

Annex to 3.4.1 Description Of Proposed Measures For Wastewater Collection, Treatment And Disposal

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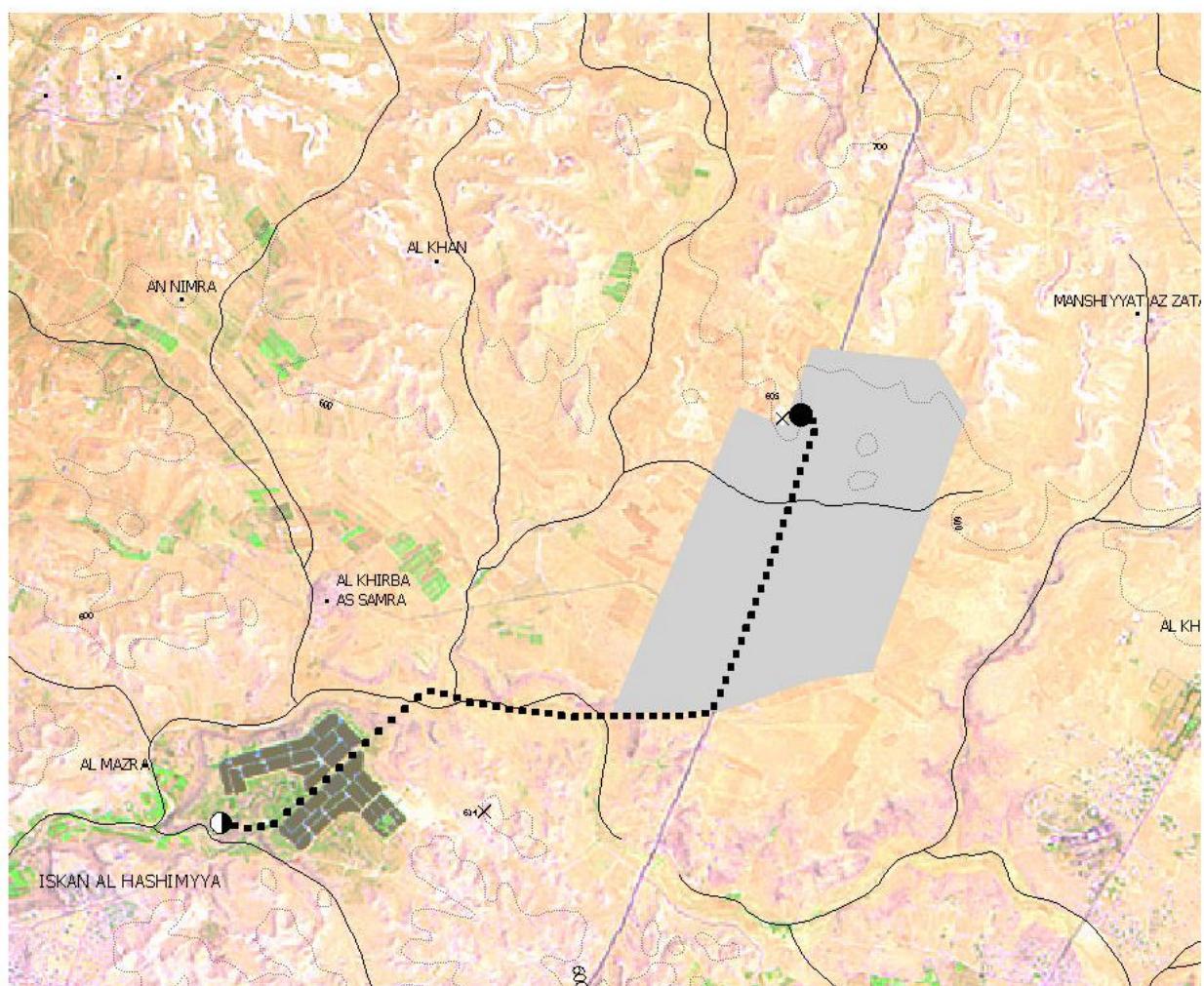


FIGURE 3.3b: Highlands irrigation project (Option HL#2)

