%).

Table 21: Significantly impacted groups from social and environmental impacts

Issues	% of respondents	Significantly impacted group				
		Women	Men	Children	Older	For all
Air pollution	86.0	0.6	0.0	2.3	0.0	97.1
Pollution of Kharaa river	83.0	0.0	0.0	0.6	0.6	98.8
No public open place/park	74.5	0.0	0.0	19.5	0.0	80.5
No sidewalk	68.5	0.0	0.0	0.0	0.0	100.0
Not enough lighting	65.5	0.0	0.0	0.0	0.0	100.0
Soil pollution and erosion	64.0	0.0	0.8	1.6	0.0	97.7
Weak health service	62.5	1.6	0.8	2.4	0.8	94.4
Poor sanitation situation	61.0	0.0	0.8	0.0	0.0	99.2
Inadequate public transportation	52.5	0.0	0.0	1.0	0.0	99.0
Inefficient police service	52.5	0.0	0.0	1.0	0.0	99.0
Poor quality of water supply	47.5	0.0	1.1	2.1	0.0	96.8
Weak education service	44.0	0.0	0.0	13.6	0.0	86.4

Residents of Darkhan city named pollution of the Kharaa River in the second place after air pollution among selected environmental and social infrastructure issues and 83.3 percent of respondents answered this issue is existed in their living area. Six out of ten respondents or 64.1 percent of respondents supported re-use of grey water. 40.8 percent of respondents mentioned that we have to re-use treated grey water for toilet flushing (Table 20).

Table 22: Respondents opinion on re-using grey water

	Number	Percent
We should use treated grey water for toilet	84	40.8
We should use treated grey water for industrial purposes	21	10.2
We should use treated grey water for agriculture	8	3.9
We should use treated grey water for services such as car washing etc.	4	1.9
We should use treated grey water for household purposes such as backyard garden, lawn, animals, or use for household washing activities etc.	15	7.3
We don't need to re-use grey water.	74	35.9
Total	206	100.0

In the household socio-economic survey we asked “Assume that WWTP of the Darkhan city allows to re-use water for industrial and household purposes and additional investment from all households in Darkhan city need for improvement. In this case how much money would you pay for investment once? Also assume that all households pay same amount of money”.

55.0 percent of total respondents answered to this question. Based on this information Darkhan city residents expressed that they can pay in average 14,036 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment which WWTP of the Darkhan city allows to re-use water for industrial and household purposes. Most repeated amount (mode) was 10,000 MNT.

Table 23: Statistical indicators of WTP for investment which WWTP of the Darkhan city allows to re-use water for industrial and household purposes

N	Valid	110
	Missing	0
Mean		14036.4
Median		10000.0
Mode		10000
Std. Deviation		17666.9
Minimum		500
Maximum		100000

We also asked question “Would you pay money for public recreational facility in the Kharaa River for bathing or other recreational activities, if you have to pay money building it?” 68.0 percent of total respondents or 136 respondents answered yes to this question. Out them 90 respondents said given amount of money to question of “How much money would you pay for invest once?” Residents of Darkhan city expressed that they can pay in average 15,122 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment of public recreational facility in the Kharaa River for bathing or other recreational activities, if they have to pay money building it. Most repeated amount (mode) was 10,000 MNT.

Table 24: Statistical indicators of WTP for investment of public recreational facility in the Kharaa River for bathing or other recreational activities

N	Valid	90
	Missing	0
Mean		15122.2
Median		10000.0
Mode		10000
Std. Deviation		24986.5
Minimum		500
Maximum		100000

In the Household Socio-Economic Survey we used following scenario:

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment. Consequently the rehabilitation and expansion of the existing WWTP or the development of a new WWTP, meeting national standards and international best practices, is urgently needed. WWTP is operating inefficiently and below capacity. Dilapidated and dated equipment causes frequent and significant overflows polluting the Kharaa river basin with negative environmental and health impacts. Also 10.5 thousand households or 47.7% of total Darkhan city households live in ger area and use simple pit latrine for their sanitation. These “unimproved sanitation systems” increase the probability of water-based diarrheal diseases caused by aquatic organisms that spend part of their life cycle as parasites of animals (e.g. worms). Water borne diseases are the most common of these diseases in Mongolia. These diseases are transmitted through human contact with excreta, insects and non-treated water. Unless improvements in WWTP are introduced, prevailing conditions will remain difficult, or may even worsen due to increasing population. Improvements in WWTP will provide non-monetary benefits like reduced foul-smell, vector insects, and better living conditions or environment all Darkhan citizens, water re-use to water backyard garden, lawn, animals, or use for household washing activities, and public recreational facilities, particularly the improved quality of river/lake water for bathing or other recreational activities. Enhancement of WWTP capacity will allow connecting ger area households for central sewerage system. However, improvement to WWTP will additional investment and the provider would expect not only direct users but also all Darkhan citizens to pay taxes, thereby

enabling recovery of investment put into the expansion of services. Therefore, public funding would be necessary and it would be collected through an increase in taxes during the five years of the programs.

The main reason for justifying these payments is that both programs have benefits for all Darkhan citizens, since the risk of diseases or even epidemics would be reduced and river would be less polluted. Therefore, we would like you to suppose that there is not enough money available to undertake this program except if all the households of Darkhan city would contribute with their fair share.

Based on the household socio economic survey conducted, the mean WTPs for additional taxes for improved sanitation service were calculated at 19,844 MNT for all households and 19,956 MNT and 19,764 MNT for ger area households and apartment area households, respectively. Ger areas households really want have improved sanitation service and condition and they are willing to pay more. It is also shown that apartment area households don't aware that sanitation service is not problematic in Darkhan city.

Table 25: Bid prices used in the WTP analysis and number of households asked and accepted the bids

Bid	Bid price	Ger area households			Apartment area households			Total households		
		Total	Accepted bid	% of accepted	Total	Accepted bid	% of accepted	Total	Accepted bid	% of accepted
Bid 1	10,0 thousand MNT	22	15	68.2	24	18	75.0	46	33	71.7
Bid 2	15,0 thousand MNT	20	13	65.0	17	8	47.1	37	21	56.8
Bid 3	20,0 thousand MNT	19	13	68.4	18	14	77.8	37	27	73.0
Bid 4	25,0 thousand MNT	19	13	68.4	21	13	61.9	40	26	65.0
Bid 5	30,0 thousand MNT	20	13	65.0	20	12	60.0	40	25	62.5
Total		100	67	67.0	100	65	65.0	200	132	66.0

3.5 Community awareness and participation

Only household member of 8.5% of Darkhan city households are member community or people's organization in their area. 47.1% of them are member of Citizens Community Council and 29.4% of them are member of Apartment Owners' Association. Members participate to their organization activities actively (Table 24).

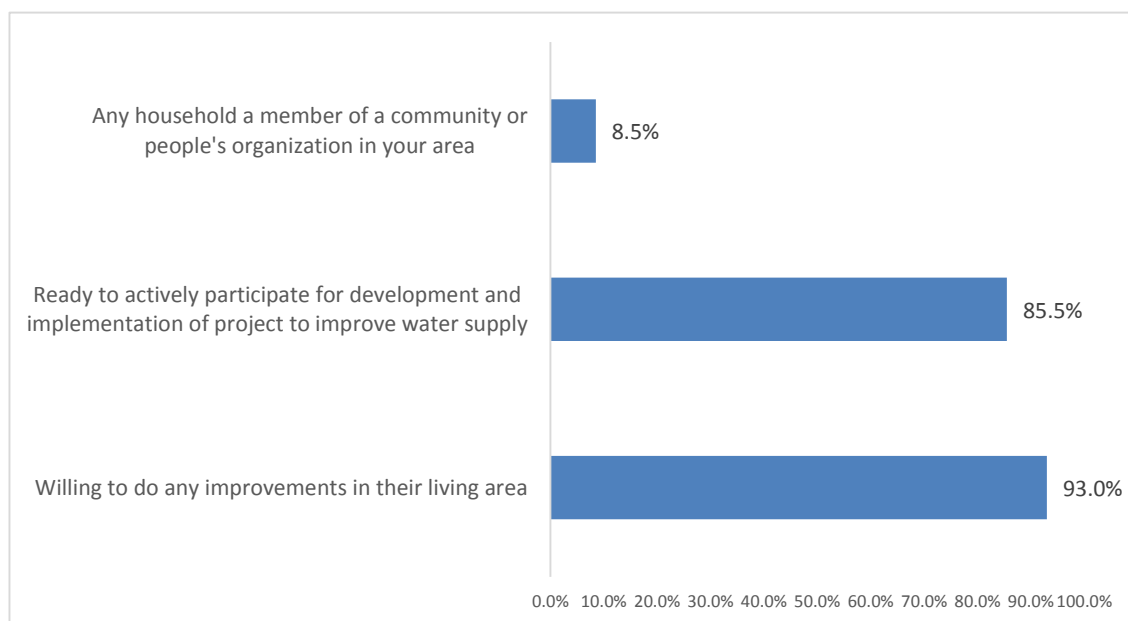
Table 26: Community participation level of respondent households

		Frequency	Percent
Membership of household members to a community or people's organization in their area	Yes	17	8.5
	No	183	91.5
	Total	200	100.0
Type of community or people's organization	Apartment Owners Association	5	29.4
	Citizens Community Council	8	47.1
	Others	4	23.5
	Total	17	100.0
Participation level	Very active	11	64.7
	Fairly active	5	29.4
	Not active	1	5.9
	Total	17	100.0

Only few apartment residents participated to the meeting of Apartment Owners' Association. Participants are elders and unemployed people, who are in home. This is same in ger areas for bagh residents meetings etc. One representative resident of ger area mentioned that most of residents, both husband and wife of household in our area work in food market of Old Darkhan. They work six days of week until from 19:00PM to 20:00PM. Therefore they don't have time to participate this kind of activities and they want to rest.

In the survey we asked "Would you be ready to actively participate for development and implementation of project to improve water supply and sanitation service if it provides opportunity to participate?" and 85.5 percent of respondents answered "Yes". Most of residents or 93.0 percent of respondents are willing to do any improvements in their living area, if given a chance (Figure 5).

Figure 5: Community participation level



Therefore it should be allowed to residents' communities to participate in the project planning and implementation. Their participation should be consultation for project planning and designing and M&E activities of project implementation.

3.6 Household expenditure and income, Household business

3.6.1 Household expenditure

All households always have various expenditures. During the survey we divided the expenditure to the following 13 expenditures and others and identified the survey participants by the time interval of past month and past 12 months. Data collection of the survey was conducted from 22 January to 29 January of 2014. Therefore last month was referred to January 2014 and last 12 months were referred to 2013 year whole (January to December of 2013).

As we can see from the results, the apartment households spent about 1,070.7 thousand tugrugs for the past month, which is higher by 607.5 thousand tugrugs or 2.3 times than the average of ger area households. The much different expenditure is heating and fuel expenditure for ger area households is a 3.4 times higher than apartment households.

The main expenditure of the households or 26.1 percent is food expenditures. Also, in ger areas the expenditure on heating fuel and gasoline has higher percentage.

Table 27: Household expenditure in past one month in MNT, by locations

Expenditure item	Total		Ger area		Apartment	
	in MNT	Percent	in MNT	Percent	in MNT	Percent
Food	200,415	26.1%	139,630	30.1%	261,200	24.4%
Electricity	18,873	2.5%	14,110	3.0%	23,635	2.2%
Water consumption	6,332	0.8%	2,148	0.5%	10,515	1.0%
Heating, fuel	50,717	6.6%	78,154	16.9%	23,280	2.2%
Waste collection	2,976	0.4%	3,254	0.7%	2,697	0.3%
Communication	36,130	4.7%	27,210	5.9%	45,050	4.2%
Fuel, petrol	46,715	6.1%	43,430	9.4%	50,000	4.7%
Transportation	21,539	2.8%	15,388	3.3%	27,690	2.6%
Education	37,867	4.9%	19,183	4.1%	56,550	5.3%
Medical/health service	43,919	5.7%	29,437	6.4%	58,400	5.5%
Rent	7,050	0.9%	0	0.0%	14,100	1.3%
House repairs	144,050	18.8%	30,900	6.7%	257,200	24.0%
Repayment of loan	114,039	14.9%	45,315	9.8%	182,763	17.1%
Other	36,378	4.7%	15,100	3.3%	57,655	5.4%
Total	766,997	100.0%	463,259	100.0%	1,070,735	100.0%

As we can see from the expenditures of the past 12 months, then, households spend on average 6.6 million tugrugs a year. The indicator is also high in apartment households. But heating and fuel expenditure for the households in ger area is higher than the households in apartment as shown. For the apartment households' expenditure item repayment of loan is much higher. Apartment households paid 1,956.0 thousand tugrug for repayment of loan in last year (Table 27).

Table 28: Household expenditure in 12 past months in tugrug, by locations

Expenditure item	Total		Ger area		Apartment	
	in MNT	Percent	in MNT	Percent	in MNT	Percent
Food	2,330,480	35.3%	1,747,760	40.3%	2,913,200	32.9%
Electricity	223,291	3.4%	166,860	3.8%	279,722	3.2%
Water consumption	78,993	1.2%	26,026	0.6%	131,960	1.5%
Heating, fuel	355,105	5.4%	484,332	11.2%	225,878	2.5%
Waste collection	33,768	0.5%	35,168	0.8%	32,368	0.4%
Communication	394,700	6.0%	270,920	6.2%	518,480	5.9%
Fuel, petrol	509,330	7.7%	473,860	10.9%	544,800	6.1%
Transportation	254,313	3.9%	176,646	4.1%	331,980	3.7%
Education	423,569	6.4%	183,777	4.2%	663,360	7.5%
Medical/health service	92,387	1.4%	41,154	0.9%	143,620	1.6%
Rent	83,400	1.3%	0	0.0%	166,800	1.9%
House repairs	183,250	2.8%	109,100	2.5%	257,400	2.9%
Repayment of loan	1,222,934	18.5%	489,880	11.3%	1,955,988	22.1%
Other	414,464	6.3%	133,300	3.1%	695,628	7.9%
Total	6,599,984	100.0%	4,338,783	100.0%	8,861,184	100.0%

Table 29: Total household expenditure over last 12 months and 1 month, by percentile and by locations

Statistics		Total monthly household expenditure, last month			Total monthly household expenditure, last 12 months		
		Total	Ger area	Apartment	Total	Ger area	Apartment
Mean		766,997	463,259	1,070,735	6,599,984	4,338,783	8,861,184
Minimum		0	87,250	0	0	849,000	0
Maximum		7,922,200	1,226,000	7,922,200	29,090,000	14,903,400	29,090,000
Percentiles	10 th	204,025	162,700	323,350	1,844,400	1,307,900	3,372,300
	20 th	316,800	205,100	423,600	3,015,200	1,873,200	4,704,600
	30 th	399,415	307,950	513,500	3,674,600	2,574,200	5,556,810
	40 th	477,080	381,950	560,200	4,837,800	3,258,240	6,338,200
	50 th	541,300	452,375	651,500	5,445,000	3,828,000	7,564,700
	60 th	613,680	494,100	794,200	6,413,080	4,872,720	9,214,800
	70 th	715,700	594,350	900,730	7,800,900	5,346,410	10,290,600
	80 th	864,000	657,250	1,321,000	9,826,800	6,528,800	12,556,360
	90 th	1,330,000	769,075	2,105,000	12,621,300	8,224,600	15,414,240

3.6.2 Household income

From the households living in Darkhan city 42.0 percent live by household business income, 39.5 percent by wage and salary income, and 8.8 percent by pension income. By total average we can see that a Darkhan city household earned on average 1,128.8 thousand tugrugs in last month from 7 kinds of sources. Compared with the average number of household members the indicator is approximately 282.2 thousand tugrugs per person. For ger area households wage and salary income is main income source (60.3%), while household business income is main income source for apartment households (51.0%).

Table 30: Household income in past one month in MNT, by locations

Income source	Total		Ger area		Apartment	
	in MNT	Percent	in MNT	Percent	in MNT	Percent
Wage	445,280	39.5%	365,760	60.3%	524,800	31.8%
Pension	99,260	8.8%	86,585	14.3%	111,935	6.8%
Child allowance	20,478	1.8%	20,290	3.3%	20,665	1.3%
Other allowance	14,501	1.3%	14,830	2.4%	14,171	0.9%
Household business income	474,397	42.0%	107,165	17.7%	841,628	51.0%
Private remittance	64,371	5.7%	5,000	0.8%	123,742	7.5%
Other	10,415	0.9%	6,830	1.1%	14,000	0.8%
Total	1,128,701	100.0%	606,460	100.0%	1,650,941	100.0%

Last 12 months (in 2013) a Darkhan city household had income of 11,928.4 thousand tugrug on average. Based on this number monthly average household income was 994.0 thousand tugrug. There are significant difference between incomes of ger area household and apartment households. Average last 12 months income of apartment households is 2.3 times higher than income of ger area households.

Table 31: Household income in 12 past months in tugrug, by locations

Expenditure item	Total		Ger area		Apartment	
	in MNT	Percent	in MNT	Percent	in MNT	Percent
Wage	5,225,595	43.8%	4,431,070	61.9%	6,020,120	36.0%
Pension	1,154,000	9.7%	1,015,800	14.2%	1,292,200	7.7%
Child allowance	242,335	2.0%	238,080	3.3%	246,590	1.5%
Other allowance	133,974	1.1%	173,100	2.4%	94,848	0.6%
Household business income	4,320,290	36.2%	1,200,910	16.8%	7,439,670	44.5%
Private remittance	761,740	6.4%	60,000	0.8%	1,463,480	8.8%
Other	90,450	0.8%	37,900	0.5%	143,000	0.9%
Total	11,928,384	100.0%	7,156,860	100.0%	16,699,908	100.0%

The minimum standard of living in Darkhan-Uul aimag was pegged at 117,500 tugrugs (abided 1 April 2012) per capita per month¹⁰. With the average size of the household at 4, the minimum standard of living (MSL) per household on a monthly basis is 470,000 tugrugs or 5,640,000 per year. Using this as basis for poverty threshold, the households in the Darkhan city may be categorized into poor and non-poor, where those households with income falling below the threshold are considered poor. The results denote that the poverty incidence in the Darkhan city is 26.5%, where the poor earn an average monthly income of 3,642,642 tugrugs, way below the MSL in Darkhan-Uul aimag.

Table 32: Poverty Status of Darkhan City Housholds, by locations

Poverty status	Ger area HHs		Apartment area HHs		Total HHs	
	N	%	N	%	N	%
Poor	44	44.0	9	9.0	53	26.5
Non-Poor	56	56.0	91	91.0	147	73.5
Total	100	100.0	100	100.0	200	100.0

For ger area households, poverty incidence is 44.0%, while it is 9.0% for apartment area households.

Based on the international average poverty line for developing countries of \$2 a day¹¹, which when converted to tugrug amount to 4,962,240 tugrug per year per household¹² (with 4 as average size of household in Darkhan-Uul aimag) or 413,520 tugrugs per month, the number of households classified as poor was 39 out of 200 households or 19.5%. This pegs the poverty incidence at 10%. The monthly average income of the poor based on the \$2 a day threshold was 3,173,502 tugrugs per year or 264,459 tugrugs per month.

¹⁰ <http://www.infomongolia.com/ct/ci/3743/56/MinimumStandardofLivingwasrenewed>.

¹¹ <http://web.worldbank.org/website/external/topics/extpoverty/expta>

¹² 2USD or 3,446 tugrugs x 30 days x 4 members of HH x 12 months= 4,962,240 tugrugs

3.7 Willingness to Pay for Improved Sanitation Service

3.7.1 WTP Validity Test

Improvement to WWTP will need significant amount of investment. To recover investment cost tariff of the service will increase. It could influence to living and welfare of households and operational cost of businesses. To analyze affordability of improved service tariff we asked whether residents pay increased tariff for improved service from apartment households in the household socio-economic survey. Before estimation of WTP we have to do validity test. Based on the result of correlation analysis validity test is proved for all above mentioned variables. For example, CV Response has negative correlation with Bid_Month (if price is increased then households may not want to pay for improved service). Household response to the CV question (CV Response) has positive correlation with household head's age, average monthly sanitation service fee and household expense and income. Household response to the CV question (wat_cv) has negative correlation with household head's employment status (if household head is working, then they are willing to pay for improved service) and satisfaction level with the current sanitation situation.

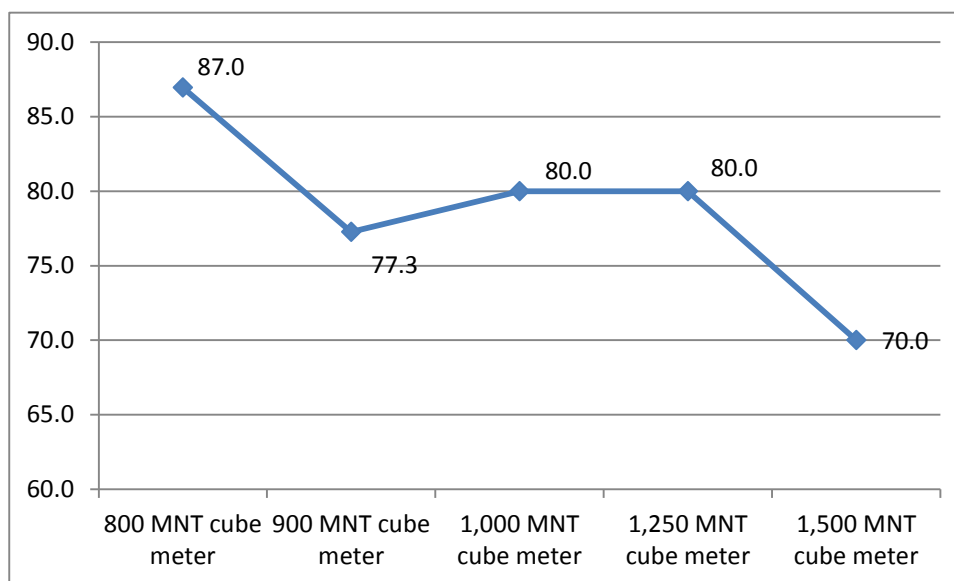
Table 33: Willingness to pay validity test

Variables	Correlation coef.	Explanation
CV Response	1.000	Household responses to CV question (1 - Yes, 0 - No)
Bid_Month	-0.114	Proposed monthly charge (800MNT-1500MNT)
Q2_4 Age	0.006	Household head's age
Q2_13 What is the highest level of your education?	-0.074	Household head's education level
Q2_14 Do you work?	-0.069	Household head's employment status (1 – Employed, 2 – Self Employer, 3 – Not employed, 4 – Pensioner, 5 – Student, 6 - Other)
Q3_3 Size of square this dwelling? m2	-0.125	Size of apartment in square meter
Q4_17 What is average monthly sanitation service fee for your apartment?	0.042	Average monthly sanitation service fee in tugrug
Q4_21 What is your satisfaction level with the current sanitation situation?	-0.099	Satisfaction level with the current sanitation situation (1-Very bad, 2-Bad, 3-Fair/Normal, 4-Good, 5-Very good)
Q7_15_1 Total Past 12 months, in MNT	0.122	Total expense of past 12 months in tugrug
Q9_8_1 Past 12 months, in MNT	0.145	Total income of past 12 months in tugrug

3.7.2 Demand Analysis

Figure 6 shows demand curve of improved sanitation service, in terms of charge for per cube meter. In vertical axis of the graph percentage of households mentioned that they can pay given amount of price for improved sanitation service and in the horizontal axis proposed price per cube meter waste water treatment service, in MNT are shown. What is observed is that as price per cube meter increased, demand is decreasing. Demand line appears downward sloping.

Figure 6: Demand curve of improved sanitation service



3.7.3 Estimation of WTP for improved service

To analyze affordability of improved service tariff we asked whether residents pay increased tariff for improved service from apartment households in the household socio-economic survey.

Table 34: Bid prices used in the WTP analysis and number of households asked and accepted the bids

Number	Bid price	Total HHs	Number of HHs accepted bid	Percentage of accepted households
Bid 1	800 MNT cube meter	23	20	87.0
Bid 2	900 MNT cube meter	22	17	77.3
Bid 3	1,000 MNT cube meter	20	16	80.0
Bid 4	1,250 MNT cube meter	15	12	80.0
Bid 5	1,500 MNT cube meter	20	14	70.0
Total		100	79	79.0

According to WTP analysis or Probit analysis mean WTP for waste water treatment service per cube meter was estimated in 1,076 MNT.

APPENDIX W: POVERTY REDUCTION AND SOCIAL STRATEGY

1 INTRODUCTION

1.1. Background

The Asian Development Bank (ADB) has been financing water supply, wastewater treatment, small loans for utility connection, and other urban infrastructure and capacity development for Mongolian cities and their *ger* areas through a number of urban loans since year 2000. The Government of Mongolia through its Ministry of Economic Development, and Ministry of Construction and Urban Development requested from ADB project financing of up to \$20 million to support wastewater treatment and wastewater management improvement for Darkhan city.

This project financing is intended to support the technical rehabilitation and expansion of the existing Darkhan wastewater treatment plant (WWTP) if found appropriate during the assessment, or if deemed necessary, the construction of a new WWTP, and potential additional sub-projects in the areas of wastewater management and sanitation in Darkhan city. The project financing and its project preparatory technical assistance (TA) activity are aligned with the government's 2012–2016 Action Program, which includes objectives to improve public utility services and networks in provincial centers and significant expansion of industrial development in Darkhan city. The activity is aligned with ADB's country partnership strategy for Mongolia, 2012–2016, which includes the support for water supply, and other municipal infrastructure and services. The project is performing well and is in compliance with ADB's eligibility criteria for project financing.

1.2. Scope of the project and its impacts

The expected project impact of the Project financing will be sustainable urban environment in Darkhan city and the Kharaa River Basin. The outcome will be improved wastewater treatment and management for domestic and industrial users in Darkhan city. Project outputs will be (i) technically modernized and expanded, or newly-constructed WWTP in Darkhan, and (ii) institutional capacity strengthened and wastewater management operation improved. The total number of the project's beneficiaries is expected to exceed 130,000 people during the project life, in addition to industries and businesses in Darkhan.

