

# Supporting Report for Chapter 8 “Evaluation of Proposed Management Plans”

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**ANNEX to 8.1.2**  
**Water Conveyance**

Wahda Dam

Hydraulic Analysis (M m<sup>3</sup>/yr)

Item	Allocation	Water Qty	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
<b>Water Produced</b>			108	0	0	0	0	0	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108	
Saved			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Municipal Water</b>	1.54	58.3	0.0	0.0	0.0	0.0	0.0	38.3	38.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
Physical Losses (%)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Physical Losses			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Administrative/Managerial Losses (%)			1.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Administrative/Managerial Losses			0.0	0.0	0.0	0.0	0.0	5.8	5.2	4.7	4.1	3.5	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Quantity Delivered			0.0	0.0	0.0	0.0	0.0	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3	58.3
Quantity Waste Bills are Collected			0.0	0.0	0.0	0.0	0.0	52.5	53.1	53.7	54.2	54.8	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4
<b>Industrial Water</b>	0.05	5.4	0.0	0.0	0.0	0.0	0.0	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Physical Losses (%)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Physical Losses			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Administrative/Managerial Losses (%)			1.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Administrative/Managerial Losses			0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Quantity Delivered			0.0	0.0	0.0	0.0	0.0	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Quantity Waste Bills are Collected			0.0	0.0	0.0	0.0	0.0	4.9	4.9	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
<b>Irrigation Water</b>	1.41	44.3	0.0	0.0	0.0	0.0	0.0	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Physical Losses (%)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Physical Losses			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Administrative/Managerial Losses (%)			1.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Administrative/Managerial Losses			0.0	0.0	0.0	0.0	0.0	4.4	4.0	3.5	3.1	2.7	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Quantity Delivered			0.0	0.0	0.0	0.0	0.0	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Quantity Waste Bills are Collected			0.0	0.0	0.0	0.0	0.0	39.9	40.3	40.7	41.2	41.6	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1

Financial Analysis (M JD at 2000 Prices)

Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
<b>Costs</b>																								
Local Costs	28%	31.2	3.0	5.0	7.0	7.0	6.4	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Foreign Costs	39%	130.8	12.1	20.0	28.0	28.0	26.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Duty & Taxes	8%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Capital Costs		151.0	15.1	25.0	35.0	35.0	32.8	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Operational Costs		40.0	0.0	0.0	11.0	14.3	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	
O & M Costs	1.5%	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
Total Costs		151.0	15.1	25.0	35.0	35.0	33.6	8.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
<b>Revenues</b>																								
Municipal Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	0.0	52.5	53.1	53.7	54.2	54.8	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	
Municipal Tariff (JD/m <sup>3</sup> )			0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	0.341	
Municipal Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	17.9	18.1	18.3	18.5	18.7	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	
Industrial Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	0.0	4.9	4.9	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Industrial Tariff (JD/m <sup>3</sup> )			1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	1.088	
Industrial Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	4.9	4.9	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Irrigation Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	0.0	39.9	40.3	40.7	41.2	41.6	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	42.1	
Irrigation Tariff (JD/m <sup>3</sup> )			0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	
Irrigation Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Total Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	23.2	23.4	23.7	23.9	24.2	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4	
<b>Net Cash Flow (M JD)</b>			-15.1	-25.0	-35.0	-35.0	-33.6	-8.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	
Discounting (DR=6.5%)			0.93897	0.88166	0.82785	0.77732	0.72988	0.68535	0.64351	0.60423	0.56735	0.53275	0.50021	0.46961	0.44112	0.41480	0.39063	0.36818	0.34731	0.32789	0.30974	0.29368	0.27946	
<b>Total Qty Waste Bills are Collected (M m<sup>3</sup>)</b>			0.0	0.0	0.0	0.0	0.0	97.2	98.3	99.4	100.4	101.5	102.6	102.6	102.6	102.6	102.6	102.6	102.6	102.6	102.6	102.6	102.6	
<b>FIRR</b>	13%																							
<b>NPV (M JD)</b>	84.4		-14.1	-22.0	-29.0	-27.2	-24.1	0.9	14.6	13.8	13.1	12.5	11.9	11.1	10.4	9.8	9.2	8.6	8.1	7.6	7.2	6.7	6.3	
<b>PV of Total Costs (M JD)</b>	128.6		14.1	22.0	29.0	27.2	24.1	8.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
<b>PV of Total Bills Collected Qty (M m<sup>3</sup>)</b>	90.2		0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
<b>Unit Water Price (FJD/m<sup>3</sup>)</b>	142																							