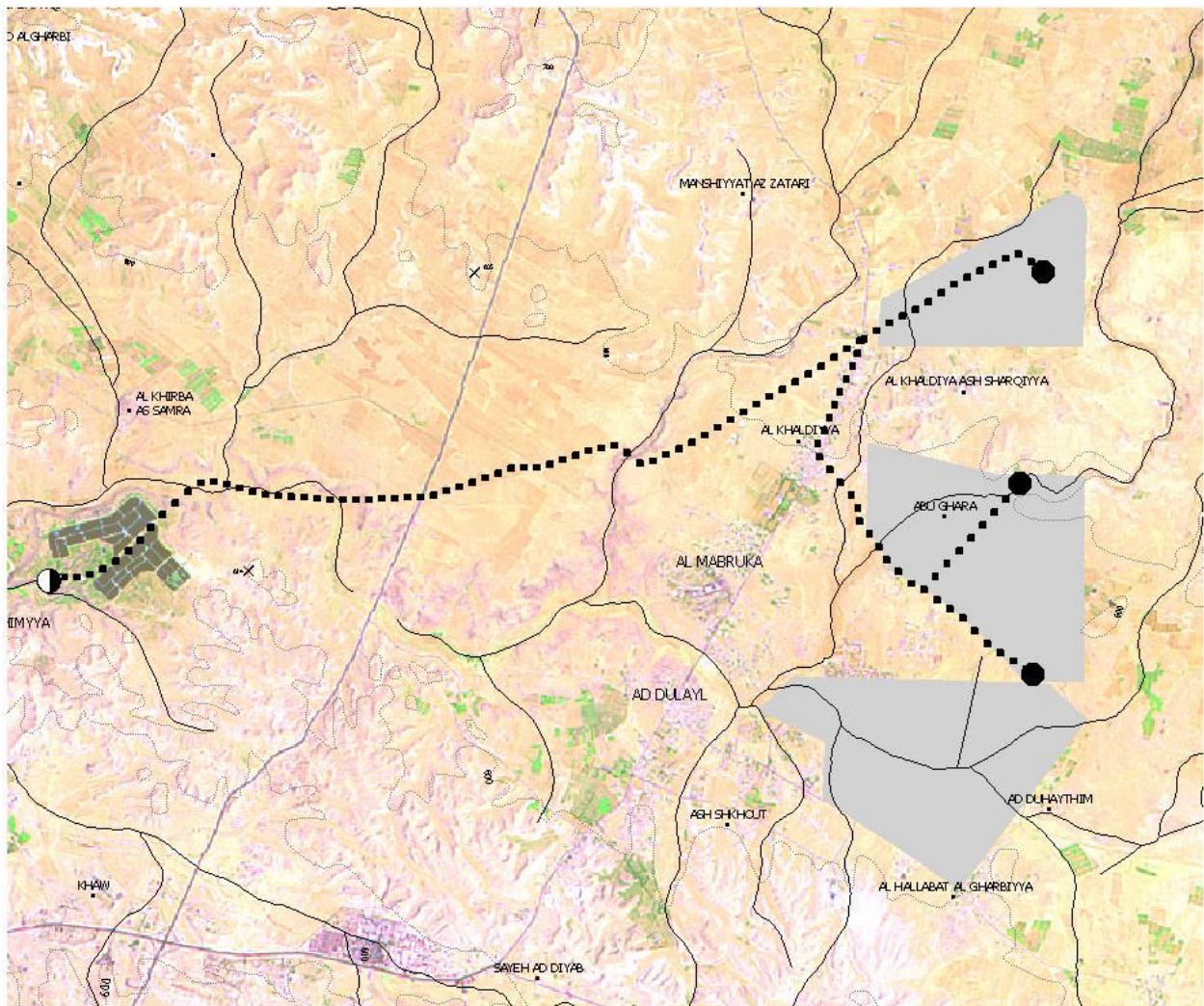


FIGURE 3.3c:Wadi Dhuleil and Khalidiyyeh irrigation project (Option HL#3)