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment. Consequently the rehabilitation and expansion of the existing WWTP or the development of a new WWTP, meeting national standards and international best practices, is urgently needed. Currently the city's wastewater is collected through 225 kilometers of sewerage pipes, and treated in the WWTP, which started operation in 1997 with a design capacity of 50,000 cubic meters/day, treating both industrial and domestic wastewater. Current wastewater inflow and treatment is approximately 9,000 cubic meters/day, with the WWTP operating inefficiently and below capacity. Dilapidated and dated equipment causes frequent and significant overflows polluting the Kharaa river basin with negative environmental and health impacts.

2 POVERTY REDUCTION AND SOCIAL STRATEGY

2.1 Links to the National Poverty Reduction Strategy and Country Partnership Strategy

In February 2008, the Government of Mongolia launched a long-term National Development Strategy (NDS), consistent with achieving the Millennium Development Goals (MDGs), for the period through 2020. The NDS aims to enhance development and progress of Mongolia's people in the medium term (2015), and in the long-term (2015–2020) to eliminate poverty, convert the country into one of the leading countries in the region in terms of human development, and create a knowledge-based economy.¹³

¹³ The implementation of the MDGs in Mongolia is set out in accordance with the State Great Khural Resolutions No. 25 of 2005 and No 13 of 2008.

The NDS includes urban-related strategies for meeting the (MDGs) such as, prioritizing urban migration to the aimag (province) centers to ease migration pressure on Ulaanbaatar, and the development of urban utilities.

Also Parliament of Mongolia adopted “Regional Development Concept of Mongolia”, “Mid-Term Strategy of Regions”, and “Law on Management and Coordination of the Regional Development” in 2001 and 2003. According to the regional development concept of Mongolia, Darkhan city is the pillar center of the Central Region of Mongolia.

The Asian Development Bank’s (ADB) country partnership strategy (CPS) for Mongolia, 2012-2016, consistent with government priorities, aims to foster a sustainable and inclusive growth process. Assistance will focus on transport, energy, and water supply infrastructure, access to education and health, and regional economic cooperation. The Asian Development Bank (ADB) sector Loan 2301, approved on 19 December 2006, has been financing water supply, wastewater treatment, small loans for utility connection, and other urban infrastructure and capacity development for Mongolian cities and their *ger* areas in five provinces. The Government of Mongolia through its Ministry of Economic Development, and Ministry of Construction and Urban Development requested from ADB project financing to Loan 2301 of \$20 million to support wastewater treatment and wastewater management improvement for Darkhan city.

Mongolian Government Action Plan for 2012-2016¹⁴. Project will be focused to wastewater treatment and wastewater management improvement for Darkhan city. This is aligned with Mongolian Government Action Plan for 2012-2016 approved by the Parliament of Mongolia on 2012, which identified Darkhan city as priority industrial center in framework target of “Employed Mongolians for sufficient income”. The planned industrial development in Darkhan city will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment.

Action Plan for 2012-2016 of the Governor of Darkhan-Uul Aimag¹⁵. One of main priorities of Citizens Representatives Khural of Darkhan-Uul aimag for 2012-2016 is urban development, ecology and improvement of living environment of Darkhan citizens. In line with this goal, redevelopment of *ger* areas, identification of new residential areas and ecological aspects of Kharaa River are included to the plan. Those strategies and policies show that population and economic growth of Darkhan city will be intensified.

2.2 Poverty and Social Analysis

2.2.1. Poverty Incidence in Darkhan-Uul aimag and Darkhan city

The National Statistical Office (NSO) of Mongolia has been annually estimating poverty indicators nationally and regionally based on “Household Socio-Economic Survey” (HSES) according to the needs to estimate and update accurate data using internationally accepted methodology on Mongolian population livelihood level and poverty.

Use of only national and regional data is not adequate for correctly identifying target groups of national programs. Therefore, the NSO has been working with UNDP on the need to estimate the poverty indicators at aimag, soum and district levels by mapping the poverty and estimating the indicators of the MDGs and the first poverty mapping estimation was done based on Population and Housing Census of 2000 and data of livelihood level surveys of 2002 and 2003 as an experiment in 2009 and relevant report was made¹⁶. Second time poverty indicators have been estimated using Mongolian Population and Housing Census of 2010 and data of HSES of 2011 presenting the data at the lowest possible administrative levels.¹⁷

Poverty measure headcount ratio which simply counts all the people below a poverty line was 26.0 percent in 2011, which was decreased by 3.6 points compared to 2003. It means that 26.0 percent of the total population or one quarter of Darkhan city population live below poverty line. Poverty headcount ratio of

¹⁴ State Great Khural Resolutions No. 37 of 2012.

¹⁵ Citizens Representatives Khural of Darkhan-Uul aimag, Resolutions No. 2/02 of 2013.

¹⁶ “Mongolian Census-Based Poverty Map: Region, Aimag and Soum Level Results” Harold Coulombe and Thomas Otter. National Statistical Office and UNDP, March 2009.

¹⁷ “Millennium Development Goals and Poverty Map 2011: Region, Aimag, Soum and District Level Results” Harold Coulombe and Gereltuya Altankhuayag. National Statistical Office and UNDP, 2012.

Darkhan city is slightly low compared to average poverty headcount ratio of whole Darkhan-Uul aimag and Central region (Please see Table 1).

Table 35: Poverty indicators of Darkhan city, Darkhan-Uul aimag and central region, by years of survey results used for poverty mapping

Poverty indicators	Central region		Darkhan-Uul aimag		Darkhan soum	
	2003	2011	2003	2011	2003	2011
Population	445,609	413,181	85,042	85,531	67,119	70,241
Poverty Headcount (P0)	38.7	26.3	32.1	26.8	29.6	26.0
Poverty Gap Index (P1)	12.1	7.8	9.6	7.9	8.5	7.6
Poverty Severity Index (P2)	5.3	3.3	4.1	3.4	3.5	3.3
Number of Poor Individuals	172,451	108,553	27,298	22,919	19,867	18,241

Source: "Mongolian Census-Based Poverty Map: Region, Aimag and Soum Level Results" Harold Coulombe and Thomas Otter. National Statistical Office and UNDP, March 2009. "Millennium Development Goals and Poverty Map 2011: Region, Aimag, Soum and District Level Results" Harold Coulombe and Gereltuya Altankhuayag. National Statistical Office and UNDP, 2012.

Percentage of the poor people of Darkhan city is lower than other aimag center soums or aimag center cities, except Dornogovi – Sainshand (15.9%), Umnugobi – Dalanzadgad (11.9%), Bulgan – Bulgan (22.3%), Bayan-Ulgii – Ulgii (17.8%), and Uvs – Ulaangom (16.6%).

Table 36: Poverty headcount as of 2011, by aimag center soums

Aimag centers	Poverty Headcount (P0)
Ulaanbaatar	23.4
Dornod – Kherlen	31.0
Sukhbaatar - Baruun-Urt	32.6
Khentii – Kherlen	32.7
Tuv – Zuunmod	29.5
Govisumber – Sumber	29.5
Selenge – Sukhbaatar	26.5
Dornogovi – Sainshand	15.9
Darkhan-Uul – Darkhan	26.0
Umnugobi – Dalanzadgad	11.9
Dundgovi – Saintsagaan	35.7
Orkhon - Bayan-Undur	31.6
Uvurkhangai – Arvaikheer	41.1
Bulgan – Bulgan	22.3
Bayankhongor - Bayankhongor	30.3
Arkhangangai - Erdenebulgan	37.9
Huvsgul – Murun	38.3
Zavkhan – Uliastai	31.7
Govi-Altai – Esunbulag	38.5
Bayan-Ulgii – Ulgii	17.8
Khovd – Jargalant	36.2
Uvs – Ulaangom	16.6

Source: "Millennium Development Goals and Poverty Map 2011: Region, Aimag, Soum and District Level Results" Harold Coulombe and Gereltuya Altankhuayag. National Statistical Office and UNDP, 2012.

According to the result of qualitative surveys of Focus Group Discussion and Key Informant Interview, however Darkhan city is developed city compared to others in terms of industrialization and infrastructure development, migration to the Darkhan city from other aimags is caused to high unemployment rate, expansion of ger area in Darkhan city and decline of living conditions among city residents. Unemployment

rate was 14.3 percent as of 2012, which was higher than national average (8.2%) and similar to aimags such as Orkhon (14.2%) and Khuvsgul (15.2%) aimags, which had encountered similar challenges.

According to the Statistical Review of Darkhan-Uul aimag, which is published by Statistical Division of Darkhan-Uul aimag 2850 people migrated in to Darkhan-Uul aimag and 3948 people migrated out to the Ulaanbaatar city and other aimags in 2013. Mechanical increase of population was -1098. But respondents in the qualitative surveys mentioned that poor or vulnerable households migrated in to Darkhan city looking for job and households with feasible welfare migrated to Ulaanbaatar city looking for more living condition.

The minimum standard of living in Darkhan-Uul aimag was pegged at 117,500 tugrugs (abided 1 April 2012) per capita per month¹⁸. With the average size of the household at 4, the minimum standard of living (MSL) per household on a monthly basis is 470,000 tugrugs or 5,640,000 per year. Using this as basis for poverty threshold, the households in the Darkhan city may be categorized into poor and non-poor, where those households with income falling below the threshold are considered poor. Total 200 households, of which 100 households each from ger area and apartment area were covered in the household socio-economic survey conducted.

The results denote that the poverty incidence in the Darkhan city is 26.5%, where the poor earn an average monthly income of 3,642,642 tugrugs, way below the MSL in Darkhan-Uul aimag.

Table 37: Poverty Status of Darkhan City Households, by locations

Poverty status	Ger area HHs		Apartment area HHs		Total HHs	
	N	%	N	%	N	%
Poor	44	44.0	9	9.0	53	26.5
Non-Poor	56	56.0	91	91.0	147	73.5
Total	100	100.0	100	100.0	200	100.0

Source: Household Socio-Economic Survey, February 2014.

For ger area households, poverty incidence is 44.0%, while it is 9.0% for apartment area households.

Based on the international average poverty line for developing countries of \$2 a day¹⁹, which when converted to tugrug amount to 4,962,240 tugrug per year per household²⁰ (with 4 as average size of household in Darkhan-Uul aimag) or 413,520 tugrugs per month, the number of households classified as poor was 39 out of 200 households or 19.5%. This pegs the poverty incidence at 10%. The monthly average income of the poor based on the \$2 a day threshold was 3,173,502 tugrugs per year or 264,459 tugrugs per month.

2.2.2 Project Benefits

Project is intended to support the technical rehabilitation and expansion of the existing Darkhan wastewater treatment plant (WWTP) if found appropriate during the assessment, or if deemed necessary, the construction of a new WWTP, and potential additional sub-projects in the areas of water supply and sanitation in Darkhan city.

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment.

Projects will augment household income of Darkhan city residents through following ways and those will be benefits of the project:

- **Effectiveness of the Water Supply and Sanitation Company (Darkhan Us Suvag JSC):**
Operating loss of the Darkhan Us Suvag JSC increases year by year, therefore the company wants

¹⁸ <http://www.infomongolia.com/ct/ci/3743/56/MinimumStandardofLivingwasrenewed>.

¹⁹ <http://web.worldbank.org/website/external/topics/extpoverty/expta>

²⁰ 2USD or 3,446 tugrugs x 30 days x 4 members of HH x 12 months= 4,962,240 tugrugs

increase price for water supply and sanitation service. Price increase of the public utilities will increase household expenditure and influence household welfare negatively.

- **Extension of business activities:** Current situation of sanitation service influences business activities of private and public enterprises. Due to deficiency of sewerage pipes fill up and block of waste water is occurred regularly. Consequently almost every business units need to employ plumber or pay for this service privately and they have to work to solve this problem unexpected manner. Improvement of sanitation service will save these additional costs to business and give opportunity spend this cost for extension of their business.
- **Improvement of health condition:** Inefficient operation of the sanitation service cause water and soil pollution. It increases the probability of water-based diarrheal diseases. Cost to treat water related diarrheal diseases will be paid by households and public health centres.
- **Pleasant environment for residents:** Frequent fill up of waste water outside and in the basement of the apartments and other buildings raises unpleasant condition to neighboring residents such as bad smell and growing mosquitoes and other parasites etc. Due to this condition not only apartment area residents, but also ger area residents can't go for recreation, playing and walking in their living environments.
- **Improvement of the Kharaa river ecology:** Dilapidated and dated equipment causes frequent and significant overflows polluting the Kharaa river basin with negative environmental impacts: decline of water level, water pollution, scarce of aquatics etc.

These specific positive impacts of the project are discussed in greater detail below:

Effectiveness of the Water Supply and Sanitation Company (Darkhan Us Suvag JSC): Operating loss of the Darkhan Us Suvag JSC reached to 700-800 million MNT in recent years. Due to operating loss the company does not afford to invest for rehabilitation and improvement of sewerage pipes and waste water treatment plant itself. Main reason of operating loss relates to exceeding electricity consumption of the dilapidated and dated waste water treatment plant and equipments. Cost share of electricity reaches to 60-70 percent of total operating cost of the company.

In order to decrease operating loss of the company we have submit our proposal to increase base tariff of public utilities to the Ministry of Construction and Urban Development and it's Council. But it was rejected due to influence of the Agency for Fair Competition and Customers. But this problem can be solved by rehabilitation and improvement of waste water treatment plants. According to the estimation of general engineer this will save 4-5 million MNT every month (Source: Note of In-Depth Interview with representative of Darkhan Us Suvag JSC).

According to the Statistical Division of Darkhan-Uul aimag 12,153 households or 52.3 percent total households of Darkhan city live in apartment as end of 2013. Those households will receive benefits here discussed directly. Based on the household socio-economic survey result households in average spend 1.7 percent of total yearly expense or 112.8 thousand MNT for the water supply and sanitation service.

Effective operation of the company will benefit not only apartment households but also ger area households. Ger area households collect water mainly from water vending kiosk with truck delivered water, as well as unprotected well in their khashaa plot. Due to insufficient truck delivery kiosk could not provide water their scheduled time. In case not having water in kiosks households use water from their own or neighbour's unprotected wells for drinking. Households in ger area see that water from unprotected wells is not suitable for drinking, because there are frequent fill up waste water from sewerage pipes, which go through or near to ger area and all households use pit latrine with infiltration layer to the soil. Pit latrines of ger area households are located near to wells about 10-20 meters each others. When they boil water from wells, then white deposits remain in the boiler. Therefore respondents of ger area hope that this will cause diarrheal disease among ger area residents (Source: Note of Focus Group Discussion among representatives of apartment and ger area residents).

As of 2011, there were 135 borehole wells and 372 simple mine wells in territory of Darkhan soum of Darkhan-Uul aimag (Source: Surface Water Census Report of 2011, Environmental Department of Darkhan-Uul aimag).

Consideration of Environmental Department of Darkhan-Uul aimag is to decrease use of wells in khashaa plot of ger area, since they influence to decrease of groundwater and headwater of the Kharaa river basin (Source: Note of In-Depth Interview with representative of Environmental Department of Darkhan-Uul aimag).

Extension of business activities: Current situation of sanitation service influences business activities of private and public enterprises. Due to deficiency of sewerage pipes fill up and block of waste water is occurred regularly. Consequently almost every business units need to employ plumber or pay for this service privately and they have to work to solve this problem unexpected manner. Improvement of sanitation service will save these additional costs to business and give opportunity spend this cost for extension of their business (Source: Note of In-Depth Interview with representative of residents).

Many of restaurants and cafeterias are running their business in first floor of apartments and most blockage of waste water occurs in the restaurants and cafeterias in first floor of apartments. For other larger restaurants and hotels this also happens. This influences to their business activities, such as decreasing number of customers, complaints from customers due to bad condition and smell, worsening hygienic requirements and constraints from Special inspection Department etc.

For them we also should organize public awareness campaigns on recommendations on how to work with sanitation facilities such, what can or can't be throw to the sanitation facilities and to use oil solvents agents for washing dishes etc. It should be also organized among households in apartments (Source: Note of In-Depth Interview with representative of Darkhan Us Suvag JSC).

Government of Mongolia is planning to develop manufacture of tanning and dressing of leather in Darkhan city. But residents of Darkhan city are against this plan considering environmental health issues caused by the manufacture (Source: Note of In-Depth Interview with representative of residents). However the planned industrial development in Darkhan city will lead to economic growth and increase employment of the city. We must consider on the extension and technological improvement of current waste water treatment plants.

Currently there are two manufactures of Darkhan Nekhii JSC and Darkhan Minj LLC. They have own waste water treatment plant, which absorb chrome they used and flush their treated waste water into central sewerage system. Darkhan Us Suvag JSC monitor the operation their activities and Meteorology and Environmental Monitoring Service in Darkhan-Uul aimag does monitoring every quarter according to the order Chairman of National Agency of Meteorology and Environmental Monitoring²¹, dated in 3 November 2011. Meteorology and Environmental Monitoring Service in Darkhan-Uul aimag does monitoring to the waste water treatment plant of above mentioned two industries by 7 chemical bacteriological indicators. Also they do monitoring on the two points of Kharaa River (before and after Darkhan city). Result of the monitoring could be used for outcome indicators of DMF of the project.

There are also manufactures not connected to the central sewerage system, such as Altan Tos LLC, which produces vegetable oil. It has own water supply source. But it is not clear how it treat its industrial waste water. There is Governor's order of Darkhan-Uul aimag, which identifies that industries working in Darkhan city must connect to the central sewerage system. In this regard this plant is working illegally. There are many manufactures processing small intestine. Also it is not clear how they discard their industrial waste water (Source: Note of In-Depth Interview with representative of Darkhan Us Suvag JSC). They create given amount of job and benefit to the welfare of some households of Darkhan city. Therefore we should consider on that.

Improvement of health condition: Inefficient operation of the sanitation service cause water and soil pollution. It increases the probability of water-based diarrheal diseases. Cost to treat water related diarrheal diseases will be paid by households and public health centres. According to data of Health Department of Darkhan-Uul aimag, 430 cases of water related infectious diarrheal diseases in total registered over past years in Darkhan-Uul aimag. Most of them were cases of hepatitis. However it is not directly related to the water consumption, it is caused by bad hygienic condition. In 2012-2013, there were registered 5 cases of the Salmonella typhimurium and Dysentery. Age of patients was 0-3 years. Looking at social status of the patients, two of them are pupil of kindergarten and three are children in home. There was no death caused by those diseases. But it should be considered that factors influenced to these diseases were not defined.

²¹ <http://www.icc.mn/namem/>

Table 38: Number water related infectious diarrheal diseases cases

Type of disease	2012	2013
Dysentery	0	1
Typhoid	0	0
Salmonella typhimurium	3	1
Hepatitis	277	124
Diarrheal caused by bacteria	22	2

Source: Health Department of Darkhan-Uul aimag

Pleasant environment for residents: Frequent fill up of waste water in open space and basement of the apartments and other buildings raises unpleasant condition to neighboring residents such as bad smell and growing mosquitoes and other parasites etc. Due to this condition not only apartment area residents, but also ger area residents can't go for recreation, playing and walking in their living environments.

According to the institutional regulation public utilities, Darkhan Us Suvag Company is responsible for all activities related to the water supply and sanitation services. In case of blockage and fill up of waste water the company should solve the problem.

But sewerage pipes and lines in the basements of apartments are possessed by Apartment Owners' Association and other parts of them are possessed by apartment owners by themselves. Most of waste water blockage and fill up happen in basements of apartments. When plumbers go to the places to solve problem, basements are locked by directors of the Apartment Owners' Association. Also Apartment Owners' Associations don't pay repairing service charge. Therefore this problem may continue several days (Source: Note of In-Depth Interview with representative of Darkhan Us Suvag JSC).

Due to this situation most of apartment basements have waste water and pure water fill ups. This causes of bad smell and growing mosquitoes and other parasites. Mosquitoes in apartments grow even in winter time. Residents see that those may cause diseases. In the winter time apartment basements raises vapor, it influences to the quality and durability of apartments (Source: Note of Focus Group Discussion among representatives of apartment and ger area residents).

In such unpleasant environment residents can't go outside for walking and playing around apartments and street of ger area. Pleasant environment provides the opportunity for all residents to undertake worthwhile activities that can improve the mind, body and spirit. Open spaces may be utilized for exercise, sports activities and other communal physical activities. Recreational facilities for children will allow them to socialize with their peers and pursue outdoor activities.

Improvement of the Kharaa river ecology: Dilapidated and dated equipment causes frequent and significant overflows polluting the Kharaa river basin with negative environmental impacts: decline of water level, water pollution, scarce of aquatics etc. Saving Kharaa River is important for not only residents of Darkhan city but also for all habitants around that Kharaa River basin. For the residents of Darkhan city headwater and ground water source of Darkhan city depend on Kharaa River. Residents can use public recreational facilities, particularly the improved quality of river water for bathing or other recreational activities.

According to the Water Convention and Bilateral Agreement between Mongolian and Buryat Autonomy of Russian Federation we are responsible for not providing waste water to the Lake Baikal. Therefore every year we discuss about the implementation of the Bilateral Agreement. Improvement of waste water treatment plant of Darkhan will benefit to the ecological condition of the Kharaa River (Source: Note of In-Depth Interview with representative of Environmental Department of Darkhan-Uul aimag).

As mentioned before Meteorology and Environmental Monitoring Service in Darkhan-Uul aimag does monitoring every quarter to the waste water treatment plants by 7 chemical bacteriological indicators according to the order Chairman of National Agency of Meteorology and Environmental Monitoring Service, dated in 3 November 2011. Meteorology and Environmental Monitoring Service in Darkhan-Uul aimag does monitoring Also they do monitoring on the two points of Kharaa River (before and after Darkhan city). Result of the monitoring could be used for outcome indicators of DMF of the project.

Negative Impacts of the project:

At a much earlier stage, during construction, there will be noise and air pollution as well as additional waste to be accumulated. There are no other negative impacts determined. To recover investment cost, tariff of the sanitation service may be increased.

3 GENDER AND DEVELOPMENT

The Project is classified as some gender elements²² (SGE) which some significant efforts should be made during project preparation. In the beginning project implementation following measurements should be taken, namely (a) incorporate gender concerns in the planning, design, and implementation improvement of sanitation service, (b) organize awareness campaign among women of the households on importance of the project and training on maintaining sanitation facilities in proper ways, and (c) strengthen participation of women in project implementation.

3.1. Gender Issues

In the planning, design and implementation of the project, the key gender-related issues are (i) integration of gender-specific needs in project design and implementation, (ii) awareness of women importance of the project and knowledge on treating sanitation facilities in proper ways, and (iii) ensuring the participation of women in community decision-making activities.

Women, being mainly responsible for water-related tasks and other responsibilities associated with household sanitation, health and hygiene should be consulted on appropriate design features. The design of the sanitation infrastructure and services should respond to the specific and varying needs of women and men, such as the physical amenities. The participation of women in community affairs at the residents' meeting was observed to be high, as shown by the number of women attendees in the meeting of Apartment Owners Association. However, there are generally more men chairmen in the Apartment Owners Association. Equal involvement of women and men in the project activities will be assured through the community action planning and consultations throughout the implementation period of the project.

Among household 53 percent of family member, who are mainly responsible for sanitation issues of household are women according to the result of the household socio economic survey. It needs to implement awareness campaign among main project beneficiaries, namely of women residents of apartments to implement project successfully and to ensure sustainability of project effectiveness. For them we should organize public awareness campaigns on recommendations on how to work with sanitation facilities such, what can or can't be throw to the sanitation facilities and to use oil solvent agents for washing dishes etc (Source: Note of In-Depth Interview with representative of Darkhan Us Suvag JSC).

Addressing these gender concerns would entail close consultation and collaboration with women, from project design, implementation, operations, and monitoring and evaluation. The general strategy proposed under the project is to ensure that the design features of the infrastructure will be gender-responsive, appropriate, and affordable to the target users.

3.2. Positive Gender Impacts

Focus group discussions with community representatives from apartment area and ger area have identified the perceived gender impacts of the proposed sanitation improvement projects. For improved sanitation, the anticipated impacts of the project include (a) lesser time and energy spent to solve sanitation related issues, especially among women household members, thus more time for other household tasks or time for productive/income-generating work; and (b) better hygiene practices. The risk of women and children to infectious diseases and water-borne diseases, and consequently the medical costs on these diseases, will be reduced due to improved sanitation facilities at home and at schools. The improvement of the sewerage systems will likewise lessen the risk of contagious or communicable diseases brought by improper collection, disposal, and treatment of domestic waste water.

²² <http://www.adb.org/sites/default/files/guidelines-gender-mainstreaming-categories-adb-projects.pdf>

4 PARTICIPATION AND EMPOWERMENT

Consultations and discussion with the target communities in Darkhan city were conducted by the social expert. Inputs to the design of Project were gathered through Household socio-economic survey (for apartment households and ger area households); focus group discussions with representatives of apartment and ger area residents; and key informant interviews (or In-Depth Interviews) with key stakeholders including representatives of implementing entities, government agencies, business units and Apartment Owners Association. From the result surveys following conclusions could be made related to the participation and empowerment:

Participation of residents to the community activities is not so much, but they want to participate to it. Only few apartment residents participated to the meeting of Apartment Owners' Association. Participants are elders and unemployed people, who are in home. This is same in ger areas for bagh residents meetings etc. One representative resident of ger area mentioned that most of residents, both husband and wife of household in our area work in food market of Old Darkhan. They work six days of week until from 19:00PM to 20:00PM. Therefore they don't have time to participate this kind of activities and they want to rest.

In the household socio-economic survey we asked "Would you be ready to actively participate for development and implementation of project to improve water supply and sanitation service if it provides opportunity to participate?" and 85.5 percent of respondents answered "Yes". Most of residents or 93.0 percent of respondents are willing to do any improvements in their living area, if given a chance.

Therefore it should be allowed to residents' communities to participate in the project planning and implementation. Their participation should be consultation for project planning and designing and M&E activities of project implementation.