**Economic Analysis (M JD at 2000 Prices)**

Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Costs</b>																							
Local Costs	20%	30.2	3.0	5.0	7.0	7.0	6.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Foreign Costs	80%	120.8	12.0	20.0	28.0	28.0	26.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Duty & Taxes	0%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Capital Costs		151	15.0	25.0	35.0	35.0	33.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cumulative Costs			0.0	40.0	75.0	110.0	143.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	151.0	
O & M Costs	1.5%		0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
Total Costs			15.0	25.0	35.0	35.0	33.0	8.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
<b>Benefits</b>																							
Municipal Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	0.0	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	38.3	
Unit Benefits of Municipal Water (JD/m <sup>3</sup> )			0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	
Municipal Benefits (M JD)			0.0	0.0	0.0	0.0	0.0	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	42.9	
Industrial Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	0.0	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	
Unit Benefits of Industrial Water (JD/m <sup>3</sup> )			2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	
Industrial Benefits (M JD)			0.0	0.0	0.0	0.0	0.0	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	
Irrigation Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	0.0	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	
Unit Benefits of Irrigation Water (JD/m <sup>3</sup> )			0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	0.281	
Irrigation Benefits (M JD)			0.0	0.0	0.0	0.0	0.0	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
Total Benefits (M JD)			0.0	0.0	0.0	0.0	0.0	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	
Net Cash Flow (M JD)			-15.0	-25.0	-35.0	-35.0	-33.0	-61.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	-69.4	
Discounting (DF=10%)			1.94909	0.12645	0.75131	0.68301	0.62092	0.56447	0.51316	0.46651	0.42410	0.38554	0.35049	0.31863	0.28966	0.26333	0.23935	0.21761	0.19784	0.17916	0.16151	0.14464	
Total Qty Delivered (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	0.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	
<b>EBRS</b>																							
NPV (M JD)	29%		-13.6	-20.7	-26.3	-23.9	-20.5	34.7	35.6	32.4	29.4	26.8	24.3	22.1	20.1	18.3	16.6	15.1	13.7	12.5	11.4	10.3	
FV of Total Costs (M JD)			113.6	20.7	26.3	23.9	20.5	4.9	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
FV of Total Qty Delivered (M m <sup>3</sup> )			608.7	8.8	8.8	8.8	8.8	61.0	55.4	50.4	45.8	41.6	37.9	34.4	31.3	28.4	25.9	23.5	21.4	19.4	17.7	16.1	
Unit Water Price (Floris)			187																				

**Small Dam (Bas, Hamaf, Korak, Mafdeha)**

**Hydraulic Analysis (M m<sup>3</sup>/yr)**

Item	Abstraction	Water Qty	2000	2011	2022	2033	2044	2055	2066	2077	2088	2099	2100	2111	2122	2133	2144	2155	2166	2177	2188	2199	2200
<b>Water Produced</b>		13	0	0	0	0	0	0	0	0	0	13	13	13	13	13	13	13	13	13	13	13	13
<b>Saved</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Municipal Water</b>	1.10	0.6	0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Physical Losses (%)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Administrative/Managerial Losses (%)			0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Quantity Delivered			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Whose Bills are Collected			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Industrial Water</b>	1.27	3.5	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Physical Losses (%)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Administrative/Managerial Losses (%)			0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Quantity Delivered			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Whose Bills are Collected			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Irrigation Water</b>	1.73	9.5	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Physical Losses (%)			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Administrative/Managerial Losses (%)			0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Quantity Delivered			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Whose Bills are Collected			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Financial Analysis (M JD at 2000 Prices)**