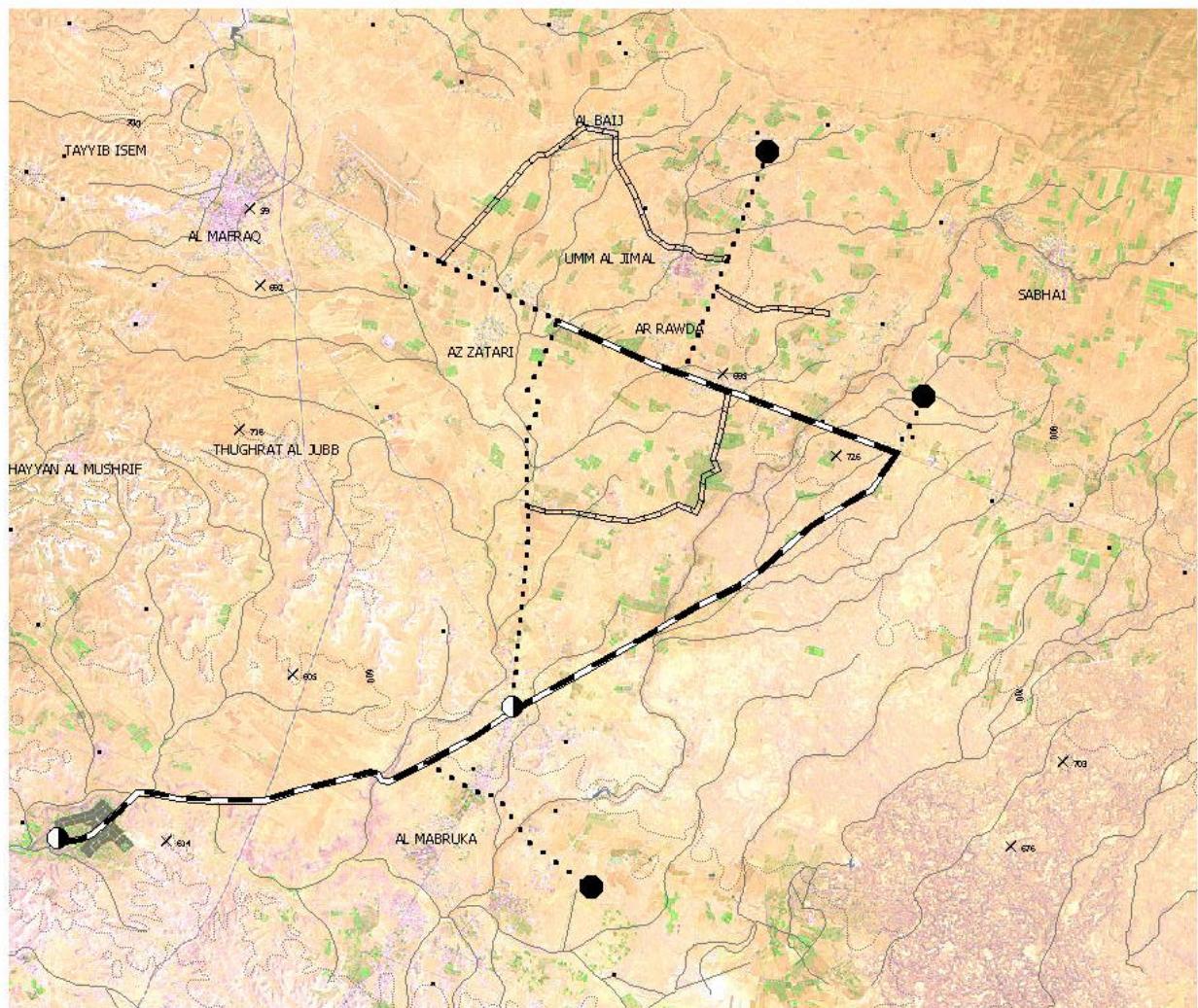


FIGURE 3.3d: Highlands irrigation distribution network (Option HL#4)

**PROJECTION OF WASTEWATER PRODUCTION OF TREATMENT PLANT:
3 AS SAMRA**

SCENARIO 0 "Consultants' Study" (acc. to Consultant's Study Report)

Basic data:

	Population in 1994	1.564.000	Population in 1994: Population in 2005:			954.000 (living in 2010 restructured di 1.523.931 see also Wadi Zarqa system)		
			Unit	1994	2000	2005	2010	2015
Growth rate (previous period)	%	-		4,35	4,2		4,15	4,05
Spec.water demand	l/c/d	100		105	126		131	136
Commercial demand	m³/d							
Small industrial demand	m³/d							
Pastoral demand	m³/d							
Coverage	%	93		93	95		100	100
Return factor	-	0,85		0,85	0,87		0,87	0,87
Losses/inflow	%	0		0	0		0	0
Specific pollutational load	gBOD ₅ /c/d	65		65	65		65	65
			Unit	1994	2000	2005	2010	2015
Population	c	1.564.000		2.019.256	2.480.448		1.867.505	2.277.572
Connected (sewerage)	c	1.454.520		1.877.908	2.356.425		1.867.505	2.277.572
Not connected (sewerage)	c	109.480		141.348	124.022		0	0
Water demand								
Domestic demand	l/c/d	100		105	126		131	136
	m³/d	156.400		212.022	312.536		244.643	309.750
Commercial demand	m³/d							
Small industrial demand	m³/d							
Pastoral demand	m³/d							
Total	m³/d	156.400		212.022	312.536		244.643	309.750
Wastewater production								
Return flow (w.demand)	m³/d	123.634		167.603	258.311		212.840	269.482
Losses/inflow	m³/d	0		0	0		0	0
Total	m³/d	123.634		167.603	258.311		212.840	269.482
	m³/month	3.709.026		5.028.100	7.749.340		6.385.186	8.084.470
	m³/a	45.126.483		61.175.215	94.283.638		77.686.427	98.361.056
								123.653.958
Pollutational load								
Poll. load (dom.demand)	kgBOD ₅ /d	94.544		122.064	153.168		121.388	148.042
Poll. load (com.demand)	kgBOD ₅ /d							
Poll. load (small ind.)	kgBOD ₅ /d							
Others	kgBOD ₅ /d							
Total load	kgBOD ₅ /d	94.544		122.064	153.168		121.388	148.042
								179.511
Reuse of wastewater								
Inflow to the treatment plant	m³/a	45.126.483		61.175.215	94.283.638		77.686.427	98.361.056
Losses in treatment plant (due to infiltr./evap.)	%	25		25	5		5	5
Effluent of treatment plant	m³/a	11.281.621		15.293.804	4.714.182		3.884.321	4.918.053
Net water demand per ha	m³/d/ha	33.844.862		45.881.412	89.569.456		73.802.105	93.443.003
Irrigable reuse area	ha	-		-	-		-	-

Water demand for irrigation