Participation of entrepreneurs and business to the project planning and implementation is crucial. Main customers of sanitation service in Darkhan city are businesses. Current situation of sanitation service and planned improvement of WWTP of Darkhan city influences and will influence business activities of private and public enterprises. Manufacturing sector, especially leather processing manufactures needs special requirements to treat industrial waste water. And hotels, restaurants and other service businesses will be affected by project implementation. The design of sanitation service should respond to the specific and varying needs of industries. Therefore consultation and monitoring and evaluation of representatives of business should be included in the consultation and participation plan. It can be done by their representing organizations such as branches of Commerce and Industry Chamber and Mongolian Employers Federation in Darkhan-Uul aimag.

Willingness to pay for improved service. Respondents mentioned that if we organize public awareness activities for understanding importance and rationale of new project among residents well, then motivation of willingness to pay for improved service will be high. But implementation should be transparent and participatory, and payment should be based on the residents' welfare level and income. When Darkhan city constructed monument for 50th anniversary of Darkhan city, people are very active to collecting donation and funding.

There should be active leading participation of the Apartment Owners Associations to the project planning and implementation. Apartment Owners Association is considered one of key stakeholders for planning and implementing the project by residents and implementing agencies. Most of issues related to sewerage system are related to them. But they don't work as much residents want.

Sewerage pipes and lines in the basements of apartments are possessed by Apartment Owners' Association and other parts of them are possessed by apartment owners by themselves. Most of waste water blockage and fill up happen in basements of apartments. When plumbers go to the places to solve problem, basements are locked by directors of the Apartment Owners' Association. Also Apartment Owners' Associations don't pay repairing service charge. Therefore this problem may continue several days.

It needs to do organizational or institutional regulation of participants to the sanitation service. As mentioned above one of main problems is institutional regulation among key stakeholders to the sanitation service. In Darkhan city, Darkhan Us Suvag JSC is responsible for all activities of water supply and sanitation service. They extract water, send it to all customers and collect back industrial and domestic waste water and treat it. Other part should be responsible for part of activities Apartment Owners Association should be responsible for maintaining sewerage pipes and line in their apartments etc. Also Public Utility Company should participate to these activities same as Ulaanbaatar and other cities.

Residents worry about the environmental issues, especially pollution of the Kharaa River and they want to do something to solve this problem. Residents of Darkhan city named pollution of the Kharaa River in the second place after air pollution among selected environmental and social infrastructure issues and 83.3 percent of respondents answered this issue is existed in their living area. Six out of ten respondents or 64.1 percent of respondents supported re-use of grey water. 40.8 percent of respondents mentioned that we have to re-use treated grey water for toilet flushing.

Table 39: Respondents opinion on re-using grey water

	Number	Percent
We should use treated grey water for toilet	84	40.8
We should use treated grey water for industrial purposes	21	10.2
We should use treated grey water for agriculture	8	3.9
We should use treated grey water for services such as car washing etc.	4	1.9
We should use treated grey water for household purposes such as backyard garden, lawn, animals, or use for household washing activities etc.	15	7.3
We don't need to re-use grey water.	74	35.9
Total	206	100.0

Source: Household Socio-Economic Survey, February 2014.

In the household socio-economic survey we asked “Assume that WWTP of the Darkhan city allows to re-use water for industrial and household purposes and additional investment from all households in Darkhan city need for improvement. In this case how much money would you pay for investment once? Also assume that all households pay same amount of money”.

55.0 percent of total respondents answered to this question. Based on this information Darkhan city residents expressed that they can pay in average 14,036 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment which WWTP of the Darkhan city allows to re-use water for industrial and household purposes. Most repeated amount (mode) was 10,000 MNT.

Table 40: Statistical indicators of WTP for investment which WWTP of the Darkhan city allows to re-use water for industrial and household purposes

N	Valid	110
	Missing	0
Mean		14036.4
Median		10000.0
Mode		10000
Std. Deviation		17666.9
Minimum		500
Maximum		100000

Source: Household Socio-Economic Survey, February 2014.

We also asked question “Would you pay money for public recreational facility in the Kharaa River for bathing or other recreational activities, if you have to pay money building it?” 68.0 percent of total respondents or 136 respondents answered yes to this question. Out them 90 respondents said given amount of money to question of “How much money would you pay for invest once?” Residents of Darkhan city expressed that they can pay in average 15,122 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment of public recreational facility in the Kharaa River for bathing or other recreational activities, if they have to pay money building it. Most repeated amount (mode) was 10,000 MNT.

Table 41: Statistical indicators of WTP for investment of public recreational facility in the Kharaa River for bathing or other recreational activities

N	Valid	90
	Missing	0
Mean		15122.2
Median		10000.0
Mode		10000
Std. Deviation		24986.5
Minimum		500
Maximum		100000

Source: Household Socio-Economic Survey, February 2014.

According to the result of IDI or KII, there are two non government organizations working for protection of Kharaa River, namely “Burkhantiin Gazar Shoroo” NGO and “Mongol Baigali Delhiid Gants” NGO. They can participate to the project planning and implementation. They would implement activities such as public awareness campaign to residents and businesses to understand importance of the project implementation in terms of environmental and ecological aspects.

Residents don’t have knowledge and information about the water supply and sanitation service of the Darkhan city and have not realized there are problems. One quarter of Darkhan city resident don’t know what organization provide water supply and sanitation service to them. Almost half of ger area residents don’t know what organization provide water supply and sanitation service to them.

Table 42: Percentage of respondents who said know what organization provide water supply and sanitation service, by location

Location	Yes%
In ger area	51.6
In apartment	77.0
Total	73.0

Source: Household Socio-Economic Survey, February 2014.

Also apartment residents don’t realize that sanitation service in Darkhan city is problematic as other stakeholders expected such as Darkhan Us Suvag JSC, Apartment Owners Association and City Mayor’s Office. Residents of Darkhan city named poor sanitation service in eighth place among 12 selected environmental and social infrastructure issues and 61.0 percent of respondents answered this issue is existed in their living area. 70.0 percent of ger area respondents said this issue is existed in their living area, while 52.0 percent of apartment residents said this issue is existed in their living area.

Table 43: Satisfaction level of residents on current sanitation service, by location

Evaluation	In ger area		In apartment	
	Count	Column N %	Count	Column N %
Very poor	32	32.0%	2	2.0%
Poor	51	51.0%	18	18.0%
Average	17	17.0%	31	31.0%
Good	0	0.0%	49	49.0%
Very good	0	0.0%	0	0.0%

Source: Household Socio-Economic Survey, February 2014.

No one of ger area residents is satisfied with current sanitation situation. 80.0 percent of apartment area residents satisfied with current sanitation situation. However apartment residents don't realized that sanitation service is not problematic, other implementing parties realized many issues related to sanitation service in Darkhan city. Therefore we need well designed public awareness campaign and public relationship activities to increase public awareness. Those activities should cover not only understanding of project importance but also customers' education how to work with sanitation facilities.

The consultations with the target beneficiaries and key stakeholder groups will be established as an integral process in the overall project, as specified in the Community Action Plan (CAP), and Consultation and Participation Plan (Appendix II).

5 SOCIAL RISKS AND VULNERABILITIES

5.1. Affordability of Improved Service Tariff

Improvement to WWTP will significant amount of investment. To recover investment cost tariff of the service will increase. It could influence to living and welfare of households and operational cost of businesses.

To analyze affordability of improved service tariff we asked whether residents pay increased tariff for improved service from apartment households in the household socio-economic survey.

Table 44: Bid prices used in the WTP analysis and number of households asked and accepted the bids

Number	Bid price	Total HHs	Number of HHs accepted bid	Percentage of accepted households
Bid 1	800 MNT cube meter	23	20	87.0
Bid 2	900 MNT cube meter	22	17	77.3
Bid 3	1,000 MNT cube meter	20	16	80.0
Bid 4	1,250 MNT cube meter	15	12	80.0
Bid 5	1,500 MNT cube meter	20	14	70.0
Total		100	79	79.0

Source: Household Socio-Economic Survey, February 2014.

According to WTP analysis or Probit analysis mean WTP for waste water treatment service per cube meter was estimated in 1,076 MNT.

In the Household Socio-Economic Survey we used following scenario:

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment. Consequently the rehabilitation and expansion of the existing WWTP or the development of a new WWTP, meeting national standards and international best practices, is urgently needed. WWTP is operating inefficiently and below capacity. Dilapidated and dated equipment causes frequent and significant overflows polluting the Kharaa river basin with negative environmental and health impacts. Also 10.5 thousand households or 47.7% of total Darkhan city households live in ger area and use simple pit latrine for their sanitation. These “unimproved sanitation systems” increase the probability of water-based diarrheal diseases caused by aquatic organisms that spend part of their life cycle as parasites of animals (e.g. worms). Water borne diseases are the most common of these diseases in Mongolia. These diseases are transmitted through human contact with excreta, insects and non-treated water. Unless improvements in WWTP are introduced, prevailing conditions will remain difficult, or may even worsen due to increasing population. Improvements in WWTP will provide non-monetary benefits like reduced foul-smell, vector insects, and better living conditions or environment all Darkhan citizens, water re-use to water backyard garden, lawn, animals, or use for household washing activities, and public recreational facilities, particularly the improved quality of river/lake water for bathing or other recreational activities. Enhancement of WWTP capacity will allow connecting ger area households for central sewerage system. However, improvement to WWTP will involve additional investment and the provider would expect not only direct users but also all Darkhan citizens to pay taxes, thereby enabling recovery of investment put into the expansion of services. Therefore, public funding would be necessary and it would be collected through an increase in taxes during the five years of the programs.

The main reason for justifying these payments is that both programs have benefits for all Darkhan citizens, since the risk of diseases or even epidemics would be reduced and river would be less polluted. Therefore, we would like you to suppose that there is not enough money available to undertake this program except if all the households of Darkhan city would contribute with their fair share.

Based on the household socio economic survey conducted, the mean WTPs for additional taxes for improved sanitation service were calculated at 19,844 MNT for all households and 19,956 MNT and 19,764 MNT for ger area households and apartment area households, respectively. Ger area households really want have improved sanitation service and condition and they are willing to pay more. It is also shown that apartment area households don't aware that sanitation service is not problematic in Darkhan city.

Table 45: Bid prices used in the WTP analysis and number of households asked and accepted the bids

Bid	Bid price	Ger are households			Apartment area households			Total households		
		Total	Accepted bid	% of accepted	Total	Accepted bid	% of accepted	Total	Accepted bid	% of accepted
Bid 1	10,0 thousand MNT	22	15	68.2	24	18	75.0	46	33	71.7
Bid 2	15,0 thousand MNT	20	13	65.0	17	8	47.1	37	21	56.8
Bid 3	20,0 thousand MNT	19	13	68.4	18	14	77.8	37	27	73.0
Bid 4	25,0 thousand MNT	19	13	68.4	21	13	61.9	40	26	65.0
Bid 5	30,0 thousand MNT	20	13	65.0	20	12	60.0	40	25	62.5
Total		100	67	67.0	100	65	65.0	200	132	66.0

Source: Household Socio-Economic Survey, February 2014.

5.2. Weak Public Awareness and Participation

According to the household socio economic survey result 80.0 percent of apartment area residents are

satisfied with current sanitation situation, while nobody of ger area residents is satisfied with current sanitation situation. However apartment residents don't realized that sanitation service is not problematic, other implementing parties realized many issues related to sanitation service in Darkhan city. Therefore we need well designed public awareness campaign and public relationship activities to increase public awareness. Those activities should cover not only understanding of project importance but also customers' education how to work with sanitation facilities. Also as mentioned before ger area households really want to have improved sanitation service and condition and they are willing to pay more than apartment area households. It is also shown that apartment area households don't aware that sanitation service is not problematic in Darkhan city.

5.3. Unfair Labor Practice

The Project will require significant investments in construction, particularly in the employment of skilled and unskilled labor. If not monitored properly, there is a risk that domestic and foreign private contractors may not comply with national labor laws and regulations (e.g. related to minimum wage, safe working conditions, social security contributions, and international core labor standards, such as right to freedom of association, recognition of collective bargaining, and elimination of all forms of forced or compulsory labor, child labor, and discrimination in employment and occupation.

5.4. Health Risks

The construction activities of the Project are also expected to bring in migrant workers who would temporarily stay in the project areas. This has a potential on attracting sex workers in the area, and increasing the risk to sexually-transmitted diseases. An information, education, and communication (IEC) on HIV/AIDS should be part of the communication strategy for the project in coordination with the Ministry of Health.

6 MITIGATING MEASURES

A Social Development Action Plan (SADP) was prepared to which specified the key activities to mitigate the identified social risks and issues. A summary matrix is attached as Appendix I. The proposed mitigating measures for the identified social impacts and risks are:

6.1. Establishing Community Engagement Work

Community Engagement Work should be in following three levels:

1. Residents' community engagement works: For the apartment area residents main stakeholders will be Apartment Owners' Associations. For the ger area households we should organize community work through bagh governors' office and kheseg leaders.
2. Business entrepreneurs' engagement works: For business entrepreneurs main stakeholders will be branches of Commerce and Industry Chamber and Mongolian Employers Federation in Darkhan-Uul aimag as they are their community representing organizations.
3. Other civil societies or non-government organizations' engagement works: Civil societies will include non-government organizations for environment protection and for urban development.

Community engagement works in the first two levels will be continuous consultation and engagement with target beneficiaries, affected households and businesses, community organizations representing them (Apartment Owners' Association, Chamber of Commerce and Industry and Employers' Federation), women and other vulnerable groups, kheseg and bagh leaders, and other stakeholder groups. Capacity building activities for the Apartment Owners' Association and other residents' communities are also programmed to capacitate them as active and empowered stakeholders in the implementation of the Program.

For other civil societies or non-government organizations' engagement works we have to work with them for capacity building of them on public awareness. They should work for public awareness campaign on how project will benefit to environment, especially Kharaa River ecology and behavioral changes working with sanitation facilities.

6.2. Development and implementation of an Intensive Information, Education and Communication (IEC) Strategy

The overall stakeholder communications strategy (SCS) for the project will involve the establishment of a system for information sharing and consultative activities in line with the Program's Consultation and Participation Plan and other social mitigation plans. The multi-sectoral and complex components under the project are relatively new concepts or approaches for some stakeholders in the Darkhan city. The information on the project goal/objectives, approach, expected outcomes, benefits, implementation arrangements and schedules are to be disseminated for a wider understanding and acceptance of the communities. The specific objectives of the communication strategy for Program are to: (a) establish regular information sharing related to the project details; (b) create a system of two-way information sharing or feedback mechanism between the project executing agencies and the target beneficiaries and affected persons/institutions, and (c) set up an informed and participative stakeholder base for the project. The Stakeholder Communication Strategy is presented as Appendix 3.

Among the key agency for the IEC activities should include discussion on program goals and objectives, project design and components, target beneficiaries, key program benefits, implementation process and arrangements, schedule of civil works schemes, implementation of sectoral programs, main program impacts (positive and negative), and planned mitigation.

Aside from project details and mitigation plans, the IEC strategy will also include a design for create awareness or promote behavioral changes among the target sectors to include topics on: (a) health – the benefits of proper hygiene practices; (b) behavioral changes – recommendation on how to work with sanitation facilities properly; (c) environment – proper waste segregation at the households, and practice of the 3 Rs (reduce, reuse, and recycle) at the community level and among business entrepreneurs and (d) introduction and use of non-pollutive technologies on sanitation.

6.3. Integrating Community Needs in Project Design

In the preparation and planning of the proposed infrastructure projects, integration of gender-specific and other community needs in project design of sewerage. The initial consultations will identify the design recommendations from residents' communities and business entrepreneurs. The specific recommendations on the design should be revisited and considered during the detailed engineering design stage.

6.4. Grievance Redress and Monitoring Mechanism

Implementing agency the Darkhan Us Suvag JSC together with the resident and business community groups should track and process complaints and assess the extent to which progress is being made to resolve them. The monitoring and evaluation report database will include appropriate features for recording, monitoring, and resolving of feedback from target beneficiaries and affected persons. The Darkhan Us Suvag JSC should hire an independent or external review of the implementation of the investments which will be conducted annually, including feedback from those who have used it.

6.5. Mitigation of Risks on Labor

The construction stage should be closely supervised by the implementing agency and community groups and monitored by ADB to comply with national and international labor regulations, such as ensuring minimum wage and safe working conditions for workers. The representatives of community groups should also provide support in the monitoring of construction activities and labor practices based on the core labor standards such as disallowing all forms of forced or compulsory labor, child labor, and discrimination in respect of employment and occupation.

6.6. Ethnic Minorities and Indigenous People

Darkhan city has established in 1961 and is relatively young city compared to other aimag centers and similar with Erdenet city (Bayan-Undur soum of Orkhon aimag). For the development of Darkhan city, Mongolians migrated into Darkhan city from other aimags.

This city was established by support of technical and economic cooperation of the former socialist countries such as Soviet Union, Bulgaria, Poland, Hungary, Czech-Slovakia and Democratic Germany (East). Therefore there were many foreigners from those countries for establishment and development of Darkhan city. During the socialist era Darkhan city was called as “City of Friendship”. After democratic revolution of 1990, number of people from those countries went back their home countries and number foreigners in Darkhan city declined. Now smaller number of nationalities of Russian Federation, Peoples Republic of Chinese, Republic of Korea, Turkey and USA live and work in Darkhan city. According to the result of Population and Housing Census 2010, there were 247 foreign residents in Darkhan city.

Ethnic Mongols account for about 98.9% of the population of Darkhan city and consist of Khalkh and other groups, all distinguished primarily by dialects of the Mongolian language. The Khalkhs make up 82.8% of the ethnic Mongol population of Darkhan city. The remaining 16.9% include Duruvud, Bayad, Zakhchin, Buriad and others. Ethnic distinctions among the Mongol subgroups are relatively minor.

Significant Ethnic Turkic speaker Kazakhs constitute 0.8% of Darkhan city's population. Other Khoton, Tuva, Chantuu live in Darkhan city and they are Mongolized people with Turkic origin and speak in Mongolian (Please see Table 3).

Table 46: Number of population of Darkhan city, by ethnicity and result PHC 2010

Ethnicity	Total	%
Population - Total	74 985	100.0
Mongolian Citizens - Total	74 738	99.7
Khalkh	62 064	82.8
Durvud	3 337	4.5
Bayad	3 109	4.1
Zakhchin	1 358	1.8
Buriad	902	1.2
Uriankhai	859	1.1
Torguud	715	1.0
Kazakh	575	0.8
Khoton	500	0.7
Uuld	436	0.6
Darkhad	224	0.3
Tuva	207	0.3
Khotogoid	140	0.2
Myangad	116	0.2
Dariganga	77	0.1
Mongolian Citizen - other ethnics	106	0.1
Mongolian Citizen - Russian	6	0.0
Mongolian Citizen - Chinese	2	0.0
Mongolian Citizen - other nationals	5	0.0
Foreign citizen	247	0.3

Source: Report on Population and Housing Census 2010 of Darkhan-Uul aimag.

Since the Darkhan city is relatively new city, 60.3 percent of total population of Darkhan-Uul aimag was migrants from other aimags and cities according to the result of PHC 2010. Only 39.7 percent of Darkhan-Uul aimag's population was population living since their births and most of them are 1-40 years old people and relatively young generation. Therefore it can be said that there is no term of Indigenous people in Darkhan city

Table 47: Population of Darkhan-Uul aimag, by migration status

	Total	%
Population - Total	90 642	100.0
Living since birth	35 990	39.7
Migrated in	54 652	60.3
Of which: years of living in Darkhan-Uul aimag		
Up to 1 year	5 803	6.4
1-3 years	9 112	10.1
4 years	1 796	2.0
5-6 years	3 826	4.2
7-9 years	5 268	5.8
10-12 years	6 377	7.0
13-15 years	3 107	3.4
16-19 years	2 538	2.8
20 years and more	16 825	18.6

Source: Report on Population and Housing Census 2010 of Darkhan-Uul aimag

Based on the above mentioned statements, all community members of Darkhan city are fully mainstreamed into the community and may not experienced marginalization. Though the numbers of ethnic groups are just a smaller part of the larger community, it could be concluded that these members of the community are well-integrated and recognized as members of the community. Thus, the proposed project is not expected to have impacts on indigenous peoples or ethnic minorities and categorized as Category C under the Indigenous People's Policy Framework of the ADB, thus no further action is required.

7 RESOURCE REQUIREMENTS

An indicative budget of US\$ 46,500 will be programmed for the implementation of the activities detailed in the social mitigation activities under the Consultation and Participation Plan, Stakeholder Communication Strategy, and GAP, all of which will be integrated under the CAP for Project. The breakdown of total indicative cost is presented in Table 14.

Table 48: Indicative Breakdown of Total Cost for Social Mitigation Plans

Item	Indicative Cost
CAP	10,000
Public awareness campaigns	10,000
Consultation and Participation Plan	18,000
Other social mitigation plans	500
Administrative/Operating cost	8,000
<i>Grand Total</i>	US\$ 46,500

APPENDIX X: SOCIAL ACTION DEVELOPMENT PLAN

Social Impacts/Issues/Risks	Actions	Target Groups	Responsible	Duration	Indicative Budget	Monitoring Indicators
Unaffordable service tariffs	<p>Household socio-economic and willingness to pay (WTP) survey</p> <p>Develop detailed cost structure estimation and release it to stakeholders</p> <p>Set reasonable service tariff consultation with households and businesses</p> <p>Determine proper subsidy scheme</p>	<ul style="list-style-type: none"> Apartment area households and Apartment Owners' Associations (AOAs) Ger area households and bagh and kheseg leaders Business entities, Chamber of Commerce and Industry and Employers' Federation 	<ul style="list-style-type: none"> Darkhan Us Suvag JSC AOAs Chamber of Commerce and Industry Employers' Federation Bagh and kheseg leaders/officials Darkhan City Mayor's Office 	2014-2015	US\$ 5,000 (For consultation activities; Budget incorporated in the CAP)	<ul style="list-style-type: none"> Consultation meetings and workshops organized. Information on cost structure disseminated to the stakeholders. City Mayor's Ordinance / Resolution adopting policy reforms on public utility service
Weak public awareness and participation	<p>Organize training for representatives of implementing agencies (Darkhan Us suvag JSC, Darkhan City Mayor's Office etc.) on techniques and recommendation to organize successful public awareness campaign</p> <p>Organize public awareness campaigns on project benefits and other aspects through possible channels</p>	<ul style="list-style-type: none"> Apartment area households and Apartment Owners' Associations (AOAs) Ger area households and bagh and kheseg leaders Business entities, Chamber of Commerce and Industry and Employers' Federation 	<ul style="list-style-type: none"> Darkhan Us Suvag JSC AOAs Chamber of Commerce and Industry Employers' Federation Bagh and kheseg leaders/officials Darkhan City Mayor's Office 	2014-2015	US\$ 10,000 (For activities of public awareness campaign)	<ul style="list-style-type: none"> Plan on public awareness campaign activities and key message developed. Public awareness on project benefit among residents and business increased.
Suitability of design of proposed infrastructure	Information disclosure of project benefits, risks, impacts	<ul style="list-style-type: none"> Apartment area households and 	<ul style="list-style-type: none"> Darkhan Us Suvag JSC AOAs 	2014	US\$ 8,000	<ul style="list-style-type: none"> Consultation meetings and workshops organized.

Social Impacts/Issues/Risks	Actions	Target Groups	Responsible	Duration	Indicative Budget	Monitoring Indicators
	Consultative activities during detailed engineering design stage	Apartment Owners' Associations (AOAs) <ul style="list-style-type: none"> Ger area households and bagh and kheseg leaders Business entities, Chamber of Commerce and Industry and Employers' Federation 	<ul style="list-style-type: none"> Chamber of Commerce and Industry Employers' Federation Bagh and kheseg leaders/officials Darkhan City Mayor's Office 		(For information dissemination and consultation activities)	<ul style="list-style-type: none"> Specific design recommendations (i.e., specific requirements for industrial requirements) are incorporated in the final detailed designs of sanitation infrastructure
Risk for HIV/AIDS and other communicable diseases in construction areas Risk on noncompliance to labor standards during construction	<ul style="list-style-type: none"> Design and implementation of IEC activities on (a) HIV/AIDS, and (b) national and international labor standards Participatory monitoring during construction 	<ul style="list-style-type: none"> Local residents and migrant workers employed at the construction General public 	<ul style="list-style-type: none"> Health Department of Darkhan-Uul aimag Special Inspection Department of Darkhan-Uul aimag and other local government organizations NGOs and civil societies 	2015 onwards	\$500 for printing of IEC materials to be distributed in the construction areas	<ul style="list-style-type: none"> Final design of Communication Plan prepared IEC materials distributed Public consultations conducted Number of monitoring activities during construction
Sustainability of social mitigation plans and operations of the waste water management system	<ul style="list-style-type: none"> Participatory assessment of project outcomes and impacts of improved services Feedback system, documentation and resolution of grievances related to project implementation Participatory assessment / evaluation of project outcomes 	<ul style="list-style-type: none"> Apartment area households and Apartment Owners' Associations (AOAs) Ger area households and bagh and kheseg leaders Business entities, Chamber of Commerce and Industry and 	<ul style="list-style-type: none"> ADB TA Team for Project Implementation Governor's Office of Darkhan-Uul aimag and its related agencies 	2014 onwards	US\$ 5,000 Budget for development of system	<ul style="list-style-type: none"> Number of capacity building/training workshops related to project management conducted CAP prepared Project monitoring systems and tools established and operational

Social Impacts/Issues/Risks	Actions	Target Groups	Responsible	Duration	Indicative Budget	Monitoring Indicators
		Employers' Federation				

APPENDIX Y: CONSULTATION AND PARTICIPATION PLAN

1. Introduction

Consultation and participation of project affected communities and stakeholders are required by ADB.²³ This exercise is done from the project conceptualization, design, preparation, and implementation stages.

In line with this, a Stakeholder Analysis was undertaken in the lead up to the preparation of the Consultation and Participation Plan (CPP) to identify key stakeholder groups, their interest with respect to proposed project interventions, their perceptions of the problems and issues which the project interventions proposes to address, and determine specific entry points for and level of engagement in project implementation.