Item	Percent	Amount	2000	2011	2022	2033	2044	2055	2066	2077	2088	2099	2100	2111	2122	2133	2144	2155	2166	2177	2188	2199	2200
<b>Costs</b>																							
Local Costs	26%	3.6	0.0	1.0	0.0	0.4	1.4	0.5	0.5	0.4	0.4	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Foreign Costs	19%	13.4	0.0	1.0	0.0	1.6	1.6	2.0	2.0	1.6	1.6	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Duty & Taxes	4%	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital Costs		13	0.0	1.0	0.0	2.0	2.0	2.5	2.5	2.0	2.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Cumulative Costs			0.0	0.0	0.0	2.0	4.0	6.5	9.0	11.0	13.0	12.0	15.0	13.0	15.0	13.0	13.0	15.0	13.0	15.0	13.0	15.0	13.0
O & M Costs	1.6%	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.1	0.1	0.1	0.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Costs			0.0	1.0	0.0	2.0	2.1	2.5	2.5	2.0	2.0	1.1	0.1	0.1	0.1	0.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>Revenues</b>																							
Municipal Usage Qty (M m <sup>3</sup> )			0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Municipal Tariff (JD/m <sup>3</sup> )			0.294	0.294	1.344	0.294	0.294	0.294	0.294	1.244	0.294	0.294	0.294	1.244	0.294	0.294	1.244	0.294	0.294	0.294	0.294	0.294	1.244
Municipal Revenue (M JD)			0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Industrial Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Industrial Tariff (JD/m <sup>3</sup> )			1.000	1.000	1.800	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.800	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.800
Industrial Revenues (M JD)			0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Irrigation Usage Qty (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Irrigation Tariff (JD/m <sup>3</sup> )			0.011	0.010	0.010	1.010	0.010	0.011	0.010	0.010	0.010	0.010	0.011	1.110	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Irrigation Revenue (M JD)			0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.1	0.1	0.1	0.1	0.1	1.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Revenues (M JD)			0.0	1.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Net Cash Flow (M JD)			0.0	0.0	0.0	-2.0	-1.1	-2.5	-2.5	-2.0	-2.0	1.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Discounting (DR=6.5%)			1.91897	0.68166	0.32715	1.77732	0.72931	0.41533	0.44351	0.60413	1.56735	0.53273	0.51621	0.46963	0.44132	0.41410	0.38881	0.36510	0.34281	0.32119	0.30224	0.28380	0.26648
Total Qty Whose Bills are Collected (M m <sup>3</sup> )			0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	12.2	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4
<b>FIRR</b>	16%																						
NPV (M JD)	13.7		0.0	0.0	0.0	-1.6	-1.5	-1.7	-1.6	-1.2	-1.1	1.7	1.6	1.5	1.5	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.9
FV of Total Costs (M JD)	9.6		1.1	0.0	0.0	1.6	1.5	1.7	1.6	1.2	1.1	0.1	1.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
FV of Total Bills Collected Qty (M m <sup>3</sup> )	23.9		1.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	6.5	6.2	5.8	5.4	5.1	4.8	4.5	4.2	4.0	3.7	3.5	3.3
Unit Water Price (JD/m <sup>3</sup> )	114																						

**Economic Analysis (M JD at 2000 Prices)**

Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Costs</b>																							
Local Costs	20%	2.6	0.1	0.0	0.1	0.4	0.4	0.5	0.5	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foreign Costs	80%	10.4	0.1	0.0	0.1	1.6	1.6	2.0	2.0	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Duty & Taxes	0%	0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital Costs		13	0.1	0.0	0.1	2.0	2.0	2.5	2.5	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operative Costs			0.1	0.0	0.1	2.0	4.0	6.5	9.0	11.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
O & M Costs	1.0%		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Costs			0.1	0.0	0.1	2.0	2.0	2.5	2.5	2.0	2.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>Benefits</b>																							
Municipal Usage Qty (M m <sup>3</sup> )			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unit Benefits of Municipal Water (JD/m <sup>3</sup> )			0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735
Municipal Benefits (M JD)			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial Usage Qty (M m <sup>3</sup> )			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.5	3.5	3.5	3.5	3.5	3.51	3.51	3.51	3.51	3.51	3.51
Unit Benefits of Industrial Water (JD/m <sup>3</sup> )			2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740
Industrial Benefits (M JD)			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Irrigation Usage Qty (M m <sup>3</sup> )			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Unit Benefits of Irrigation Water (JD/m <sup>3</sup> )			0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285	0.285
Irrigation Benefits (M JD)			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Total Benefits (M JD)			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
Net Cash Flow (M JD)			0.1	0.0	0.1	-2.0	-2.0	-2.5	-2.5	-2.0	-2.0	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
Discounting (DR=10%)			0.00093	0.02645	0.075131	0.068101	0.062092	0.056447	0.051316	0.46651	0.42410	0.38554	0.35049	0.31863	0.28966	0.26333	0.23939	0.21763	0.19784	0.17996	0.16351	0.14864	0.13513
Total Qty Delivered (M m <sup>3</sup> )			0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
<b>ERR</b>																							
NPV (M JD)	37%		0.1	0.0	0.1	-1.4	-1.2	-1.4	-1.3	-0.9	-0.8	4.7	4.3	3.9	3.5	3.2	2.9	2.6	2.4	2.2	2.0	1.8	1.6
PV of Total Costs (M JD)			0.0	0.0	0.0	1.4	1.2	1.4	1.3	0.9	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PV of Total Qty Delivered (M m <sup>3</sup> )			49.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.0	4.6	4.1	3.8	3.4	3.1	2.8	2.6	2.5	2.1	1.9	1.8
Unit Water Price (JD/m <sup>3</sup> )			153																				