The CPP identifies key stakeholders in the project which broadly includes the Government, civil society and the affected groups, and the private sector; outlines the reasons for their involvement in the project; what mechanisms for participation to be used to meaningfully engage them; the parties responsible for facilitating the consultation and participation; and timing and costs.

2. Participation of Stakeholders

Stakeholders include groups or individuals who are either benefited or affected by a policy/project or in reverse, those groups or individuals who can affect the policy/project. Stakeholders may refer to individuals, communities, social groups, and organizations. Generally, the poor and the marginalized (women, children, elderly, disabled, orphans, landless laborers) are often excluded from the process, either because they are unaware and not consulted or, because they do not have a forum to express their views. Identifying and consulting all stakeholders, especially the poor and the vulnerable, is important to ensure that a project meets the needs of all segments of the population. Further, consultations open up the lines of communication between the various stakeholders and the project implementing authorities. Open communication aids the process of resolving conflicts at early stages of the project rather than letting it to escalate into conflicts resulting in implementation delays and cost overrun. Participation of the local community in decision making will give them voice to help in prioritizing projects and identifying cost effective measures in mitigating adverse impacts.

In line with this, consultations and focused group discussions should be conducted by the Darkhan Us Suvag JSC with the apartment area, as well as ger area households, business entrepreneurs, specially who have specific needs (such as leather processing manufactures etc) and other stakeholders.

Project aims to reduce poverty by improving sanitation service. However, this proposed investment must be based on an understanding of the needs and priorities of the target beneficiaries. It is sometimes neglected that the poor who do not have a forum to express their needs are often not consulted in projects and schemes aimed at improving their standard of living. Keeping this in mind, the social expert has developed a consultation and participation strategy for the program identification stage and through the implementation stage, as well as monitoring and evaluation (Table 1).

In addition, the provision of continuous technical assistance in institutionalizing and strengthening the Apartment Owners Associations, residents councils and entrepreneurs councils (such as Employers' Federation and Chamber of Commerce and Industry) during the project preparation should be considered and sustained to ensure active participation and continuous involvement of these organized groups from project implementation until monitoring and evaluation.

3. Implementation Arrangements

The consultation and participation plan will be implemented as part of the overall Community Action Plan (CAP) for the Project. The executing agency (EA) and implementing agency (IA) for the project will be Darkhan Us Suvag JSC. The Darkhan Us Suvag JSC will be working closely with the AOAs, entrepreneurs' councils, NGO representatives, apartment and ger area residents, and the other local government and public service organizations.

²³

As established in the Safeguard Policy Statement (2009) and Public Communication Policy (2011).

4. Indicative Budget

An indicative resource requirement of US\$ 50,000 is programmed for the implementation of the Consultation and Participation Plan, which is part of the overall CAP of Project. The breakdown of cost for the consultation and participation plan budget is incorporated in the CAP budget (Appendix 5).

5. Monitoring and Evaluation

The target outputs or indicators of the Consultation and Participation Plan will be incorporated in the overall monitoring and evaluation of the Project, specifically, in the project monitoring and evaluating systems and tools and Facility Administration Manual. The monitoring of the CPP will be done in a participatory approach with the key stakeholders, including the Darkhan Us Suvag JSC, kheseg and bagh leaders, AOAs, entrepreneurs' councils, NGO representatives, and apartment and ger area households.

Table 1: Consultation and Participation Plan

Project Stage	Target Stakeholder Groups	Agenda/Objectives of Consultations	Outputs of the Consultations ²⁴	Process of Consultations	Level of Participation	Responsible Parties	Indicative Budget
Preparatory Stage/ Detailed Engineering Design Stage	<ul style="list-style-type: none"> ▪ Apartment area households ▪ Ger area households ▪ Private companies ▪ Apartment Owners' Associations ▪ Entrepreneurs' councils ▪ Local government and public service organizations ▪ NGOs and civil societies 	<ul style="list-style-type: none"> ▪ Community needs identification and prioritization ▪ Develop CAP based on needs assessment ▪ Identifications of specific needs of stakeholders (leather processing manufactures, hospitals etc.) ▪ Interests, perceived problems and expected participation of main stakeholders 	<ul style="list-style-type: none"> ▪ CAP ▪ Project design based on needs, affordability, and willingness to participate ▪ Design Monitoring Framework of the project ▪ Specific needs of stakeholders 	<ul style="list-style-type: none"> ▪ Targeted consultations ▪ IDIs and FGDs ▪ Information campaign through print and other media (i.e. newspaper, public bulletins/posters, etc.) ▪ Household survey 	Collaboration (high)	<ul style="list-style-type: none"> ▪ Darkhan Us Suvag JSC ▪ Darkhan City Mayor's Office ▪ Kheseg and Bagh leaders /officials ▪ Apartment Owners' Associations ▪ Employers' Federation and Chamber of Commerce ▪ Social and Gender Specialist ▪ Institutional Specialist ▪ NGOs and other civil societies 	Budget included in the CAP (US\$ 5,000)
Construction/ Implementation Phase	<ul style="list-style-type: none"> ▪ Apartment area households ▪ Ger area households ▪ Private companies ▪ Apartment Owners' Associations ▪ Entrepreneurs' councils ▪ Local government 	<ul style="list-style-type: none"> ▪ Progress of implementation ▪ Civil works schedule ▪ Project impacts and mitigating measures ▪ Strengthening of implementing agency (Darkhan Us Suvag JSC) on monitoring and evaluation ▪ Strengthening of 	<ul style="list-style-type: none"> ▪ Progress reports on project implementation ▪ Needs Assessment and Training Plan for implementing agency and residents' and business councils ▪ Assessment report on status of environmental and social mitigation 	<ul style="list-style-type: none"> ▪ Targeted consultations ▪ FGDs with workshops ▪ Monitoring surveys, site visits ▪ Regular community meetings ▪ Newspaper articles, public bulletin/ announcements 	Participation - community awareness building, participation and compensation (high)	<ul style="list-style-type: none"> ▪ Darkhan Us Suvag JSC ▪ Darkhan City Mayor's Office ▪ Kheseg and Bagh leaders /officials ▪ Apartment Owners' Associations ▪ Local government and public 	Budget included in the CAP (US\$ 5,000)

²⁴ Timing of report submission is upon completion of planned agenda item/consultation

Project Stage	Target Stakeholder Groups	Agenda/Objectives of Consultations	Outputs of the Consultations ²⁴	Process of Consultations	Level of Participation	Responsible Parties	Indicative Budget
	<ul style="list-style-type: none"> and public service organizations ▪ NGOs and civil societies 	<ul style="list-style-type: none"> Apartment Owners' Associations and other residents' councils ▪ Monitoring of environmental and social mitigation measures ▪ Grievance redressal system ▪ IEC on sanitation, hygiene and water conservation ▪ IEC on HIV/AIDS and other communicable diseases, labor standards and safety measures, and road safety 	<ul style="list-style-type: none"> measures, grievance redress mechanisms, labor standards ▪ IEC materials on sanitation and water conservation; HIV AIDS and other communicable diseases 			<ul style="list-style-type: none"> service organizations ▪ Employers' Federation and Chamber of Commerce ▪ NGOs and other civil societies 	
Monitoring and Evaluation	<ul style="list-style-type: none"> ▪ Apartment Owners Associations ▪ Employers Federation and Chamber of Commerce and Industry ▪ Apartment area and ger area households ▪ Local government and public service organizations (such as Health Department, Environment Department and 	<ul style="list-style-type: none"> ▪ Post-construction monitoring / inspection ▪ Feedback system, documentation and resolution of grievances related to project implementation ▪ Participatory assessment of project outcomes and impacts ▪ Participatory assessment / evaluation of progress in project impact indicators 	<ul style="list-style-type: none"> ▪ Inspection report ▪ Documentation on feedback and grievances, if any ▪ Impact monitoring report ▪ Monitoring/progress report prepared by independent stakeholders 	<ul style="list-style-type: none"> ▪ FGDs with workshops ▪ Regular community meetings ▪ Progress Evaluation workshops ▪ Monitoring and evaluation report and indicators 	Collaboration and Participation (medium)	<ul style="list-style-type: none"> ▪ Darkhan Us Suvag JSC ▪ Darkhan City Mayor's Office ▪ Kheseg and Bagh leaders /officials ▪ Apartment Owners' Associations ▪ Employers' Federation and Chamber of Commerce ▪ Local government and public service 	Budget included under the Implementation phase of CAP (US\$ 5,000)

Project Stage	Target Stakeholder Groups	Agenda/Objectives of Consultations	Outputs of the Consultations ²⁴	Process of Consultations	Level of Participation	Responsible Parties	Indicative Budget
	Meteorology and Environmental Monitoring Service of Darkhan-Uul aimag etc.)					<ul style="list-style-type: none"> organizations ▪ NGOs and other civil societies 	

APPENDIX Z: STAKEHOLDER COMMUNICATION PLAN

A. Project Background

The Asian Development Bank (ADB) sector Loan 2301, approved on 19 December 2006, has been financing water supply, wastewater treatment, small loans for utility connection, and other urban infrastructure and capacity development for Mongolian cities and their ger areas in five provinces. The Government of Mongolia through its Ministry of Economic Development, and Ministry of Construction and Urban Development requested from ADB additional financing to Loan 2301 of \$20 million to support wastewater treatment and wastewater management improvement for Darkhan city.

The additional financing is intended to support the technical rehabilitation and expansion of the existing Darkhan wastewater treatment plant (WWTP) if found appropriate during the assessment, or if deemed necessary, the construction of a new WWTP, and potential additional sub-projects in the areas of water supply and sanitation in Darkhan city. The additional financing and its project preparatory technical assistance (TA) activity are aligned with the government's 2012–2016 Action Program, which includes objectives to improve public utility services and networks in provincial centers and significant expansion of industrial development in Darkhan city. The activity is aligned with ADB's country partnership strategy for Mongolia, 2012–2016, which includes the support for water supply, and other municipal infrastructure and services. The project is performing well and is in compliance with ADB's eligibility criteria for additional financing.

The expected project impact of the additional financing will be sustainable urban environment in Darkhan city and the Kharaa River Basin. The outcome will be improved wastewater treatment and management for domestic and industrial users in Darkhan city. Project outputs will be (i) technically modernized and expanded, or newly-constructed WWTP in Darkhan, and (ii) institutional capacity strengthened and wastewater management operation improved. The total number of the project's beneficiaries is expected to exceed 130,000 people, as well as industries and businesses in Darkhan.

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment. Consequently the rehabilitation and expansion of the existing WWTP or the development of a new WWTP, meeting national standards and international best practices, is urgently needed. Currently the city's wastewater is collected through 97 kilometers of sewerage pipes, and treated in the WWTP, which started operation in 1965 with a design capacity of 50,000 cubic meters/day, treating both, industrial and domestic wastewater. Current wastewater inflow and treatment is approximately 21,200 cubic meters/day, with the WWTP operating inefficiently and below capacity. Dilapidated and dated equipment causes frequent and significant overflows polluting the Kharaa river basin with negative environmental and health impacts.

Following ADB's Public Communications Policy 2011 and Safeguard Policy Statement (SPS) 2009, a mechanism for a stakeholder feedback is required early in the project design stage to ensure that the key stakeholder groups are engaged in the project, particularly the target beneficiaries, affected persons/groups, and poor and vulnerable sectors. A Stakeholder Communication Strategy (SCS) for the Darkhan Waste Water Management Improvement Project should aim to provide a platform for an active, inclusive, and transparent communications process among different stakeholder groups throughout Program implementation. For some stakeholder groups, the project would require the implementation of new or complex concepts, such as penetration of new technologies, behavioural change working with sanitation facilities and, institutional regulation reform. The proposed interventions will be difficult to implement without the clear understanding and acceptance of the target stakeholder groups.

The key stakeholders groups who are critical in attaining the expected outputs of the project and lessening the project-specific risks include: (a) government agencies or units responsible for the design, management and implementation of the project, at the bagh, city, and aimag levels; (b) community organizations such as Branch Council of Apartment Owners Associations (AOAs), Chamber of Commerce and Industry and Employers' Federation in Darkhan-Uul aimag (c) residents and entrepreneurs in Darkhan city, (d) Local government organizations and public service organizations and (e) nongovernment organizations (NGOs) or civil society groups working for environmental protection and urban development.

B. Communication Objectives

The overall stakeholder communications strategy (SCS) for the Project will involve the establishment of a system for information sharing and consultative activities in line with the Project's Consultation and Participation Plan and other social mitigation plans. The information on the project's goal/objectives, approach, expected outcomes, benefits, implementation arrangements and schedules are to be disseminated for a wider understanding and acceptance of the communities.

The specific objectives of the communication strategy for the Project are to:

- Establish regular information sharing related to the Project details.
- Create a system of two-way information sharing or feedback mechanism between the project executing agencies and the target beneficiaries and affected persons/institutions.
- Set up an informed and participative stakeholder base for the Project.

The Stakeholder Communication Strategy (SCS) presented in Table 1 outlines the communication objectives, risks, key messages, and the proposed communication channels which will engage the target stakeholders.

Table 1. Stakeholder Communication Strategy

Objective	Stakeholder Groups	Messages/ Information	Activity	Timing	Responsible/ Channels	Resources/ Materials	Expected Outcomes	Risks/ Challenges
Establish a regular flow of information about the Project details	<ul style="list-style-type: none"> Residents Entrepreneurs Apartment Owners' Associations (AOAs) Employers' Federation (EF) and Chamber of Commerce and Industry (ICC) Local government and public service organizations Civil society groups, NGOs 	<p>Program goal/objectives, design and components, target beneficiaries, key program benefits, implementation process and arrangements</p> <p>Main project impacts (positive and negative)</p> <p>Planned mitigation measures (including CAP, GAP, CPP, SADP)</p>	<p>Activities:</p> <ul style="list-style-type: none"> Awareness campaigns/public campaigns Media (i.e., TV broadcasting, newspaper, web) Print materials (i.e., primers/FAQs/brochures on Project, posters or notices) CAP workshops Consultative public meetings FGDs Periodic Progress Reports (i.e. Monthly, Bi-Annual, Annual Progress Reports) 	<p>From commencement of project/social preparation stage</p> <p>Regular scheduled events for CAP workshops/FGDs</p> <p>Monthly program progress update meetings (throughout program implementation) based on Monthly Progress Reports</p>	<ul style="list-style-type: none"> Darkhan Us Suvag JSC AOAs CCI EF Bagh Governor's Office Mayor's Office of Darkhan City <p>Channels:</p> <ul style="list-style-type: none"> Kheseg leaders Bagh officials AOAs CCI and EF 	<p>Costs and materials for:</p> <ul style="list-style-type: none"> Preparation of content on Program information (i.e., FAQs, primers, PowerPoint materials, posters, etc.) Printing and dissemination of materials Designation of community liaison officers and local communication specialist Logistical requirements for meeting venues <p>Cost included in the CAP and GAP</p>	<p>Understanding of Program goal/objectives, approach, components, benefits, impacts, related safeguards concerns among affected population, limitations of scope of Project, and other project-related information.</p> <p>XX% of target apartment and ger area population of Darkhan city and business entities participating in consultation and communication activities</p>	<p>Complex technical terminologies</p> <p>Language/Culture</p> <p>Literacy of the target stakeholders</p> <p>Managing expectations of target stakeholders</p> <p>Low interest and participation of residents (due to work schedules and other commitments)</p>
Establish a system of two-way information sharing/feedback mechanism between the Project executing agencies and	<ul style="list-style-type: none"> Residents Entrepreneurs Apartment Owners' Associations (AOAs) 	<p>Importance of feedback/dialogue mechanism</p> <p>Feedback mechanism procedures</p> <p>Social and environment mitigation plans including</p>	<p>Activities:</p> <ul style="list-style-type: none"> Bagh government mechanisms among apartment and ger areas 	<p>From commencement of project/social preparation stage throughout implementation</p> <p>Regular scheduled</p>	<ul style="list-style-type: none"> Darkhan Us Suvag JSC AOAs CCI EF 	<p>Costs and materials for:</p> <ul style="list-style-type: none"> Content preparation on Project information 	<p>Community-specific and gender-specific inputs into project design or implementation</p> <p>Early identification and resolution of conflicts or issues related to project</p>	<p>Identifying local authorities/representatives who will effectively dialogue with the Darkhan Us Suvag JSC</p> <p>Language/culture.</p>

Objective	Stakeholder Groups	Messages/ Information	Activity	Timing	Responsible/ Channels	Resources/ Materials	Expected Outcomes	Risks/ Challenges
the target beneficiaries and affected persons/institutions.	<ul style="list-style-type: none"> Employers' Federation (FI) and Chamber of Commerce and Industry (ICC) Local government and public service organizations Civil society groups, NGOs 	resettlement plan, CAP, GAP, SADP Integrating stakeholder inputs in the design and implementation of the program	<ul style="list-style-type: none"> Public consultative meetings Meetings AOAs, CCI and EF CAP workshops and training Project Steering Committee meetings. 	events for CAP workshops/FGDs Monthly project progress update meetings Monthly civil works update meeting	<ul style="list-style-type: none"> Bagh Governor's Office Mayor's Office of Darkhan City Channels: <ul style="list-style-type: none"> Kheseg leaders Bagh officials AOAs CCI and EF 	<ul style="list-style-type: none"> Printing and dissemination of materials Primer on Feedback Mechanism Logistical requirements for meeting venues Cost included in the CAP and GAP	design or implementation Immediate identification of areas for improvement in project components and implementation arrangements	Systematic grievance redress system quick respond to issues Low interest and participation of residents (due to work schedules and other commitments)
Set up an informed and participative stakeholder base for the Program.	<ul style="list-style-type: none"> Residents Entrepreneurs Apartment Owners' Associations (AOAs) Employers' Federation (FI) and Chamber of Commerce and Industry (ICC) Local government and public service organizations Civil society groups, NGOs 	Establish and strengthening of participation of primary groups of residents (AOAs etc.) in Project 1 to 3 implementation Social and environmental safeguards policies under the Program Local and national policies and programs related to support to poor and vulnerable, gender and development, health and sanitation, environmental protection etc. Implementation of social and environment mitigation plans	Activities: <ul style="list-style-type: none"> Meetings of AOAs, CCI and EF CAP workshops and training Orientation/training on social and environmental safeguards policies Public consultative meetings 	From commencement of project throughout implementation Regular CAP workshops for next Project tranches Monthly program progress update meetings	<ul style="list-style-type: none"> Darkhan Us Suvag JSC AOAs CCI EF Bagh Governor's Office Mayor's Office of Darkhan City Channels: <ul style="list-style-type: none"> Kheseg leaders Bagh officials AOAs CCI and EF Children and Family Development Division 	Logistical requirements and costs for meeting venues Cost included in the CAP and GAP	Pool of active and informed stakeholders/ advocates who will have the institutional memory of the project	Technical capacity of community stakeholders Low interest and participation of residents (due to work schedules and other commitments) Possible change in residence of active members

Objective	Stakeholder Groups	Messages/ Information	Activity	Timing	Responsible/ Channels	Resources/ Materials	Expected Outcomes	Risks/ Challenges
					<ul style="list-style-type: none"> • Health Department of Darkhan-Uul Aimag • Labor Department of Darkhan-Uul aimag • Environment Department of Darkhan-Uul aimag 			

APPENDIX AA: COMMUNITY ACTION PLAN

1. Project Background

The Asian Development Bank (ADB) sector Loan 2301, approved on 19 December 2006, has been financing water supply, wastewater treatment, small loans for utility connection, and other urban infrastructure and capacity development for Mongolian cities and their *ger* areas in five provinces. The Government of Mongolia through its Ministry of Economic Development, and Ministry of Construction and Urban Development requested from ADB additional financing to Loan 2301 of \$20 million to support wastewater treatment and wastewater management improvement for Darkhan city.

The additional financing is intended to support the technical rehabilitation and expansion of the existing Darkhan wastewater treatment plant (WWTP) if found appropriate during the assessment, or if deemed necessary, the construction of a new WWTP, and potential additional sub-projects in the areas of water supply and sanitation in Darkhan city. The additional financing and its project preparatory technical assistance (TA) activity are aligned with the government's 2012–2016 Action Program, which includes objectives to improve public utility services and networks in provincial centers and significant expansion of industrial development in Darkhan city. The activity is aligned with ADB's country partnership strategy for Mongolia, 2012–2016, which includes the support for water supply, and other municipal infrastructure and services. The project is performing well and is in compliance with ADB's eligibility criteria for additional financing.

The expected project impact of the additional financing will be sustainable urban environment in Darkhan city and the Kharaa River Basin. The outcome will be improved wastewater treatment and management for domestic and industrial users in Darkhan city. Project outputs will be (i) technically modernized and expanded, or newly-constructed WWTP in Darkhan, and (ii) institutional capacity strengthened and wastewater management operation improved. The total number of the project's beneficiaries is expected to exceed 130,000 people, as well as industries and businesses in Darkhan.

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment. Consequently the rehabilitation and expansion of the existing WWTP or the development of a new WWTP, meeting national standards and international best practices, is urgently needed.

2. Current situation of the Community Involvement

Initial consultations and discussion with the target communities in Darkhan city were conducted by the social expert. Inputs to the design of Project were gathered through Household socio-economic survey (for apartment households and ger area households); focus group discussions with representatives of apartment and ger area residents; and key informant interviews (or In-Depth Interviews) with key stakeholders including representatives of implementing entities, government agencies, business units and Apartment Owners Association. From the result surveys following conclusions could be made related to the community involvement:

Participation of residents to the community activities is not so much, but they want to participate to it. Only few apartment residents participated to the meeting of Apartment Owners' Association. Participants are elders and unemployed people, who are in home. This is same in ger areas for bagh residents meetings etc. One representative resident of ger area mentioned that most of residents, both husband and wife of household in our area work in food market of Old Darkhan. They work six days of week until from 19:00PM to 20:00PM. Therefore they don't have time to participate this kind of activities and they want to rest.

In the household socio-economic survey we asked "Would you be ready to actively participate for development and implementation of project to improve water supply and sanitation service if it provides opportunity to participate?" and 85.5 percent of respondents answered "Yes". Most of residents or 93.0 percent of respondents are willing to do any improvements in their living area, if given a chance.

Therefore it should be allowed to residents' communities to participate in the project planning and implementation. Their participation should be consultation for project planning and designing and M&E activities of project implementation.

Participation of entrepreneurs and business to the project planning and implementation is crucial.

Main customers of sanitation service in Darkhan city are businesses. Current situation of sanitation service and planned improvement of WWTP of Darkhan city influences and will influence business activities of private and public enterprises. Manufacturing sector, especially leather processing manufactures needs special requirements to treat industrial waste water. And hotels, restaurants and other service businesses will be affected by project implementation. The design of sanitation service should respond to the specific and varying needs of industries. Therefore consultation and monitoring and evaluation of representatives of business should be included in the consultation and participation plan. It can be done by their representing organizations such as branches of Commerce and Industry Chamber and Mongolian Employers Federation in Darkhan-Uul aimag.

During the discussion with epidemiologist doctor of Health Department of Darkhan-Uul aimag, she mentioned also that specific waste water treatment plant needs for Communicable Disease Division of Central Hospital of Darkhan-Uul aimag. Now not disinfected waste water from patients is supplied to the central sewerage system. That will influence to environmental pollution and spread of communicable diseases.

Willingness to pay for improved service. Respondents mentioned that if we organize public awareness activities for understanding importance and rationale of new project among residents well, then motivation of willingness to pay for improved service will be high. But implementation should be transparent and participatory, and payment should be based on the residents' welfare level and income. When Darkhan city constructed monument for 50th anniversary of Darkhan city, people are very active to collecting donation and funding.

There should be active leading participation of the Apartment Owners Associations to the project planning and implementation. Apartment Owners Association is considered one of key stakeholders for planning and implementing the project by residents and implementing agencies. Most of issues related to sewerage system are related to them. But they don't work as much residents want.

Sewerage pipes and lines in the basements of apartments are possessed by Apartment Owners' Association and other parts of them are possessed by apartment owners by themselves. Most of waste water blockage and fill up happen in basements of apartments. When plumbers go to the places to solve problem, basements are locked by directors of the Apartment Owners' Association. Also Apartment Owners' Associations don't pay repairing service charge. Therefore this problem may continue several days.

It needs to do organizational or institutional regulation of participants to the sanitation service. As mentioned above one of main problems is institutional regulation among key stakeholders to the sanitation service. In Darkhan city, Darkhan Us Suvag JSC is responsible for all activities of water supply and sanitation service. They extract water, send it to all customers and collect back industrial and domestic waste water and treat it. Other part should be responsible for part of activities Apartment Owners Association should be responsible for maintaining sewerage pipes and line in their apartments etc. Also Public Utility Company should participate to these activities same as Ulaanbaatar and other cities.

Residents worry about the environmental issues, especially pollution of the Kharaa River and they want to do something to solve this problem. Residents of Darkhan city named pollution of the Kharaa River in the second place after air pollution among selected environmental and social infrastructure issues and 83.3 percent of respondents answered this issue is existed in their living area. Six out of ten respondents or 64.1 percent of respondents supported re-use of grey water. 40.8 percent of respondents mentioned that we have to re-use treated grey water for toilet flushing.

Table 49: Respondents opinion on re-using grey water

	Number	Percent
We should use treated grey water for toilet	84	40.8
We should use treated grey water for industrial purposes	21	10.2
We should use treated grey water for agriculture	8	3.9
We should use treated grey water for services such as car washing etc.	4	1.9
We should use treated grey water for household purposes such as backyard garden, lawn, animals, or use for household washing activities etc.	15	7.3
We don't need to re-use grey water.	74	35.9
Total	206	100.0

Source: Household Socio-Economic Survey, February 2014.

In the household socio-economic survey we asked “Assume that WWTP of the Darkhan city allows to re-use water for industrial and household purposes and additional investment from all households in Darkhan city need for improvement. In this case how much money would you pay for investment once? Also assume that all households pay same amount of money”.

55.0 percent of total respondents answered to this question. Based on this information Darkhan city residents expressed that they can pay in average 14,036 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment which WWTP of the Darkhan city allows to re-use water for industrial and household purposes. Most repeated amount (mode) was 10,000 MNT.

Table 50: Statistical indicators of WTP for investment which WWTP of the Darkhan city allows to re-use water for industrial and household purposes

N	Valid	110
	Missing	0
Mean		14036.4
Median		10000.0
Mode		10000
Std. Deviation		17666.9
Minimum		500
Maximum		100000

Source: Household Socio-Economic Survey, February 2014.

We also asked question “Would you pay money for public recreational facility in the Kharaa River for bathing or other recreational activities, if you have to pay money building it?” 68.0 percent of total respondents or 136 respondents answered yes to this question. Out them 90 respondents said given amount of money to question of “How much money would you pay for invest once?” Residents of Darkhan city expressed that they can pay in average 15,122 MNT, at minimum 500 MNT and at maximum 100,000 MNT for investment of public recreational facility in the Kharaa River for bathing or other recreational activities, if they have to pay money building it. Most repeated amount (mode) was 10,000 MNT.

Table 51: Statistical indicators of WTP for investment of public recreational facility in the Kharaa River for bathing or other recreational activities

N	Valid	90
	Missing	0
Mean		15122.2
Median		10000.0
Mode		10000
Std. Deviation		24986.5
Minimum		500
Maximum		100000

Source: Household Socio-Economic Survey, February 2014.

According to the result of IDI or KII, there are two non government organizations working for protection of Kharaa River, namely “Burkhantiin Gazar Shoroo” NGO and “Mongol Baigali Delhiid Gants” NGO. They can participate to the project planning and implementation. They would implement activities such as public awareness campaign to residents and businesses to understand importance of the project implementation in terms of environmental and ecological aspects.

Residents don’t have knowledge and information about the water supply and sanitation service of the Darkhan city and have not realized there are problems. One quarter of Darkhan city resident don’t know what organization provide water supply and sanitation service to them. Almost half of ger area residents don’t know what organization provide water supply and sanitation service to them.

Table 52: Percentage of respondents who said know what organization provide water supply and sanitation service, by location

Location	Yes%
In ger area	51.6
In apartment	77.0
Total	73.0

Source: Household Socio-Economic Survey, February 2014.

Also apartment residents don’t realize that sanitation service in Darkhan city is problematic as other stakeholders expected such as Darkhan Us Suvag JSC, Apartment Owners Association and City Mayor’s Office. Residents of Darkhan city named poor sanitation service in eighth place among 12 selected environmental and social infrastructure issues and 61.0 percent of respondents answered this issue is existed in their living area. 70.0 percent of ger area respondents said this issue is existed in their living area, while 52.0 percent of apartment residents said this issue is existed in their living area.

Table 53: Sataisfaction level of residents on current sanitation service, by location

Evaluation	In ger area		In apartment	
	Count	Column N %	Count	Column N %
Very poor	32	32.0%	2	2.0%
Poor	51	51.0%	18	18.0%
Average	17	17.0%	31	31.0%
Good	0	0.0%	49	49.0%
Very good	0	0.0%	0	0.0%

Source: Household Socio-Economic Survey, February 2014.

No one of ger area residents is satisfied with current sanitation situation. 80.0 percent of apartment area residents satisfied with current sanitation situation. However apartment residents don't realized that sanitation service is not problematic, other implementing parties realized many issues related to sanitation service in Darkhan city. Therefore we need well designed public awareness campaign and public relationship activities to increase public awareness. Those activities should cover not only understanding of project importance but also customers' education how to work with sanitation facilities.

3. Community Involvement to the Project Designing and Implementation

As mentioned above, there is needed active involvement of communities representing each group of stakeholder. Goal of the community action plan is to promote an inclusive waste water management improvement of Darkhan city through active involvement of the community members. We could organize community involvement in following levels and through following organizations. Also following detailed activities will be undertaken in the next phases of the project to sustain the involvement of the communities in the detailed design and implementation phases of the project.

Table 54: Expecting Community Involvement

Communities	Representing organizations and bodies	Involvement
Households in apartments	Apartment Owners' Association	<ul style="list-style-type: none"> Organize public awareness campaign among apartment residents on project importance and benefits etc. Organize consultation meetings with apartment residents to define their needs and interest on project designing and implementation. Provide training to apartment residents on how to work with sanitation facilities properly. Participate to the monitoring and evaluation activities during the project implementation.
Households of ger area	Bagh governors and kheseg leaders in ger area	<ul style="list-style-type: none"> Organize public awareness campaign among ger area residents on project importance and benefits etc. Organize consultation meetings with ger area residents to determine their interests to connect central sewerage system. Provide training to ger area residents on hygiene of sanitation facilities and introduction of improved sanitation solution possible to use in ger areas. Participate to the monitoring and evaluation activities during the project implementation.
Business entrepreneurs in Darkhan city	Branch of National Chamber of Commerce and Industry in Darkhan-Uul Aimag or Branch of Mongolian Employers' Federation in Darkhan-Uul Aimag	<ul style="list-style-type: none"> Organize public awareness campaign among business entrepreneurs on project importance and benefits etc. Organize consultation meetings with business entrepreneurs to determine their specific needs related to central sewerage system and sanitation service improvement. Establish and coordinate specific council of business entrepreneurs on project aspects, if they wish. Provide training to business entrepreneurs on how to work with sanitation facilities properly. Participate to the monitoring and evaluation activities during the project implementation.
Government organizations	Darkhan Us Suvag JSC	<ul style="list-style-type: none"> Organize public awareness campaign among government

Communities	Representing organizations and bodies	Involvement
		<p>organizations on project importance and benefits etc.</p> <ul style="list-style-type: none"> Organize consultation meetings with government organizations to determine their interests and roles in the project implementation and how to link it to their activities etc. Participate to the monitoring and evaluation activities during the project implementation.
NGOs working for environmental protection (2 NGOs) and other projects (MoMo-2 project)	Environmental Department of Darkhan-Uul aimag	<ul style="list-style-type: none"> Organize public awareness campaign among general public on water consumption etc. Participate to the monitoring and evaluation activities during the project implementation.

4. Implementation Arrangements

Implementing agency (EA) of Community Action Plan will be Darkhan Us Suvag JSC. Social expert will organize training to management and other related officials of Darkhan Us Suvag JSC on approaches and techniques public awareness campaign and community participation etc.

5. Budgetary Estimates

Budget for CAP is estimated as 15,500USD total. This will include costs of organizing public awareness campaigns and consultation meeting through representing organizations etc.

Table 55: Tentative budget estimates for CAP

Communities	Representing organizations and bodies	Activities	Estimated Budget
Households in apartments	Apartment Owners' Association	<ul style="list-style-type: none"> Organize public awareness campaign among apartment residents on project importance and benefits etc. Organize consultation meetings with apartment residents to define their needs and interest on project designing and implementation. Provide training to apartment residents on how to work with sanitation facilities properly. Participate to the monitoring and evaluation activities during the project implementation. 	5,000USD
Households of ger area	Bagh governors and kheseg leaders in ger area	<ul style="list-style-type: none"> Organize public awareness campaign among ger area residents on project importance and benefits etc. Organize consultation meetings with ger area residents to determine their interests to connect central sewerage system. Provide training to ger area residents on hygiene of sanitation facilities and introduction of improved sanitation solution possible to use in ger areas. Participate to the monitoring and evaluation 	2,000USD

Communities	Representing organizations and bodies	Activities	Estimated Budget
		activities during the project implementation.	
Business entrepreneurs in Darkhan city	Branch of National Chamber of Commerce and Industry in Darkhan-Uul Aimag or Branch of Mongolian Employers' Federation in Darkhan-Uul Aimag	<ul style="list-style-type: none"> Organize public awareness campaign among business entrepreneurs on project importance and benefits etc. Organize consultation meetings with business entrepreneurs to determine their specific needs related to central sewerage system and sanitation service improvement. Establish and coordinate specific council of business entrepreneurs on project aspects, if they wish. Provide training to business entrepreneurs on how to work with sanitation facilities properly. Participate to the monitoring and evaluation activities during the project implementation. 	5,000USD
Government organizations	Darkhan Us Suvag JSC	<ul style="list-style-type: none"> Organize public awareness campaign among government organizations on project importance and benefits etc. Organize consultation meetings with government organizations to determine their interests and roles in the project implementation and how to link it to their activities etc. Participate to the monitoring and evaluation activities during the project implementation. 	500USD
NGOs working for environmental protection (2 NGOs) and other projects (MoMo-2 project)	Environmental Department of Darkhan-Uul aimag	<ul style="list-style-type: none"> Organize public awareness campaign among general public on water consumption etc. Participate to the monitoring and evaluation activities during the project implementation. 	3,000USD

6. Monitoring and Evaluation

The Project TA Team will develop the draft/proposed M&E Framework of the project for this component. This will be presented to the Darkhan Us Suvag JSC for inputs and to inform and consult them on their roles in the monitoring and evaluation.

A Monitoring Committee will be organized to be headed by the Darkhan Us Suvag JSC. The committee will follow the participatory monitoring approach. The system and tools will be put in place based on ADB guidelines as well as experiences from other countries where similar projects have been undertaken.

The committee will determine the frequency of the monitoring of the project. Given the duration of the project, a mid-term evaluation is being recommended and a final evaluation will be necessary to be done by an external evaluator.

APPENDIX BB: GENDER ACTION PLAN

1. Project Background

The Asian Development Bank (ADB) sector Loan 2301, approved on 19 December 2006, has been financing water supply, wastewater treatment, small loans for utility connection, and other urban infrastructure and capacity development for Mongolian cities and their *ger* areas in five provinces. The Government of Mongolia through its Ministry of Economic Development, and Ministry of Construction and Urban Development requested from ADB additional financing of \$20 million to support wastewater treatment and wastewater management improvement for Darkhan city.

The additional financing is intended to support the technical rehabilitation and expansion of the existing Darkhan wastewater treatment plant (WWTP) if found appropriate during the assessment, or if deemed necessary, the construction of a new WWTP, and potential additional sub-projects in the areas of water supply and sanitation in Darkhan city. The additional financing and its project preparatory technical assistance (TA) activity are aligned with the government's 2012–2016 Action Program, which includes objectives to improve public utility services and networks in provincial centers and significant expansion of industrial development in Darkhan city. The activity is aligned with ADB's country partnership strategy for Mongolia, 2012–2016, which includes the support for water supply, and other municipal infrastructure and services. The project is performing well and is in compliance with ADB's eligibility criteria for additional financing.

The expected project impact of the additional financing will be sustainable urban environment in Darkhan city and the Kharaa River Basin. The outcome will be improved wastewater treatment and management for domestic and industrial users in Darkhan city. Project outputs will be (i) technically modernized and expanded, or newly-constructed WWTP in Darkhan, and (ii) institutional capacity strengthened and wastewater management operation improved. The total number of the project's beneficiaries is expected to exceed 130,000 people, as well as industries and businesses in Darkhan.

The planned industrial development in Darkhan will lead to economic and population growth of the city and increase the need for public utility services, including wastewater treatment. Consequently the rehabilitation and expansion of the existing WWTP or the development of a new WWTP, meeting national standards and international best practices, is urgently needed.

2. Local Gender and Development Policies, Programs and Institutions

Gender equality has been one of the primary thrusts of the Government of Mongolia, and the policies which promote this objective and the protection of women and children are the (a) Gender Equality Law (2011), (b) Law on Combating Domestic Violence, (c) Labor Code, (d) Family Law, (e) Law on Social Welfare, and (f) Law on Social Insurance. In line with these policies are the following programs implemented by the government: (g) National Program on Ensuring Gender Equality, (h) National Program on Combating Domestic Violence, (h) National Program on protection from trafficking in children and women with the purpose of sexual exploitation, (j) and Mid-term Strategy and Action Plan for Implementation of the Law of Mongolia on Promotion of Gender Equality (2013–2016). The Action Plan of the Darkhan-Uul aimag Governor (2012–2016) has also set out a provision in providing livelihood support for female-headed households.

The National Committee on Gender Equality is the government body responsible in the implementation of gender equality, and is composed of 16 Ministries of Mongolia as its subcouncil; and 9 districts, 21 provinces, and the city of Ulaanbaatar, as its subcommittees. One gender focal person is assigned at the Darkhan-Uul Aimag Governor's Office, and the social welfare workers at every baghs are assigned as the gender focal persons.

3. Gender Issues

3.1 Country Level Gender Issues

According to the 2009 Reproductive Health Survey of the National Statistics Office (NSO) of Mongolia, the proportion of women-headed households has increased from 10% in 1998 to 15% in 2008. Data from

recent Participatory Living Standards Assessment of the NSO have identified that a disproportionate number of women-headed households are living in poverty and that the proportion is growing. Women are limited to engage in livelihood or employment opportunities because of the tasks at home. Some women, who are employed or engaged in small enterprises, need to work longer hours than men do, just to manage tasks at home and at work. The Time Use Survey (NSO Mongolia, 2009) has noted that single parent households, which are usually women-headed, continue to become more vulnerable. In some cases, women are left alone to manage the household due to death of a husband or divorce. The proportion of poor women-headed households in urban ger areas living without adequate access to water supply and sanitation and other basic infrastructure and services is high (ADB and World Bank, 2005).²⁵

3.2 Women's Involvement to the Sanitation Issues

A household socio-economic survey was conducted as part of social expert's work, with a total of two hundred (200) households in Darkhan city interviewed. Majority of the households are headed by males (79.0%), and with an average household size of 4. One of every five households (21.0%) is headed by females.

Among households, 53 percent of family member, who are mainly responsible for sanitation issues of household are women according to the result of the household socio-economic survey. It needs to implement awareness campaign among main project beneficiaries, namely of women residents of apartments to implement project successfully and to ensure sustainability of project effectiveness. For them we should organize public awareness campaigns on recommendations on how to work with sanitation facilities such, what can or can't be throw to the sanitation facilities and to use oil solvent agents for washing dishes etc.

Frequent fill up of waste water in open space and basement of the apartments and other buildings raises unpleasant condition to neighboring residents such as bad smell and growing mosquitoes and other parasites etc. Due to this condition not only apartment area residents, but also ger area residents can't go for recreation, playing and walking in their living environments. This unpleasant environment negatively influences mostly to women and children.

Open pit latrines are the primary type of toilet facility for ger areas of Darkhan city. About 8% of the respondents of ger area expressed the difficulty and the discomfort of using the open pit latrines, especially during winter and particularly for women, children, and elderly.

Lack of access to safe drinking water and basic sanitation facilities increases the risk of water borne diseases. According to data of Health Department of Darkhan-Uul aimag, 430 cases of water related infectious diarrheal diseases in total registered over past 2 years in Darkhan-Uul aimag. Most of them were cases of hepatitis. However it is not directly related to the water consumption, it is caused by bad hygienic condition. In 2012-2013, there were registered 5 cases of the Salmonella typhimurium and Dysentery. Age of patients was 0-3 years. Looking at social status of the patients, two of them are pupil of kindergarten and three are children in home. There was no death caused by those diseases. But it should be considered that factors influenced to these diseases were not determined. According to the above mentioned information children are most likely to suffer from water borne diseases. Mostly mothers of them or women are responsible for taking care for children while they are sick.

In the planning, design and implementation of the project, the key gender-related issues are (i) integration of gender-specific needs in project design and implementation, (ii) awareness of women residents on importance of the project and knowledge on treating sanitation facilities in proper ways, and (iii) ensuring the participation of women in community decision-making activities.

Women, being mainly responsible for water-related tasks and other responsibilities associated with household sanitation, health and hygiene should be consulted on appropriate design features. The design of the sanitation infrastructure and services should respond to the specific and varying needs of women and men, such as the physical amenities. The participation of women in community affairs at the residents' meeting was observed to be high, as shown by the number of women attendees in the meeting of Apartment Owners Association. However, there are generally more men chairmen in the Apartment Owners

²⁵ Mongolia Country Gender Assessment. Asian Development Bank and World Bank. Manila, Philippines. 2005

Association. Equal involvement of women and men in the project activities will be assured through the community action planning and consultations throughout the implementation period of the project.

Addressing these gender concerns would entail close consultation and collaboration with women, from project design, implementation, operations, and monitoring and evaluation. The general strategy proposed under the project is to ensure that the design features of the infrastructure will be gender-responsive, appropriate, and affordable to the target users.

4. Benefits of Improved Sanitation Service

Focus group discussions with community representatives from apartment area and ger area have identified the perceived gender impacts of the proposed sanitation improvement projects. For improved sanitation, the anticipated impacts of the project include (a) lesser time and energy spent to solve sanitation related issues, especially among women household members, thus more time for other household tasks or time for productive/income-generating work; and (b) better hygiene practices. The risk of women and children to infectious diseases and water-borne diseases, and consequently the medical costs on these diseases, will be reduced due to improved sanitation facilities at home and at schools. The improvement of the sewerage systems will likewise lessen the risk of contagious or communicable diseases brought by improper collection, disposal, and treatment of domestic waste water.

5. Gender Action Plan

The Project is classified as some gender elements²⁶ (SGE) which some significant efforts should be made during project preparation. In the beginning project implementation following measurements should be taken, namely (a) incorporate gender concerns in the planning, design, and implementation improvement of sanitation service, (b) organize awareness campaign among women of the households on importance of the project and training on maintaining sanitation facilities in proper ways, and (c) strengthen participation of women in project implementation.

6. Implementation Arrangements

The executing agency (EA) and implementing agency (IA) for the Project will be Darkhan Us Suvag JSC. Darkhan Us Suvag JSC could cooperate with Social Development Division of Darkhan Aimag Governor's Office, Children and Family Development Division and related non-government organizations and civil societies.

7. Monitoring and Evaluation

The GAP will be incorporated in the overall monitoring and evaluation of the Program, and indicators will be included in the project monitoring and evaluation systems and tools. Specific gender indicators are included in the overall design and monitoring framework (DMF) of the Project. The monitoring of the GAP will be done in a participatory approach with the key stakeholders at the bagh and city levels.

8. Work Plan

The detailed work plan of GAP is presented as following **Table**.

Table 56: Gender Action Plan

Outputs	Action	Indicator	Budget	Responsible Party
Output 1: incorporate gender concerns in the planning, design, and implementation improvement of sanitation service	Organize consultation meetings with apartment and ger area residents to define their needs and interest on project designing and implementation. Conduct Customer Satisfaction Survey of Sanitation service at least 2 times	Customer satisfaction index (CSI) of women residents on sanitation service	Included in the Community Action Plan 4,000 USD Additional cost of Customer satisfaction survey (It could be included in the project output)	Darkhan Us Suvag JSC Apartment Owners' Associations Bagh and kheseg leaders
Output 2: awareness of women residents on importance of the project and knowledge on treating sanitation facilities in proper ways	Organize public awareness campaign among apartment and ger area residents on project importance and benefits etc. Provide training to apartment residents on how to work with sanitation facilities properly. Provide training to ger area residents on hygiene of sanitation facilities and introduction of improved	Public awareness increased. Knowledge on treating sanitation facilities in proper ways increased and evaluated (evaluation could be integrated to the Customer Satisfaction Survey)	Included in the Community Action Plan	Darkhan Us Suvag JSC Apartment Owners' Associations Bagh and kheseg leaders

²⁶ <http://www.adb.org/sites/default/files/guidelines-gender-mainstreaming-categories-adb-projects.pdf>

Outputs	Action	Indicator	Budget	Responsible Party
	sanitation solution possible to use in ger areas.			
Output 3: ensuring the participation of women in community decision-making activities	<p>Organize consultation meetings with apartment and ger area residents through AOAs and bagh and kheseg leaders.</p> <p>Participate to the monitoring and evaluation activities during the project implementation.</p>	Proportion of the participants to the AOAs' meeting and other community meetings	Included in the Community Action Plan	<p>Darkhan Us Suvag JSC</p> <p>Apartment Owners' Associations</p> <p>Bagh and kheseg leaders</p>

Appendix CC: Treatment Plant Reconstruction Sequencing and Design Layout

The technical option recommended by the Consultants and agreed by the State and Aimag Governments and ADB is the reconstruction and modification of elements of the existing wastewater treatment plant and its reconfiguration as an Integrated Fixed-film Activate Sludge (IFAS) system.

The current wastewater treatment plant adopts a conventional activated sludge process arrangement (see figure CC.1, and key plan at CC.). Although due to the low flow-rate (averaging 10,000 cum/day as opposed to the design flow-rate of 50,000 cum/day) only one each of the three primary and secondary clarifiers is operated. However, the entire activated sludge bio-reactor is used, providing a retention time in the aeration basin in excess of one day. The proposal is to:

1. Rehabilitate the existing pump station, inlet works, sand and gravel traps, and replace the associated pumping equipment.
2. Convert one of the primary clarifiers which is currently idle into a balancing tank equipped with sludge mixing equipment.
3. Convert one of the three aeration tanks into an integrated fixed-film activated sludge process reactor comprising three parallel streams each with three chambers representing different treatment zones. This would include provision of new blowers, pumps, fixed-film plastic media etc.
4. Convert one of the secondary clarifiers which is currently idle into a sludge thickening tank with associated sludge pumping equipment
5. Rehabilitate treatment buildings and install a sludge coagulation unit and a sludge dewatering press
6. Provide ultra-violet light disinfection equipment
7. Rehabilitate and equip laboratory and offices
8. Rehabilitate and prepare sludge drying beds and maturation ponds

The arrangement during plant reconstruction, and following completion of the rehabilitation works, is shown in figures CC.2 and CC.3 respectively, and the details of plant operation and configuration are shown in figures CC.4 to CC.6.

The existing plant will continue to be operated during the construction period. Construction works will be carried out in sequence, involving the following steps:

1. Preparation of site road (on the northern side of the existing plant) and preparation of lay-down area. Plant continues under normal operation (as shown in figure CC.7)
2. Rehabilitation and equipping of primary clarifier unit 3 as a balancing tank, and secondary clarifier unit 9 as a sludge thickening tank (in figure CC.8)
3. Section 6 of biological reactor closed in preparation for rehabilitation, system continues to operate with primary clarifier unit 2 and secondary clarifier unit 7, and with sections 4 and 5 of the biological reactor (in figure CC.8).
4. Work starts on structural rehabilitation of reactor section No. 6 to accommodate three IFAS streams, and section 5 of biological reactor is closed for a short period to allow complete rehabilitation of external wall of reactor 6 (see figure CC.9)
5. Internal construction works on reactor 6 completed and equipment installed (see Figure CC.10).
6. Rehabilitation and reconstruction of grit and sand channels and pumps (one stream at a time, plus temporary sand channel arrangement) and pump station and inlet works (one stream at a time) completed, and buildings rehabilitated (see figure CC.11)
7. The rehabilitated and reconfigured pump station, inlet works, sand and gravel removal units and units 3, 6 and 9 are commissioned, and treatment in new IFAS units commenced allowing treatment in temporary WWTP to be discontinued (see figure CC.12).
8. Remedial works are carried out on now disused structures as necessary (mothballed for possible future use)

Figure CC.1: Existing WWTP layout (Operational units in blue)

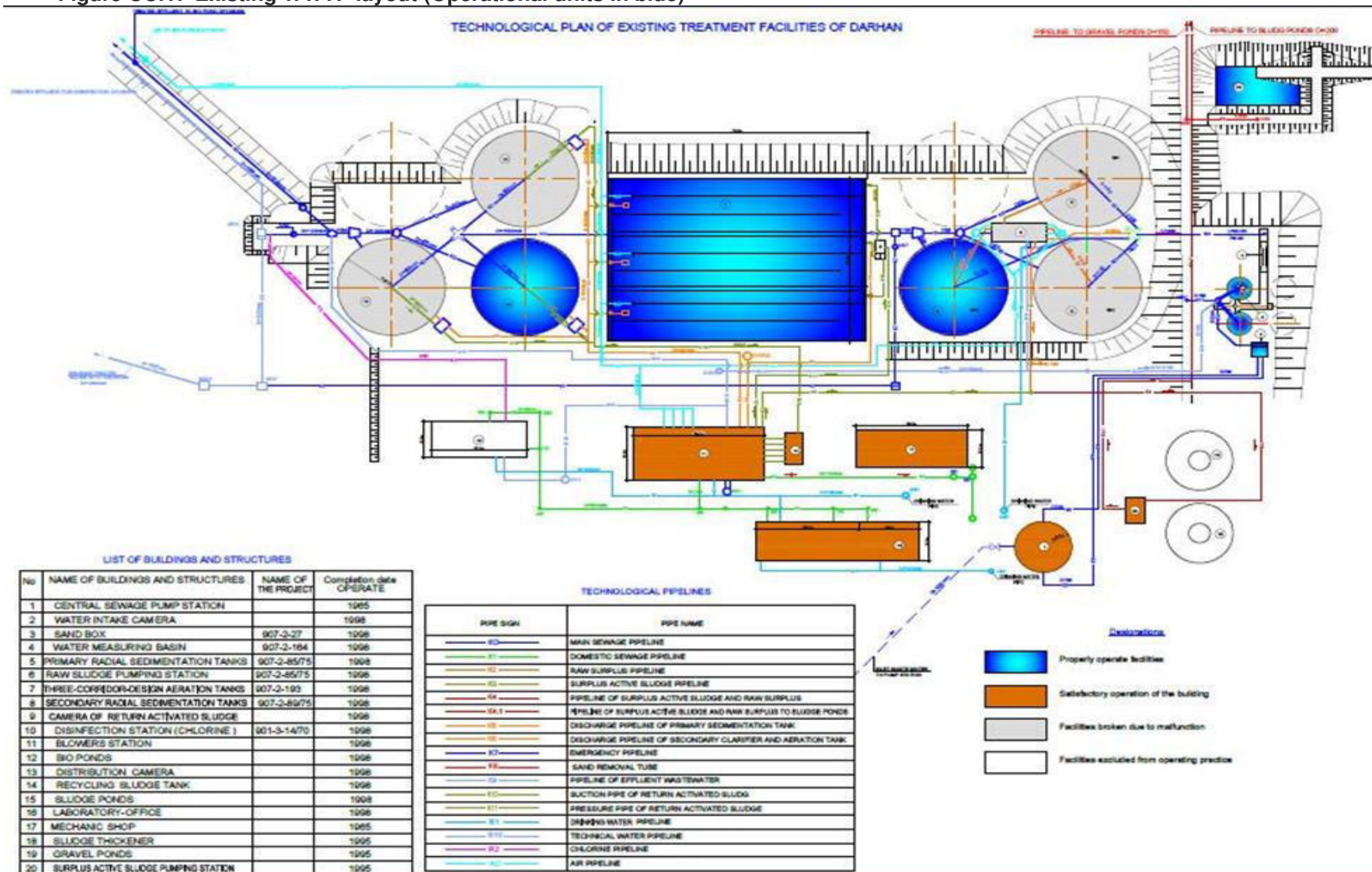


Figure CC.2: WWTP Arrangement During Peak Construction Phase (Operational Units in Blue; Rehabilitated Units in Grey)



Figure CC.3: WWTP Arrangement Following Completion of Construction Phase and Commissioning (Operational Units in Turquoise)



Figure CC.4 IFAS WWTP Arrangement: Two Operational Streams (8,000 cum/day each); One Standby Stream

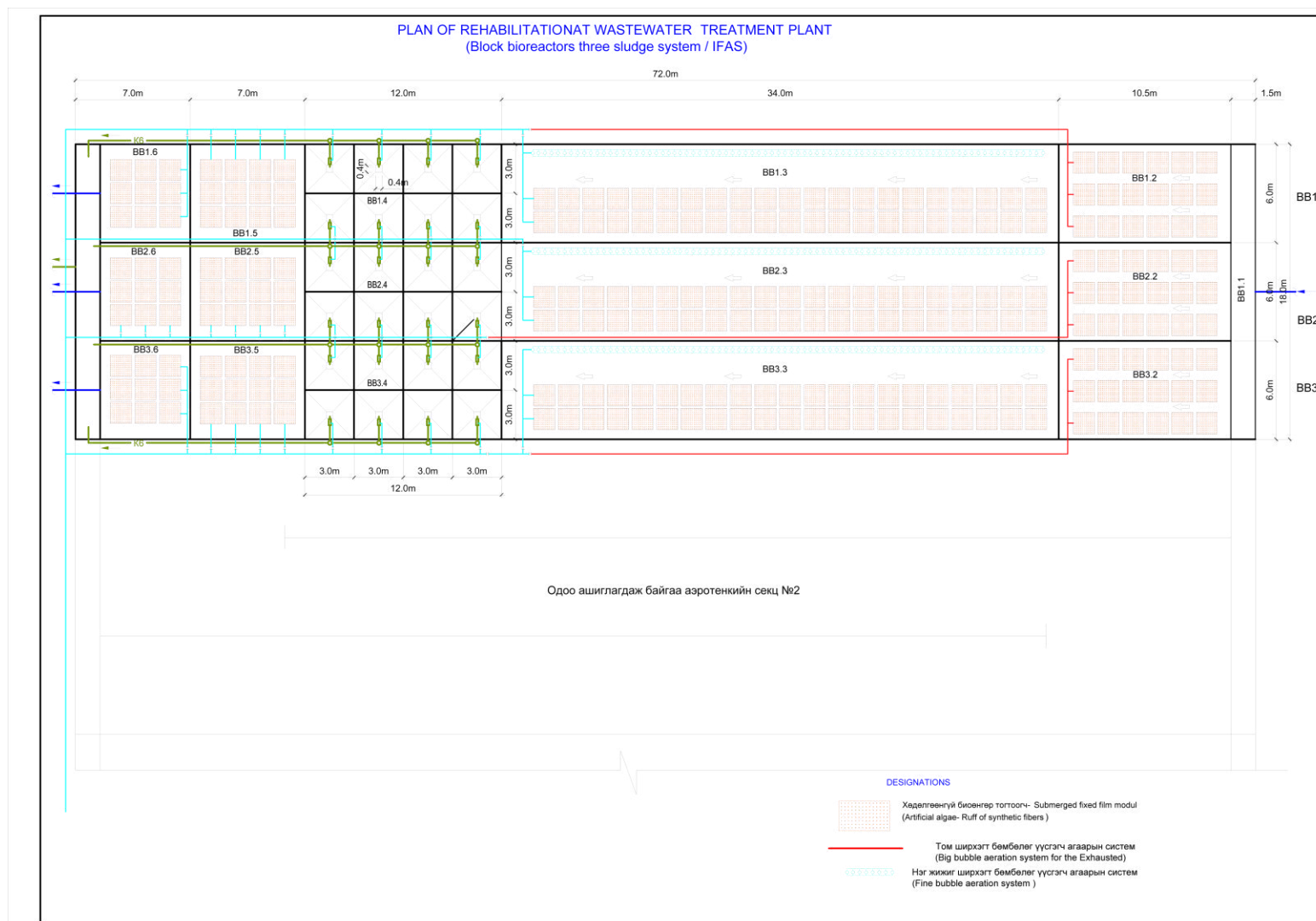


Figure CC.5: IFAS WWTP Arrangement: Schematic Layout

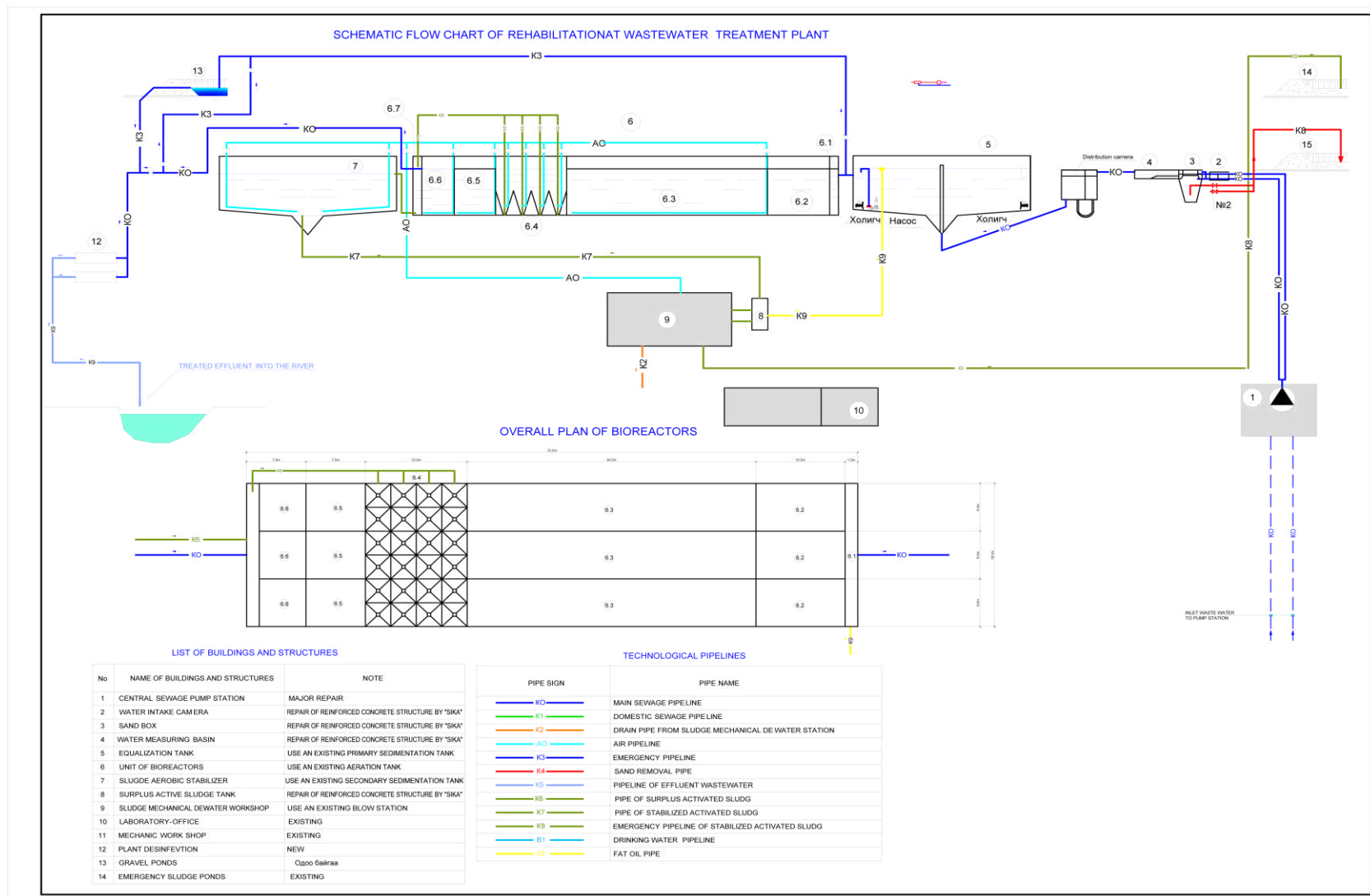


Figure CC.6: IFAS WWTP Arrangement: Schematic Flowchart

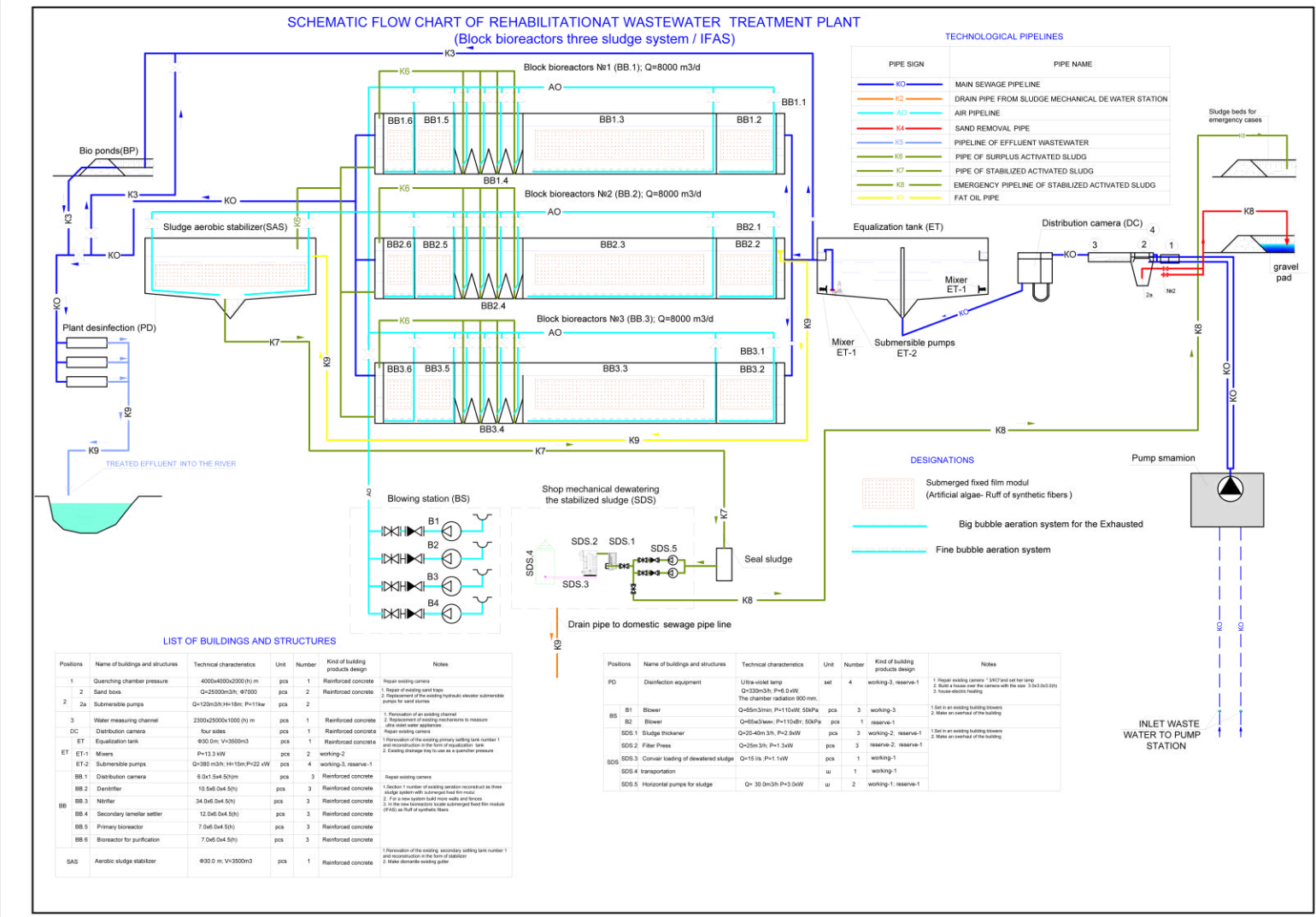


Figure CC.7: Darkhan WWTP – Current Operation: 10, 11, 2, 4, 5, 6 and 7

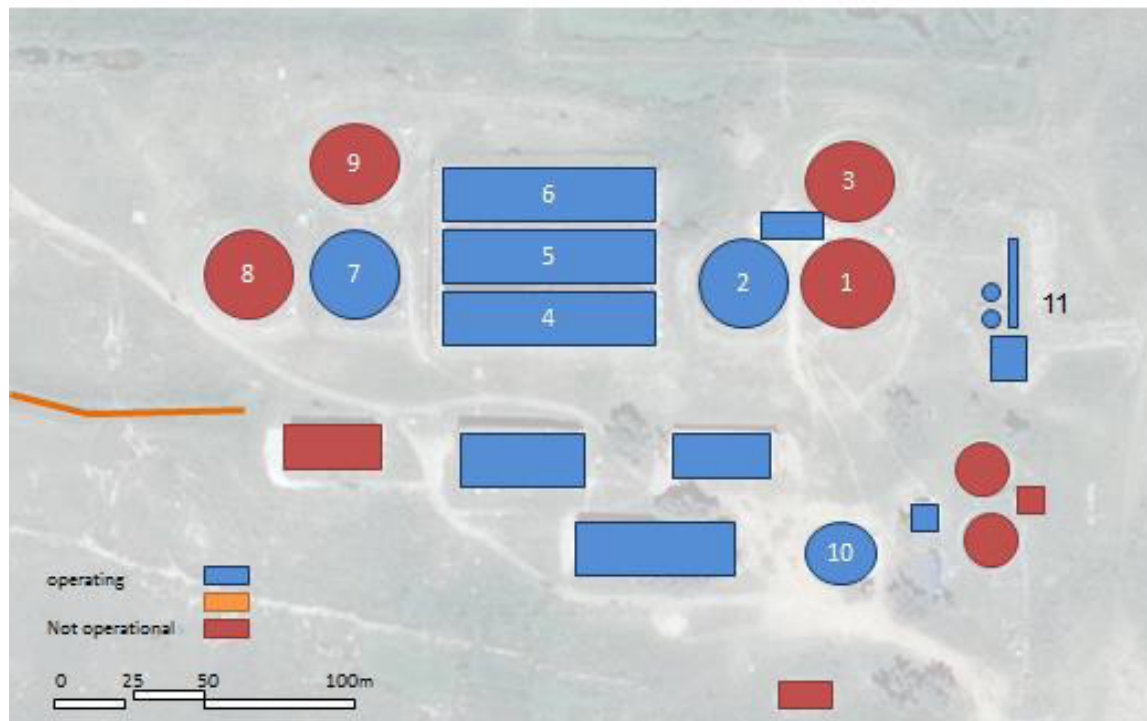


Figure CC.8: Darkhan WWTP – Rehabilitation of Clarifiers 3 & 9 Commences

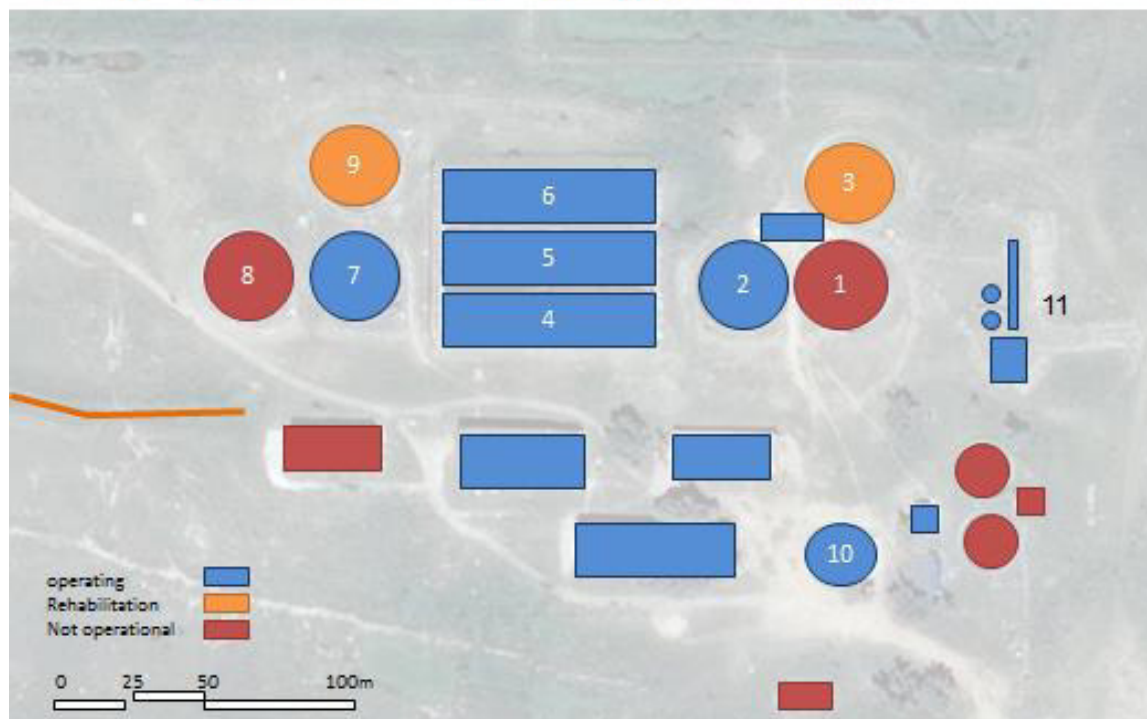


Figure CC.8: Darkhan WWTP – Rehabilitation of Clarifiers 3 & 9 and Bioreactor 6 Emptied

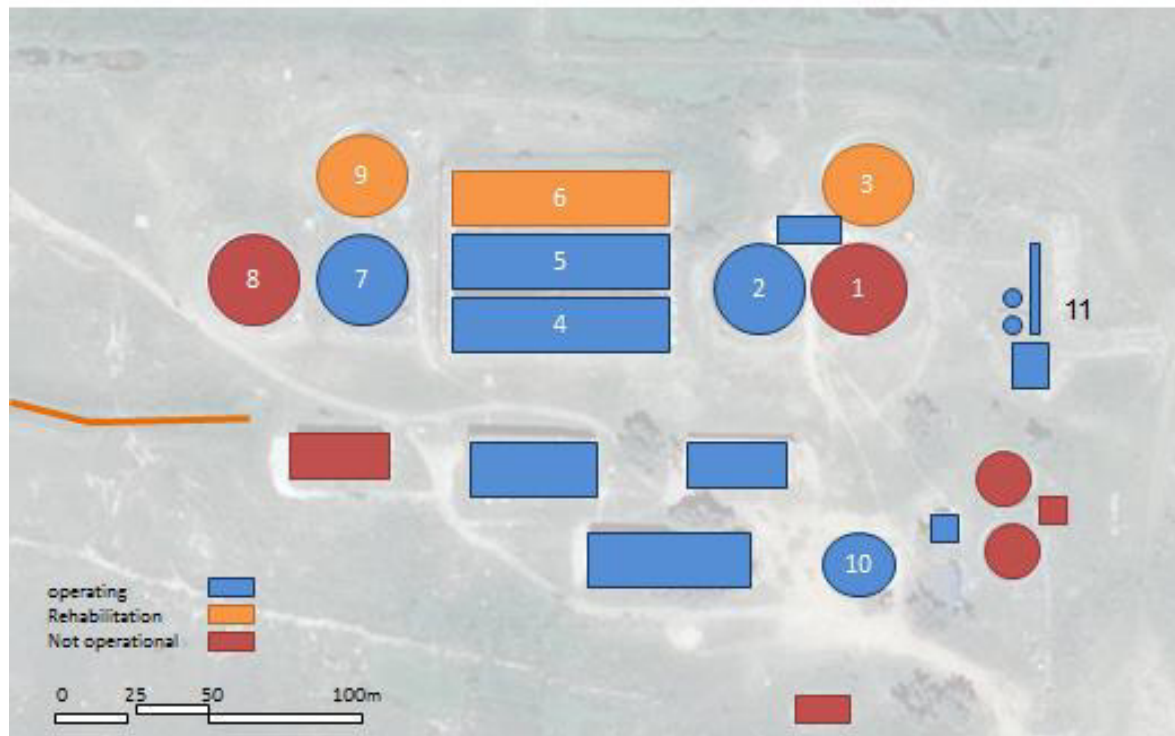


Figure CC.9: Darkhan WWTP – Rehabilitation of Units 3, 6 & 9 and Bioreactor 5 Emptied

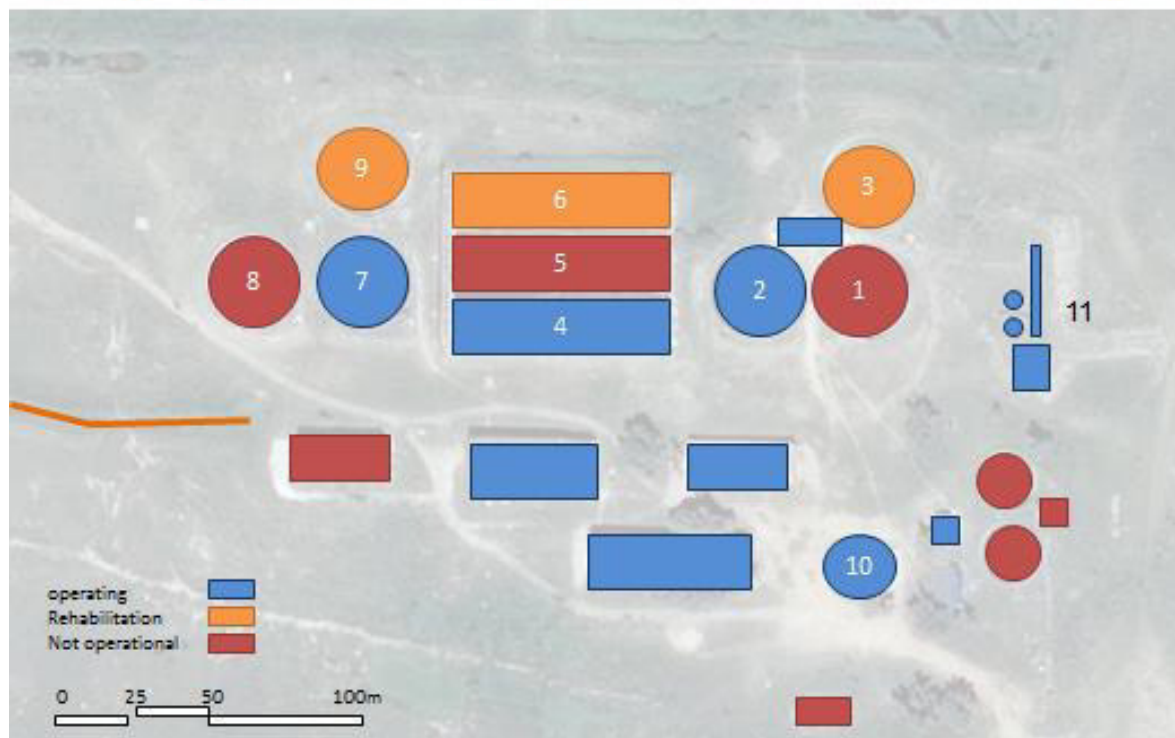


Figure CC.10: Darkhan WWTP – Rehabilitation of Buildings, Pump Station 10 and Preliminary Treatment Units 11; Equipment Installation in Units 3, 6 and 9

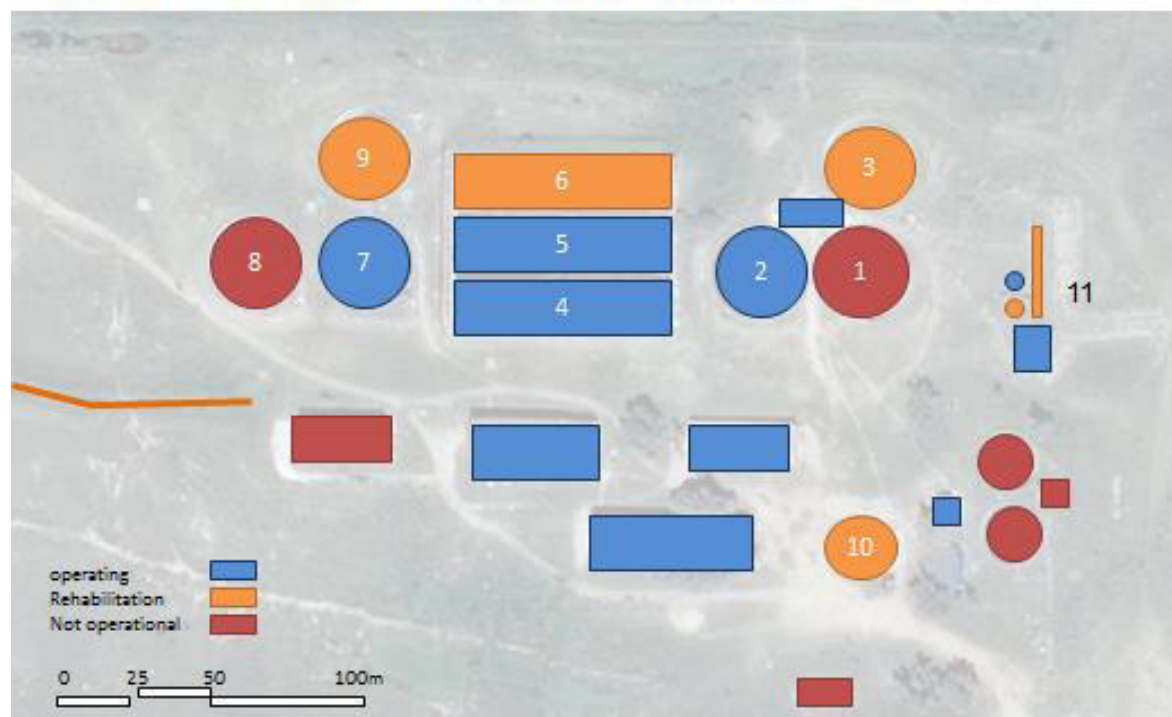


Figure CC.11: Darkhan WWTP – Fully Operational IFAS in Units 10, 11, 3, 6 and 9

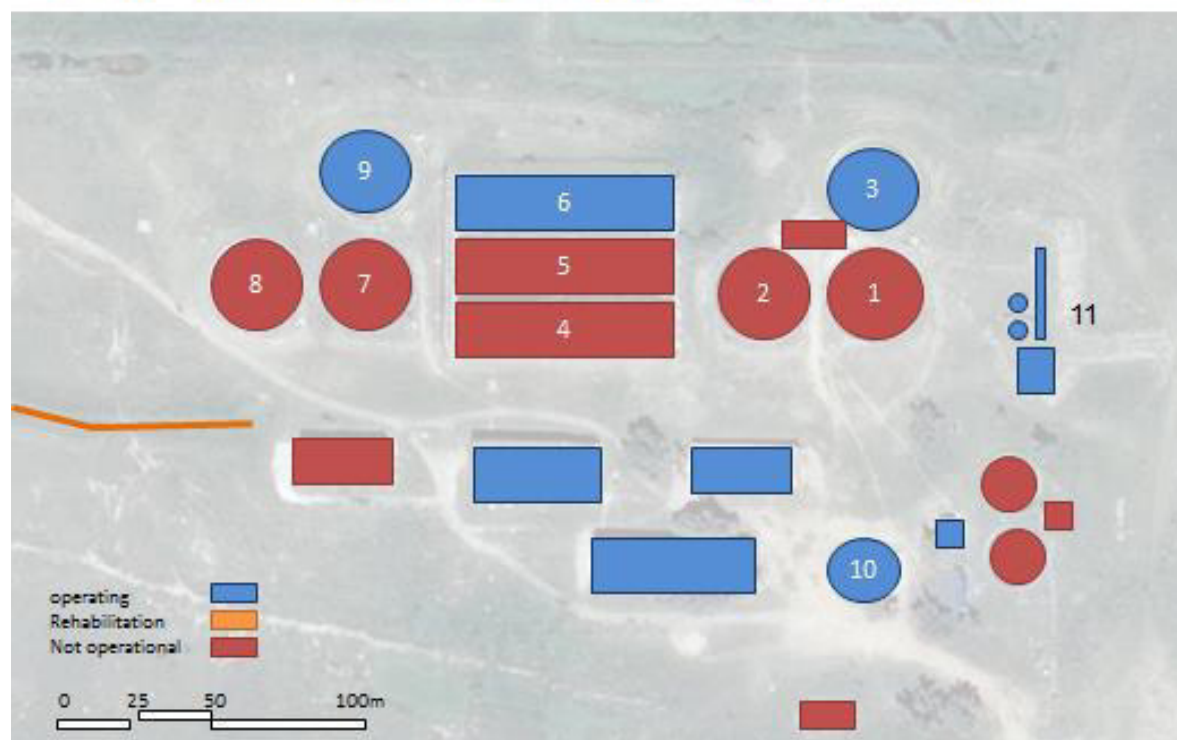
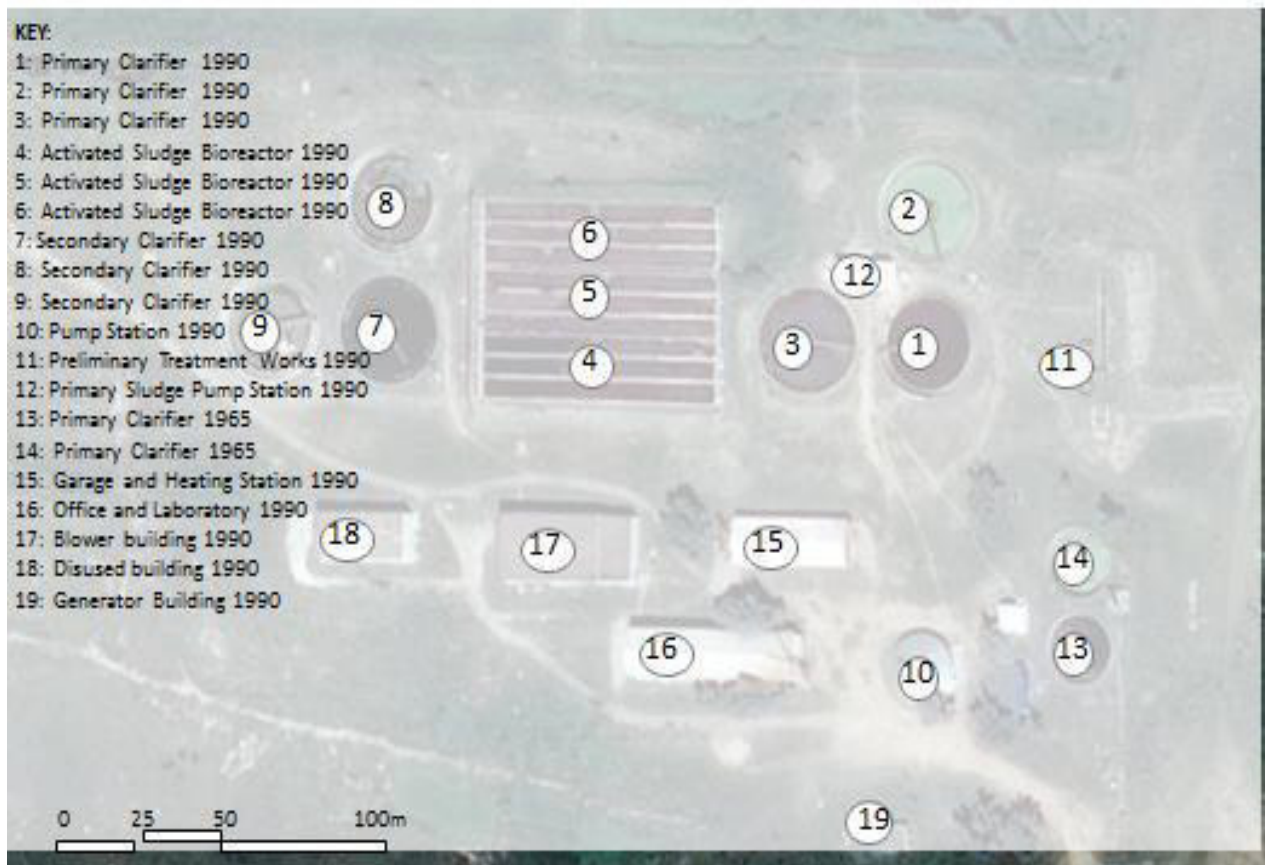


Figure CC.12: Darkhan WWTP – Existing Units with Approximate Year of Construction



APPENDIX DD: FINANCIAL MANAGEMENT ASSESSMENTS

FINANCIAL MANAGEMENT ASSESSMENT – MCUD (EA)

1.	Agency	EA
1.1	What is the entity's legal status / registration?	Ministry of Construction and Urban Development.
1.2	Has the entity implemented an externally-financed project in the past (if so, please provide details)?	Yes. Loans Nos. 1506 and 1907 under former MOI and GACUDPU.
1.3	What are the statutory reporting requirements for the entity?	Public Sector Management and Finance Law.
1.4	Is the governing body for the project independent?	Yes.
1.5	Is the organizational structure appropriate for the needs of the project?	Yes.
2.	Funds Flow Arrangements	
2.1	Describe (proposed) project funds flow arrangements, including a chart and explanation of the flow of funds from ADB, government and other financiers.	ADB → GOM-MOF → EA/MCUD → PMU (MCUD) → PIUs (Aimag, PUSO).
2.2	Are the (proposed) arrangements to transfer the proceeds of the loan (from the government / Finance Ministry) to the entity satisfactory?	Yes.
2.3	What have been the major problems in the past in receipt of funds by the entity?	None.
2.4	In which bank will the Imprest Account be opened?	To be agreed with MOF.
2.5	Does the (proposed) project implementing unit (PIU) have experience in the management of disbursements from ADB?	Yes.
2.7	Does the entity have/need a capacity to manage foreign exchange risk?	No.
2.8	How are the counterpart funds accessed?	Direct from State Budget.
2.9	How are payments made from the counterpart funds?	Through MCUD Public Investment Program (PIP) to Aimag budgets. Other counterpart funds are in form of VAT & Excise taxes.
2.10	If part of the project is implemented by communities or NGOs, does the PIU have the necessary reporting and monitoring features built into its systems to track the use of project proceeds by such agencies?	Yes; only small works implemented by communities.
2.11	Are the beneficiaries required to contribute to project costs? If beneficiaries have an option to contribute in kind (in the form of labor), are proper guidelines formulated to record and value the labor contribution?	Guidelines will be established in cases where beneficiaries contribute labor for community improvements.
3.	Staffing	
3.1	What is the (proposed) organizational structure of the accounting department? Attach an organization chart.	Only one acct. in MCUD at present. PMU with financial/ accounting dept. will be established in MCUD.
3.2	Identify the (proposed) accounts staff, including job title, responsibilities, educational background and professional experience. Attach job descriptions and CVs of key accounting staff.	Chief accountant . N/A (for other staff).

1.	Agency	EA
3.3	Is the project finance and accounting function staffed adequately?	Yes.
3.4	Is the finance and accounts staff adequately qualified and experienced?	Partially. Need reviewer training in ADB procedures.
3.5	Is the project accounts and finance staff trained in ADB procedures?	PMU staff is.
3.6	What is the duration of the contract with the finance and accounts staff?	N/A
3.7	Indicate key positions not contracted yet, and the estimated date of appointment.	All positions contracted.
3.10	Does the project have written position descriptions that clearly define duties, responsibilities, lines of supervision, and limits of authority for all of the officers, managers, and staff?	Yes, for PMU.
3.11	At what frequency are personnel transferred?	Not known.
3.12	What is training policy for the finance and accounting staff?	ADB Loan Disbursement Handbook.
4.	Accounting Policies and Procedures	
4.1	Does the entity have an accounting system that allows for the proper recording of project financial transactions, including the allocations of expenditures in accordance with the respective components, disbursement categories, and sources of funds? Will the project use the entity accounting system?	Yes. MCUD uses MAKS software.
4.2	Are controls in place concerning the preparation and approval of transactions, ensuring that all transactions are correctly made and adequately explained?	Yes.
4.3	Is the chart of accounts adequate to properly account for and report on project activities and disbursement categories?	Yes.
4.4	Are cost allocations to the various funding sources made accurately and in accordance with established agreements?	Yes.
4.5	Are the General Ledger and subsidiary ledgers reconciled and in balance?	Yes.
4.6	Are all accounting and supporting documents retained on a permanent basis in a defined system that allows authorized users easy access?	Yes.
Segregation of Duties		
4.7	Are the following functional responsibilities performed by different units or persons: (i) authorization to execute a transaction; (ii) recording of the transaction; and (iii) custody of assets involved in the transaction?	Yes.
4.8	Are the functions of ordering, receiving, accounting for, and paying for goods and services appropriately segregated?	Yes.

1.	Agency	EA
4.9	Are bank reconciliation prepared by someone other than those who make or approve payments?	Yes.
Budgeting System		
4.10	Do budgets include physical and financial targets?	Yes.
4.11	Are budgets prepared for all significant activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance?	Yes.
4.12	Are actual expenditures compared to the budget with reasonable frequency, and explanations required for significant variations from the budget?	Yes.
4.13	Are approvals for variations from the budget required in advance or after the fact?	In advance.
4.14	Who is responsible for preparation and approval of budgets?	MCUD State Secretary. Approval by Parliament based on PSMF Law.
4.15	Are procedures in place to plan project activities, collect information from the units in charge of the different components, and prepare the budgets?	Yes.
4.16	Are the project plans and budgets of project activities realistic, based on valid assumptions, and developed by knowledgeable individuals?	Yes.
Payments		
4.17	Do invoice-processing procedures provide for: (i) Copies of purchase orders and receiving reports to be obtained directly from issuing departments? (ii) Comparison of invoice quantities, prices and terms, with those indicated on the purchase order and with records of goods actually received? (iii) Comparison of invoice quantities with those indicated on the receiving reports? (iv) Checking the accuracy of calculations?	Yes.
4.18	Are all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment?	Yes.
4.19	Do controls exist for the preparation of the payroll and are changes to the payroll properly authorized?	Yes.
Policies and Procedures		
4.20	What is the basis of accounting (e.g., cash, accrual)?	Accrual basis.
4.21	What accounting standards are followed?	International Accounting Standards. By PSMF Law 9.1.1.
4.22	Does the project have an adequate policies and procedures manual to guide activities and ensure staff accountability?	Will have FMS based on Loan Disbursement Handbook.
4.23	Is the accounting policy and procedure manual updated for the project activities?	Yes, will be when loan is effective.
4.24	Do procedures exist to ensure that only authorized persons can alter or establish a new accounting principle,	Yes. By PSMFLaw 9.1.1.

1.	Agency	EA
	policy or procedure to be used by the entity?	
4.25	Are there written policies and procedures covering all routine financial management and related administrative activities?	Accounting Policy and Procedures of Budget Organizations prepared by Accounting Policy Department of MoF.
4.26	Do policies and procedures clearly define conflict of interest and related party transactions (real and apparent) and provide safeguards to protect the organization from them?	Not known.
4.27	Are manuals distributed to appropriate personnel?	Yes.
Cash and Bank		
4.28	Indicate names and positions of authorized signatories in the bank accounts.	1st signature MCUD State Secretary; 2nd signature MCUD Chief Accountant
4.29	Does the organization maintain an adequate, up-to-date cashbook, recording receipts and payments?	Yes.
4.30	Do controls exist for the collection, timely deposit and recording of receipts at each collection location?	Yes.
4.31	Are bank and cash reconciled on a monthly basis?	Yes.
4.32	Are all unusual items on the bank reconciliation reviewed and approved by a responsible official?	Yes.
4.33	Are all receipts deposited on a timely basis?	Yes.
Safeguard over Assets		
4.34	Is there a system of adequate safeguards to protect assets from fraud, waste and abuse?	Yes.
4.35	Are subsidiary records of fixed assets and stocks kept up to date and reconciled with control accounts?	Yes.
4.36	Are there periodic physical inventories of fixed assets and stocks?	Yes.
4.37	Are assets sufficiently covered by insurance policies?	Not known.
Other Offices and Implementing Entities		
4.38	Are there any other regional offices or executing entities participating in implementation?	Yes.
4.39	Has the project established controls and procedures for flow of funds, financial information, accountability, and audits in relation to the other offices or entities?	Yes.
4.40	Does information among the different offices/implementing agencies flow in an accurate and timely fashion?	Yes.
4.41	Are periodic reconciliation performed among the different offices/implementing agencies?	Yes.
4.42	Other	Yes, in general.

1.	Agency	EA
5.	Internal Audit	
5.1	Is there a internal audit department in the entity?	No, only Mongolian National Audit Office.
5.2	What are the qualifications and experience if audit department staff?	N/A
5.3	To whom does the internal auditor report?	N/A
5.4	Will the internal audit department include the project in its work program?	N/A
5.5	Are actions taken on the internal audit findings?	N/A
6.	External Audit	
6.1	Is the entity financial statement audited regularly by an independent auditor? Who is the auditor?	Yes. Mongolian National Audit Office.
6.2	Are there any delays in audit of the entity? When are the audit reports issued?	1 month after receipt of FSs. By PSMF Law Art-38.2 (around 15 th of March/).
6.3	Is the audit of the entity conducted according to the International Standards on Auditing?	Yes.
6.4	Were there any major accountability issues brought out in the audit report of the past three years?	No.
6.5	Will the entity auditor audit the project accounts or will another auditor be appointed to audit the project financial statements?	Another auditor acceptable to ADB.
6.6	Are there any recommendations made by the auditors in prior audit reports or management letters that have not yet been implemented?	No.
6.7	Is the project subject to any kind of audit from an independent governmental entity (e.g., the supreme audit institution) in addition to the external audit?	Yes, Mongolian National Audit Office.
6.8	Has the project prepared acceptable terms of reference for an annual project audit?	Yes.
7.	Reporting and Monitoring	
7.1	Are financial statements prepared for the entity? In accordance with which accounting standards?	Yes. International Accounting Standards.
7.2	Are financial statements prepared for the implementing agency?	Yes.
7.3	What is the frequency of preparation of financial statements? Are the reports prepared in a timely fashion so as to useful to management for decision making?	Quarterly. Yes by Accounting Law.
7.4	Does the reporting system need to be adapted to reports on the project components?	Yes.
7.5	Does the reporting system have the capacity to link the financial information with the project's physical progress? If separate systems are used to gather	Yes.

1.	Agency	EA
	and compile physical data, what controls are in place to reduce the risk that the physical data may not synchronize with the financial data?	
7.6	Does the project have established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain, and how they are to be used?	Yes.
7.7	Are financial management reports used by management?	Yes.
7.8	Do the financial reports compare actual expenditures with budgeted and programmed allocations?	Yes.
7.9	Are financial reports prepared directly by the automated accounting system or are they prepared by spreadsheets or some other means?	Automated accounting system. MAKS software.
8.	Information Systems	
8.1	Is the financial management system computerized?	Yes.
8.2	Can the system produce the necessary project financial reports?	Yes.
8.3	Is the staff adequately trained to maintain the system?	Yes.
8.4	Does the management organization and processing system safeguard the confidentiality, integrity and availability of the data?	Yes.

Source: MCUD-PMU

FINANCIAL MANAGEMENT ASSESSMENT – US SUVAG (PUSO)

Sl. No.	Topic	Response
1.	Implementing Agency	
1.1	What is the entity's legal status / registration?	Local-owned joint stock company.
1.2	Has the entity implemented an externally-financed project in the past (if so, please provide details)?	Yes, the JICA funded Water Supply Improvement Project.
1.3	What are the statutory reporting requirements for the entity?	Quarterly report is submitted within first 10 days of succeeding month. Annual report is submitted by 20 th December.
1.4	Is the governing body for the project independent?	The governing body is the Board of Directors and enabled to pass management guidelines and regulations.
1.5	Is the organizational structure appropriate for the needs of the project?	Yes, as experience with JICA has demonstrated.
2.	Funds Flow Arrangements	
2.1	Describe (proposed) project funds flow arrangements, including a chart and explanation of the flow of funds from ADB, government and other financiers.	Per JICA project experience, funds are transferred from MOF to company account.
2.2	Are the (proposed) arrangements to transfer the proceeds of the loan (from the government / Finance Ministry) to the entity satisfactory?	Per JICA, yes.
2.3	What have been the major problems in the past in receipt of funds by the entity?	No problems were encountered regarding funds receipt for JICA project.
2.4	In which bank will the Imprest Account be opened?	Agreed with MOF.
2.5	Does the (proposed) project implementing unit (PIU) have experience in the management of disbursements from ADB?	The implementing unit at Us Suvag for project technical works supervision does not have experience in ADB funds management.
2.7	Does the entity have/need a capacity to manage foreign exchange risks?	No. Project funds were in local currency when released to budget.
2.8	How are the counterpart funds accessed?	From State budget.
2.9	How are payments made from the counterpart funds?	From Public Investment Plan (PIP) to Aimag budget.
2.10	If part of the project is implemented by communities or NGOs, does the PIU have the necessary reporting and monitoring features built into its systems to track the use of project proceeds by such agencies?	Yes, the company has necessary reporting and monitoring systems which may be tapped to follow project proceeds implemented by partner communities and organizations.
2.11	Are the beneficiaries required to contribute to project costs? If beneficiaries have an option to contribute in kind (in the form of labor), are proper guidelines formulated to record and value the labor contribution?	Yes.
3.	Staffing	
3.1	What is the (proposed) organizational structure of the accounting department? Attach an organization chart.	(Organogram of Us Suvag and Accounting Department is attached).
3.2	Identify the (proposed) accounts staff, including job title, responsibilities, educational background and professional experience. Attach job descriptions and CVs of key accounting staff.	The department head is an accountant. Assisting the head is a budget and project engineer.

Sl. No.	Topic	Response
3.3	Is the project finance and accounting function staffed adequately?	No. Current staffing: 1 head (Accountant), and 6 staff. Finance unit needs 2 more: 1 economist to assess economic risks, and 1 accountant to do financial analysis. Presently, part-timers do these functions.
3.4	Is the finance and accounts staff adequately qualified and experienced?	Yes.
3.5	Is the project accounts and finance staff trained in ADB procedures?	No.
3.6	What is the duration of the contract with the finance and accounts staff?	All 7 staff are full-time, regulars.
3.7	Indicate key positions not contracted yet, and the estimated date of appointment.	Refer to item 3.3.
3.10	Does the project have written position descriptions that clearly define duties, responsibilities, lines of supervision, and limits of authority for all of the officers, managers, and staff?	Yes.
3.11	At what frequency are personnel transferred?	At times, staff may assist on part-time basis in other sections.
3.12	What is training policy for the finance and accounting staff?	Staff are encouraged to attend pertinent training. Staff are scheduled to attend training on State Procurement Law.
4.	Accounting Policies and Procedures.	
4.1	Does the entity have an accounting system that allows for the proper recording of project financial transactions, including the allocation of expenditures in accordance with the respective components, disbursement categories, and sources of funds? Will the project use the entity accounting system?	Yes, the company has in place the necessary accounting and reporting systems. The systems will be able to accommodate project accounting needs.
4.2	Are controls in place concerning the preparation and approval of transactions, ensuring that all transactions are correctly made and adequately explained?	Yes.
4.3	Is the chart of accounts adequate to properly account for and report on project activities and disbursement categories?	Yes.
4.4	Are cost allocations to the various funding sources made accurately and in accordance with established agreements?	Yes, e.g., JICA project is maintained under separate account.
4.5	Are the General Ledger and subsidiary ledgers reconciled and in balance?	Yes.
4.6	Are all accounting and supporting documents retained on a permanent basis in a defined system that allows authorized users easy access?	Yes.
	Segregation of Duties	
4.7	Are the following functional responsibilities performed by different units or persons: (i) authorization to execute a transaction; (ii) recording of the transaction; and (iii) custody of assets involved in the transaction?	No.
4.8	Are the functions of ordering, receiving, accounting for, and paying for goods and services appropriately segregated?	Yes.
4.9	Are bank reconciliations prepared by someone other than those who make or approve payments?	No. Chief accountant performs the tasks.

Sl. No.	Topic	Response
	Budgeting System	
4.10	Do budgets include physical and financial targets?	Yes.
4.11	Are budgets prepared for all significant activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance?	Yes.
4.12	Are actual expenditures compared to the budget with reasonable frequency, and explanations required for significant variations from the budget?	Yes.
4.13	Are approvals for variations from the budget required in advance or after the fact?	Approvals for variations are made in advance.
4.14	Who is responsible for preparation and approval of budgets?	The project engineer prepares the budget.
4.15	Are procedures in place to plan project activities, collect information from the units in charge of the different components, and prepare the budgets?	Yes.
4.16	Are the project plans and budgets of project activities realistic, based on valid assumptions, and developed by knowledgeable individuals?	Yes.
	Payments	
4.17	Do invoice-processing procedures provide for: (i) Copies of purchase orders and receiving reports to be obtained directly from issuing departments? (ii) Comparison of invoice quantities, prices and terms, with those indicated on the purchase order and with records of goods actually received? (iii) Comparison of invoice quantities with those indicated on the receiving reports? (iv) Checking the accuracy of calculations?	Yes.
4.18	Are all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment?	Yes.
4.19	Do controls exist for the preparation of the payroll and are changes to the payroll properly authorized?	Yes. Payroll changes, salary increases, etc., are reviewed by the department head, and approved based on warranted performance, and following allotment in business plan.
	Policies and Procedures	
4.20	What is the basis of accounting (e.g., cash, accrual)?	Accounting follows accrual basis.
4.21	What accounting standards are followed?	Accounting follows the international accounting standards.
4.22	Does the project have an adequate policies and procedures manual to guide activities and ensure staff accountability?	Yes.
4.23	Is the accounting policy and procedure manual updated for the project activities?	No.
4.24	Do procedures exist to ensure that only authorized persons can alter or establish a new accounting principle, policy or procedure to be used by the entity?	No.
4.25	Are there written policies and procedures covering all routine financial management and related administrative activities?	Yes, there are written policies and procedures.

Sl. No.	Topic	Response
4.26	Do policies and procedures clearly define conflict of interest and related party transactions (real and apparent) and provide safeguards to protect the organization from them?	Not clearly defined in company guidelines.
4.27	Are manuals distributed to appropriate personnel?	Yes, manuals are available to concerned staff.
	Cash and Bank	
4.28	Indicate names and positions of authorized signatories in the bank accounts.	Ms. Erdenebayor, Chief Accountant.
4.29	Does the organization maintain an adequate, up-to-date cashbook, recording receipts and payments?	Yes.
4.30	Do controls exist for the collection, timely deposit and recording of receipts at each collection location?	Yes.
4.31	Are bank and cash reconciled on a monthly basis?	Yes.
4.32	Are all unusual items on the bank reconciliation reviewed and approved by a responsible official?	Yes.
4.33	Are all receipts deposited on a timely basis?	No.
	Safeguard over Assets	
4.34	Is there a system of adequate safeguards to protect assets from fraud, waste and abuse?	Yes. Financial unit is tasked to monitor and protect assets and report on fraud, waste and abuse. It monitors and safeguards usage, receiving, issuing, selling and retirement of assets.
4.35	Are subsidiary records of fixed assets and stocks kept up to date and reconciled with control accounts?	Yes.
4.36	Are there periodic physical inventories of fixed assets and stocks?	Yes. Refer to item 4.34.
4.37	Are assets sufficiently covered by insurance policies?	Only company mobile equipment and vehicles are insured.
	Other Offices and Implementing Agencies	
4.38	Are there any other regional offices or executing entities participating in implementation?	No.
4.39	Has the project established controls and procedures for flow of funds, financial information, accountability, and audits in relation to the other offices or entities?	No.
4.40	Does information among the different offices/implementing agencies flow in an accurate and timely fashion?	N/A
4.41	Are periodic reconciliations performed among the different offices/implementing agencies?	N/A
	Other	
4.42	Has the project advised employees, beneficiaries and other recipients to whom to report if they suspect fraud, waste or misuse of project resources or property?	No.
5.	Internal Audit	
5.1	Is there an internal audit department in the entity?	No internal audit in the company.

Sl. No.	Topic	Response
5.2	What are the qualifications and experience of audit department staff?	N/A
5.3	To whom does the internal auditor report?	N/A
5.4	Will the internal audit department include the project in its work program?	N/A
5.5	Are actions taken on the internal audit findings?	N/A
6.	External Audit	
6.1	Is the entity financial statement audited regularly by an independent auditor? Who is the auditor?	Yes, the Audit Office conducts regular company audit.
6.2	Are there any delays in audit of the entity? When are the audit reports issued?	No delays in conduct of audit. Reports are issued at year-end.
6.3	Is the audit of the entity conducted according to the International Standards on Auditing?	Yes.
6.4	Were there any major accountability issues brought out in the audit report of the past three years?	No.
6.5	Will the entity auditor audit the project accounts or will another auditor be appointed to audit the project financial statements?	Another auditor will be appointed to audit the project.
6.6	Are there any recommendations made by the auditors in prior audit reports or management letters that have not yet been implemented?	Audit comments are taken into consideration and recommendations are implemented.
6.7	Is the project subject to any kind of audit from an independent governmental entity (e.g., the supreme audit institution) in addition to the external audit?	Yes. State auditor at Aimag level.
6.8	Has the project prepared acceptable terms of reference for an annual project audit?	Yes.
7.	Reporting and Monitoring	
7.1	Are financial statements prepared for the entity? In accordance with which accounting standards?	Yes, the statements follow international standards.
7.2	Are financial statements prepared for the implementing unit?	The statements are prepared for the company.
7.3	What is the frequency of preparation of financial statements? Are the reports prepared in a timely fashion so as to be useful to management for decision making?	Financial statements are prepared on quarterly basis. Yes, they are used in management decision-making.
7.4	Does the reporting system need to be adapted to report on the project components?	Yes. Under JICA project, reports were prepared per JICA guidelines. Under the proposed project, this also needs to be done.
7.5	Does the reporting system have the capacity to link the financial information with the project's physical progress? If separate systems are used to gather and compile physical data, what controls are in place to reduce the risk that the physical data may not synchronize with the financial data?	Yes, reports link financial and physical progress.
7.6	Does the project have established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain, and how they are to be used?	The financial unit produce the business plan, which features the annual budget, in conjunction with management. The unit has the capability to prepare 5-year plan.
7.7	Are financial management reports used by management?	Yes, the reports are used as basis for management decisions.

Sl. No.	Topic	Response
7.8	Do the financial reports compare actual expenditures with budgeted and programmed allocations?	No, but considers the importance of the tool for budget preparation and analysis.
7.9	Are financial reports prepared directly by the automated accounting system or are they prepared by spreadsheets or some other means?	Financial reporting is automated, uses the Diamond Accounting System, version 2009.
8	Information Systems	
8.1	Is the financial management system computerized?	Yes. Refer to item 7.9.
8.2	Can the system produce the necessary project financial reports?	Yes.
8.3	Is the staff adequately trained to maintain the system?	Yes, for minor maintenance. Major system problems are covered by contract maintenance clause.
8.4	Does the management organization and processing system safeguard the confidentiality, integrity and availability of the data?	Yes, only authorized personnel have access.

Source: Us Suvag

Supporting Documents (available on request)

- Financial regulations and standards used by entity.
- Legal and organizational structure of entity.
- Evidence of consideration of work of Auditor and conclusions reached.
- Financial statements produced by entity.
- Copy of recent audit report.

PROCUREMENT CAPACITY ASSESSMENT – MCUD (EA)

General Agency Resource Assessment	Risk Assessed as	Low	Ave.	High
1. Does the agency have the legal identity to enter into contracts? <i>If the EA has the capacity to enter into contracts state low. If it does not its selection as the EA requires reconsideration in consultation with OGC and COSO</i>		+		
2. Is there a procurement department? <i>If yes low, if procurement will be undertaken by an existing PIU average, if no unit or PIU high</i>			+	
3. What procurement does it undertake? <i>All agency procurement low, just project related average, just administrative high</i>			+	
4. Are the staff provided with written job descriptions? <i>All low, only senior average, no high</i>			+	
5. Does the agency's charter or similar document clearly describe and assign the procurement function, responsibility and accountability to the procurement unit? <i>Yes low, yes but only partially average, no high</i>			+	
6. How many years experience does the head of the procurement unit have in a direct procurement role? <i>Of procurement more than 10 years low, more than 5 years average, less than 5 years high</i>			+	
7. What are the head of unit's technical, vocational and academic qualifications? <i>Specific graduate procurement qualification low, engineering/technical/managerial qualification average, no qualification or unrelated qualification high</i>			+	
8. On average how many years of direct procurement experience has:				
i. Senior Management <i>More than 7 years low, more than 4 years average, less than 4 years high</i>			+	
ii. Professional Staff <i>More than 7 years low, more than 4 years average, less than 4 years</i>			+	
iii. Support Staff <i>More than 3 years low, more than 1 year average, less than 1 year low</i>				+
9. What are the technical, vocational and academic qualifications of staff in the procurement unit?				

General Agency Resource Assessment		Risk Assessed as	Low	Ave.	High
i. Senior Management <i>Specific graduate procurement qualification low, engineering/technical/managerial qualification average, no qualification or unrelated qualification high</i>			+	+	
ii. Professional Staff <i>Applicable vocational or procurement qualification low, engineering/technical/managerial qualification average, no qualification or unrelated qualification high</i>			+	+	
iii. Support Staff <i>Procurement/engineering/technical/managerial qualification low, high school graduate average, none high,</i>			+		
10. Are the staff in the unit assigned on a full time permanent basis, seconded or part time? <i>I.e. full time unit staff not simply full time EA staff, All full time permanent low, more than 75% full time average, less than 75% high</i>			+		
11. At what level does the department report (to the head of agency, deputy etc.)? <i>Head of the agency low, second most senior level of the agency average, below the second level of the agency high</i>				+	
12. Do the staff that will be involved with the procurement have English language skills (bi-lingual/mother tongue, working/technical, conversational/basic or limited/none)?					
i. Head of Unit <i>Excellent low, good average, fair or less high</i>			+		
ii. Senior Management <i>Excellent low, good average, fair or less high</i>				+	
iii. Professional Staff <i>Excellent low, good average, fair or less high</i>					+
iv. Support Staff <i>Good low, fair average, poor high</i>					+
13. What is the degree of IT literacy? <i>Literacy defined as "Excellent" the use of IT applications and database use (not creation) able to use off the shelf applications to interrogate, analyze and report on data. "Good" understands and uses word processing and spread sheet applications effectively . "Fair" Basic word processing</i>					
i. Senior Management <i>Good low, fair average, poor high</i>			+		
ii. Professional Staff				+	

General Agency Resource Assessment		Risk Assessed as	Low	Ave.	High
<i>Excellent low, good average, fair or less high</i>					
iii. Support Staff					+
<i>Excellent low, good average, fair or less high</i>					
14. Is the number and qualifications of the staff sufficient to undertake the additional procurement that will be required under the proposed project?				+	
<i>Yes low, yes but consulting support or training required average, no high</i>					
15. Does the unit have adequate facilities in terms of					
i. Office accommodation				+	
<i>Secure and reasonable environment with adequate space low, cramped but acceptable average, insufficient high</i>					
ii. Sufficient PCs number, and software licensing capacity			+		
<i>All staff provided with direct access to current model PCs with required licensed applications low, limited access to current model PCs with licensed software average, limited access to obsolete PCs and unlicensed software high. PCs</i>					
iii. Furniture			+		
<i>Good low, adequate average, poor low</i>					
iv. Printing and reproduction			+		
<i>Sufficient dedicated printing and reproduction equipment to produce bidding documents and reports low, limited or shared facilities average, insufficient facilities high.</i>					
v. Aircon/Heating				+	
<i>Suitable for the local climatic conditions low, low power or availability average, none high</i>					
vi. Local and IDD phones			+		
<i>Access for head of unit, senior and professional staff IDD and all local low, only head of unit and senior staff IDD, all local average, less than IDD senior staff and all IDD high</i>					
vii. Power and back up				+	
<i>Sufficient for loading with voltage and surge/spike protection low, sufficient for loading but no voltage surge/spike protection average, insufficient or unsafe high</i>					
viii. Physical office security			+		
<i>Controlled access to all procurement offices and 24 hour security low, controlled access but no 24 hour security average, open access and not 24 hour security high</i>					
ix. Secure storage (for contracts and bidding documents)			+		

General Agency Resource Assessment		Risk Assessed as	Low	Ave.	High
<i>Fire, theft and tamper proof storage for bidding documents, securities and contracts low, theft and tamperproof storage average, less than high</i>					
x. Access to transport			+		
<i>Sufficient project vehicles or transport budget for transport in execution of official duties low, shared but limited resources or transport budget average, no access to transport high</i>					
xi. Office consumables				+	
<i>Unit stocked with adequate office consumables and able to replenish easily low, sufficient stock but reordering complicated or lengthy average, no high</i>					
16. Is the unit authorized to make administrative purchases and payments (for office supplies, national travel etc)?				+	
<i>Unit can purchase supplies and consumables when required, approve and finance project travel etc. low, unit can requisition same but requires external approval average, not in the unit's control high</i>					
17. Is there a procurement training program?					+
<i>Unit has a comprehensive internal and external training program low, unit has either an internal or external training program average, no training program high</i>					

Agency Procurement Processes, Goods and Works	Response
1. Has the agency undertaken foreign assisted procurement of goods or works recently (last 12 months, or last 36 months)?	Yes, Last 36 months
2. If the above is yes, what where the major challenges?	Evaluate bids
3. Is there a procurement process manual for goods and works?	Yes, we have both for goods and works
4. If there is a manual is it up to date and does it cover foreign assisted procurement?	We use ADB procurement guidelines
5. Who identifies procurement requirements?	MCUD and ADB
6. Who drafts the specifications?	PMU
7. Who approves the specification?	MCUD Evaluation committee
8. Are there standard bidding documents in use and have they been approved for use on ADB funded projects?	Yes
9. Who drafts the bidding documents?	PMU
10. Who manages the sale of the document?	PMU
11. How is the price of the bidding document determined?	MCUD Evaluation committee
12. Who may purchase the document?	bidders
13. Are all queries from bidders replied to in writing?	yes
14. Is there a minimum period for preparation of bids and if yes how long?	Yes. It depends upon procurement method least 5 vz 42 days
15. Does the bidding document state the date and time of opening and how close is it to the deadline for submission?	Bid opening date and time is stated in the bidding document.
16. Is the opening public?	Public
17. Can late bids be accepted?	No
18. Can bids be rejectedat bid opening?	No
19. Are minutes taken?	Yes
20. Who may have a copy of the minutes?	All bidders and EA/ADB

21. Are the minutes free of charge?	Yes
22. Who undertakes the evaluation (individual(s), permanent committee, ad-hoc committee)?	ad-hoc committee
23. What are the qualifications of the evaluators in respect to procurement and the goods and works under evaluation?	Who have a procurement special license
24. Is the decision of the evaluators final or is the evaluation subject to additional approvals?	Final
25. Are performance securities required for all types of procurement?	Depends upon bid price. There is no need a performance security for shopping.
26. Is the contract used that contained in the bidding document?	yes
27. Using at least three real examples how long between evaluation completion and contract effectiveness?	Small procurement 3 months, ICB -115-200 days
28. When an advance payment is made is a security required?	yes
29. When there is an advance payment what is the period between receipt of advance payment security and payment?	28-45 days
30. Is there a contracts management/expediting unit?	No
31. Does the procurement department have the capacity to provide on site management of works contracts	No
32. Are there processes in place for the collection and clearance of cargo through ports of entry?	yes
33. Are there established goods receiving procedures?	yes
34. Are all goods received recorded as assets or inventory in a register or similar?	Yes
35. Is the agency/procurement department familiar with letters of credit?	No, PMU is responsible
36. Does the procurement department register and track warranty and latent defects liability periods?	No, PMU is responsible
37. How long after financial evaluation is the selected firm to negotiate?	7-14 days
38. Does the RFP outline the basis of negotiations?	No
39. What is the usual basis for negotiation?	Agrees special and general condition of contract
40. Are minutes of negotiation taken and signed?	Yes
41. How long after negotiations until the contract is signed?	3 days
42. Are advance payments made?	Depends upon procurement method
43. Is an agency counterpart appointed to manage the day to day administration of the contract?	ICB -Yes
44. Is there a process to review outputs?	sometimes
45. Are there mandated time periods for the review of consulting outputs and reports?	sometimes

Agency Procurement Processes, Consulting Services	
46. Has the agency undertaken foreign assisted procurement of consulting services recently (last 12 months, or last 36 months)?	Yes last 36 months
47. If the above is yes what were the major challenges?	Need more experienced consulting service
48. Is there a procurement process manual for consulting services procurement?	Yes
49. Is the manual up to date and does it cover foreign assisted projects?	Using ADB procurement guidelines
50. Who identifies the need for consulting services requirements?	MCUD
51. Who drafts the ToR?	PMU
52. Do the ToR followed a standard format such as background, tasks, inputs, objectives and outputs?	Yes
53. Is there a system in place that estimates time required for completion?	Yes
54. Is there a system in place to estimate the cost of consulting assignments?	Yes
55. Is there a standard request for proposals in use and has it been approved for use on ADB projects?	Yes
56. Who prepares the request for proposals?	PMU
57. At what amount must expressions of interest be advertised?	Works -10.000.000.001, MNT Goods-100.000.001 MNT
58. Historically what is the most common selection criteria?	Experience/financial capacity /personnel CQS
59. What criteria is used to evaluate expression of interests?	Experience/financial capacity /personnel CQS
60. Do firms have to pay for the proposal document?	No
61. Does the evaluative criteria follow a pre-determined structure and is it detailed in the RFP?	No
62. Are firms invited to undertake pre-proposal visits?	No
63. Are public pre-proposal meetings held?	Yes
64. Are minutes prepared and circulated after pre-proposal meetings?	Yes
65. To who are minutes distributed?	All bidders
66. Are all queries from consultants answered to in writing?	Yes

67. Is there a clear deadline for submission stated in the RFP?	Yes
68. Are late proposals accepted?	No
69. Are the financial and technical proposals in separate envelopes?	No
70. Are proposal securities required?	No
71. Are technical proposals opened in public?	Yes
72. Do the financial proposals remain sealed until technical evaluation is completed?	No
73. Are minutes of technical opening distributed?	Yes
74. Who undertakes the evaluation (individual(s), permanent committee, ad-hoc committee)?	ad-hoc committee
75. Does the evaluation employ merit points?	No

Records Keeping	Risk Assessed as	Low	Ave.	High
1. Is there a referencing system for procurement files? <i>Yes logical alpha numeric numbering system held in a central database (simple word or excel table acceptable) low, yes manual system average, no system high</i>			+	
2. Are original contracts secured in a fire and theft proof location? <i>Yes in fire and theft proof storage low, under lock and key such as metal filing cabinet average, no in simple files in book cases or similar high</i>			+	
3. Are copies of bids or proposals retained with the evaluation? <i>A copy of each bids/proposal retained with evaluation, no or only the winners high</i>		+		
4. Are copies of the original advertisements retained with the pre-contract papers? <i>Yes low, no high</i>		+		
5. Is there a single contract file with a copy of the contract and all subsequent contractual correspondence? <i>Yes low, no high</i>		+		
6. Are copies of invoices included with contract papers? <i>Yes low, in a separate file and location but cross referenced to the contract average, no high</i>			+	
7. For what period are records kept? <i>Seven years or more low, five to seven years average, less than 5 years high</i>				+

Source: MCUD-PMU

FINANCIAL MANAGEMENT ASSESSMENT – DARKHAN UUL AIMAG GOVERNOR’S OFFICE

1.	Agency	
1.1	What is the entity's legal status / registration?	Darkhan uul aimag Governor's office
1.2	Has the entity implemented an externally-financed project in the past (if so, please provide details)?	Yes. ADB Loan on renovation of engineering network of 2 nd micro district.
1.3	What are the statutory reporting requirements for the entity?	Budget management and financing Law. Accounting Law
1.4	Is the governing body for the project independent?	Yes
1.5	Is the organizational structure appropriate for the needs of the project?	Yes
2.	Funds Flow Arrangements	
2.1	Describe (proposed) project funds flow arrangements, including a chart and explanation of the flow of funds from ADB, government and other financiers.	-
2.2	Are the (proposed) arrangements to transfer the proceeds of the loan (from the government / Finance Ministry) to the entity satisfactory?	Yes.
2.3	What have been the major problems in the past in receipt of funds by the entity?	None.
2.4	In which bank will the Imprest Account be opened?	Ministry of Finance should give approval.
2.5	Does the (proposed) project implementing unit (PIU) have experience in the management of disbursements from ADB?	-
2.7	Does the entity have/need a capacity to manage foreign exchange risk?	No
2.8	How are the counterpart funds accessed?	From budget.
2.9	How are payments made from the counterpart funds?	-
2.10	If part of the project is implemented by communities or NGOs, does the PIU have the necessary reporting and monitoring features built into its systems to track the use of project proceeds by such agencies?	Yes
2.11	Are the beneficiaries required to contribute to project costs? If beneficiaries have an option to contribute in kind (in the form of labor), are proper guidelines formulated to record and value the labor contribution?	Guidelines will be established in cases where beneficiaries contribute labor for community improvements.
3.	Staffing	
3.1	What is the (proposed) organizational structure of the accounting department? Attach an organization chart.	To be decided.
3.2	Identify the (proposed) accounts staff, including job title, responsibilities, educational background and professional experience. Attach job descriptions and CVs of key accounting staff.	-
3.3	Is the project finance and accounting function staffed adequately?	-
3.4	Is the finance and accounts staff adequately qualified and experienced?	Further training needed in ADB procedures.
3.5	Is the project accounts and finance staff trained in ADB procedures?	-
3.6	What is the duration of the contract with the finance and accounts staff?	-
3.7	Indicate key positions not contracted yet, and the estimated date of appointment.	-

1.	Agency	
3.10	Does the project have written position descriptions that clearly define duties, responsibilities, lines of supervision, and limits of authority for all of the officers, managers, and staff?	-
3.11	At what frequency are personnel transferred?	-
3.12	What is training policy for the finance and accounting staff?	-
4.	Accounting Policies and Procedures	
4.1	Does the entity have an accounting system that allows for the proper recording of project financial transactions, including the allocations of expenditures in accordance with the respective components, disbursement categories, and sources of funds? Will the project use the entity accounting system?	Yes.
4.2	Are controls in place concerning the preparation and approval of transactions, ensuring that all transactions are correctly made and adequately explained?	Yes.
4.3	Is the chart of accounts adequate to properly account for and report on project activities and disbursement categories?	Yes.
4.4	Are cost allocations to the various funding sources made accurately and in accordance with established agreements?	Yes.
4.5	Are the General Ledger and subsidiary ledgers reconciled and in balance?	Yes.
4.6	Are all accounting and supporting documents retained on a permanent basis in a defined system that allows authorized users easy access?	Yes.
	Segregation of Duties	
4.7	Are the following functional responsibilities performed by different units or persons: (i) authorization to execute a transaction; (ii) recording of the transaction; and (iii) custody of assets involved in the transaction?	Yes.
4.8	Are the functions of ordering, receiving, accounting for, and paying for goods and services appropriately segregated?	Yes.
4.9	Are bank reconciliation prepared by someone other than those who make or approve payments?	Yes.
	Budgeting System	
4.10	Do budgets include physical and financial targets?	-.
4.11	Are budgets prepared for all significant activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance?	-
4.12	Are actual expenditures compared to the budget with reasonable frequency, and explanations required for significant variations from the budget?	-
4.13	Are approvals for variations from the budget required in advance or after the fact?	-
4.14	Who is responsible for preparation and approval of budgets?	-
4.15	Are procedures in place to plan project activities, collect information from the units in charge of the different components, and prepare the budgets?	-
4.16	Are the project plans and budgets of project activities realistic, based on valid assumptions, and developed by knowledgeable individuals?	-

1. Agency		
Payments		
4.17	Do invoice-processing procedures provide for: (i) Copies of purchase orders and receiving reports to be obtained directly from issuing departments? (ii) Comparison of invoice quantities, prices and terms, with those indicated on the purchase order and with records of goods actually received? (iii) Comparison of invoice quantities with those indicated on the receiving reports? (iv) Checking the accuracy of calculations?	Yes
4.18	Are all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment?	Yes. All transactions made through State fund Bank is registered.
4.19	Do controls exist for the preparation of the payroll and are changes to the payroll properly authorized?	Yes.
Policies and Procedures		
4.20	What is the basis of accounting (e.g., cash, accrual)?	Accrual basis.
4.21	What accounting standards are followed?	International Accounting Standards. State sector accounting standards
4.22	Does the project have an adequate policies and procedures manual to guide activities and ensure staff accountability?	-
4.23	Is the accounting policy and procedure manual updated for the project activities?	-
4.24	Do procedures exist to ensure that only authorized persons can alter or establish a new accounting principle, policy or procedure to be used by the entity?	Yes
4.25	Are there written policies and procedures covering all routine financial management and related administrative activities?	Accounting Policy and Procedures of Budget Organizations
4.26	Do policies and procedures clearly define conflict of interest and related party transactions (real and apparent) and provide safeguards to protect the organization from them?	-
4.27	Are manuals distributed to appropriate personnel?	Yes
Cash and Bank		
4.28	Indicate names and positions of authorized signatories in the bank accounts.	1st signature Head of State fund; 2nd signature Chief Accountant
4.29	Does the organization maintain an adequate, up-to-date cashbook, recording receipts and payments?	Yes.
4.30	Do controls exist for the collection, timely deposit and recording of receipts at each collection location?	Yes.
4.31	Are bank and cash reconciled on a monthly basis?	Yes.
4.32	Are all unusual items on the bank reconciliation reviewed and approved by a responsible official?	Yes.
4.33	Are all receipts deposited on a timely basis?	Yes.

1.	Agency	
Safeguard over Assets		
4.34	Is there a system of adequate safeguards to protect assets from fraud, waste and abuse?	
4.35	Are subsidiary records of fixed assets and stocks kept up to date and reconciled with control accounts?	
4.36	Are there periodic physical inventories of fixed assets and stocks?	
4.37	Are assets sufficiently covered by insurance policies?	
Other Offices and Implementing Entities		
4.38	Are there any other regional offices or executing entities participating in implementation?	Yes.
4.39	Has the project established controls and procedures for flow of funds, financial information, accountability, and audits in relation to the other offices or entities?	Yes.
4.40	Does information among the different offices/implementing agencies flow in an accurate and timely fashion?	Yes.
4.41	Are periodic reconciliation performed among the different offices/implementing agencies?	Yes.
4.42	Other	-
5.	Internal Audit	
5.1	Is there a internal audit department in the entity?	-
5.2	What are the qualifications and experience if audit department staff?	-
5.3	To whom does the internal auditor report?	-
5.4	Will the internal audit department include the project in its work program?	-
5.5	Are actions taken on the internal audit findings?	-
6.	External Audit	
6.1	Is the entity financial statement audited regularly by an independent auditor? Who is the auditor?	Yes. General auditor of Aimag.
6.2	Are there any delays in audit of the entity? When are the audit reports issued?	None
6.3	Is the audit of the entity conducted according to the International Standards on Auditing?	Yes.
6.4	Were there any major accountability issues brought out in the audit report of the past three years?	-
6.5	Will the entity auditor audit the project accounts or will another auditor be appointed to audit the project financial statements?	-

1.	Agency	
6.6	Are there any recommendations made by the auditors in prior audit reports or management letters that have not yet been implemented?	-
6.7	Is the project subject to any kind of audit from an independent governmental entity (e.g., the supreme audit institution) in addition to the external audit?	Yes, Mongolian National Audit Office.
6.8	Has the project prepared acceptable terms of reference for an annual project audit?	-
7.	Reporting and Monitoring	
7.1	Are financial statements prepared for the entity? In accordance with which accounting standards?	Yes. International Accounting Standards. State sector accounting standards
7.2	Are financial statements prepared for the implementing agency?	Yes
7.3	What is the frequency of preparation of financial statements? Are the reports prepared in a timely fashion so as to useful to management for decision making?	Yes by Accounting Law. Quarterly basis.
7.4	Does the reporting system need to be adapted to reports on the project components?	-
7.5	Does the reporting system have the capacity to link the financial information with the project's physical progress? If separate systems are used to gather and compile physical data, what controls are in place to reduce the risk that the physical data may not synchronize with the financial data?	-
7.6	Does the project have established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain, and how they are to be used?	-
7.7	Are financial management reports used by management?	Yes.
7.8	Do the financial reports compare actual expenditures with budgeted and programmed allocations?	Yes.
7.9	Are financial reports prepared directly by the automated accounting system or are they prepared by spreadsheets or some other means?	Automated accounting system. ACQULOUS software.
8.	Information Systems	
8.1	Is the financial management system computerized?	Yes.
8.2	Can the system produce the necessary project financial reports?	-
8.3	Is the staff adequately trained to maintain the system?	Yes.
8.4	Does the management organization and processing system safeguard the confidentiality, integrity and availability of the data?	Yes.

Source: Aimag Governor's office