

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
1	Action Plan for Implementing the Strategy(2009-2022) for Water Sector	5672 days	[Summary bar]												
2	Water Demand	4179 days	[Summary bar]												
3	Projects	4179 days	[Summary bar]												
4	Rehabilitation and Expansion Projects	3919 days	[Summary bar]												
5	Middle Governorates	1740 days	[Summary bar]												
6	Rehabilitation of Zarqa networks (Japanese grant for Zarka water networks) JICA (Phase II)	1000 days	[Task bar]												
7	Dhiban district network rehabilitation	365 days	[Task bar]												
8	Rehabilitation and restructuring of Russifa area/ Phase (I)	520 days	[Task bar]												
9	Rehabilitation and restructuring of Russifa area/ Phase (II)	980 days	[Task bar]												
10	Northern Governorates	365 days	[Summary bar]												
11	Rehabilitation and improvement of water networks Northern Governorates	365 days	[Task bar]												
12	Southern Governorates	1300 days	[Summary bar]												
13	Rehabilitation and expansion of the water facilities in Southern Governorates (Tafeileh & Ma'an) Phase I	1300 days	[Task bar]												
14	Rehabilitation and expansion of water facilities of Ma'an and Tafilah Governorates Phase 2	784 days	[Task bar]												
15	All Governorates	3394 days	[Summary bar]												
16	Rehabilitation and expansion of the water networks in south & middle Jordan Valley	1050 days	[Task bar]												
17	Poverty reduction projects and royal grants housing project	1565 days	[Task bar]												
18	Improvement, rehabilitation & expansion of water network and transmission mains in various areas (Al Husun, Hourarah, Theiban, and Dhleil)	1570 days	[Task bar]												
19	Improvement, rehabilitation & expansion of water network and transmission mains in various areas in the kingdom	1850 days	[Task bar]												
20	Amman Projects	1832 days	[Summary bar]												
21	Infrastructure projects	1832 days	[Summary bar]												
22	Replacement of house connections and distribution pipes	1046 days	[Task bar]												
23	Meter replacement and upgrade	1046 days	[Task bar]												
24	Denitrification unit at Tadj station	263 days	[Task bar]												
25	Rehabilitate sewerage network	1046 days	[Task bar]												
26	Backlog of water and sewer extensions	784 days	[Task bar]												
27	Overcome shortcomings of CI projects	524 days	[Task bar]												
28	South Amman rehabilitation <sup>2</sup>	784 days	[Task bar]												
29	New reservoir for Zara main water	784 days	[Task bar]												
30	South Amman restructuring and rehabilitation	1044 days	[Task bar]												
31	North Amman projects	784 days	[Task bar]												
32	House connection replacement	1044 days	[Task bar]												
33	Customers water meters low flow and collectors	1307 days	[Task bar]												
34	Quality Projects	784 days	[Summary bar]												
35	De-Nitrification unit for Tadj wells	263 days	[Task bar]												
36	UV units for Zai Treatment Plant Effluent water	390 days	[Task bar]												
37	Improving Abu-Zhegan raw water conveyance system	263 days	[Task bar]												
38	Construct a centralized lab for drinking water and wastewater	784 days	[Task bar]												
39	Business Plan initiatives	1568 days	[Summary bar]												
40	MEETING THE DEMANDS OF GROWTH	1306 days	[Summary bar]												
41	Capital investment program in water extensions	1306 days	[Task bar]												
42	Overcome shortcomings of CIP projects	1045 days	[Task bar]												
43	Rehabilitation of Kharabashe pumping station	524 days	[Task bar]												
44	ESTABLISHING CUSTOMERS CONFIDENCE	1568 days	[Summary bar]												
45	Internal and external communications and water conservation awareness	1306 days	[Task bar]												
46	Improve customer service facilities	784 days	[Task bar]												
47	Develop a safer work environment in public works and water production facilities	1045 days	[Task bar]												
48	Improve billing accuracy and reliability	524 days	[Task bar]												
49	Optimize reading, billing, and collection procedures	1045 days	[Task bar]												
50	Upgrade Zai water treatment plant visitor center	1306 days	[Task bar]												
51	Improve and upgrade lab testing	264 days	[Task bar]												
52	Assisting Customers in Post Meter Issues	524 days	[Task bar]												
53	Evaluate introduction of fluoride into water treatment process	264 days	[Task bar]												
54	Improve customer service procedures and policies	264 days	[Task bar]												
55	Improve response time for customer objections	264 days	[Task bar]												
56	Revise wastewater connection fee	264 days	[Task bar]												
57	MANAGING WATER SCARCITY	1568 days	[Summary bar]												
58	Rehabilitation of house connections and distribution pipes (KFW partial fund.)	1306 days	[Task bar]												
59	South Amman water network rehabilitation	1306 days	[Task bar]												

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60	New reservoir for Zara Mee'n	524 days				█									
61	Meter replacement and upgrade	1306 days				█	█	█	█						
62	Strengthen DZ management practices - technical and commercial	1306 days				█	█	█	█						
63	Denitrification unit at Tadj Station	264 days	█												
64	Ultra filtration unit at Wadi Seer treatment plant	264 days	█												
65	Optimize capacity of water treatment plants	264 days	█												
66	Reduce commercial water losses	784 days	█			█									
<b>67</b>	<b>NRW Projects</b>	<b>3830 days</b>				█	█	█	█	█	█	█	█	█	█
<b>68</b>	<b>Middle Governorates</b>	<b>1402 days</b>				█	█	█	█						
69	Water Loss Reduction Program Zarqa Governorate	1304 days				█	█	█	█						
70	Rusayfah Water Loss Reduction	750 days				█	█	█	█						
<b>71</b>	<b>Northern Governorates</b>	<b>3747 days</b>				█	█	█	█	█	█	█	█	█	█
72	Continue the Water Loss Reduction in Irbid and Jerash (current programme)	615 days				█	█	█	█						
73	Contract WLRP-C4 (funded from RRF)	805 days				█	█	█	█						
74	Rehabilitation of Water Supply Networks, Jerash ROU	521 days				█	█	█	█						
75	WLRP in northern governorates (future programme I) including pressure management	1042 days				█	█	█	█						
76	WLRP in northern governorates (future programme II) including pressure management	1303 days				█	█	█	█						
77	WLRP in northern governorates (future programme III) including pressure management	1303 days				█	█	█	█						
78	Irbid house connection replacement programme	1955 days				█	█	█	█	█	█	█	█	█	█
79	Jerash house connection replacement programme	1955 days				█	█	█	█	█	█	█	█	█	█
80	Ajloun house connection replacement programme	1955 days				█	█	█	█	█	█	█	█	█	█
81	Mafraq house connection replacement programme	1955 days				█	█	█	█	█	█	█	█	█	█
82	Domestic meter replacement programme (RRF funded - Class B meters)	520 days				█	█	█	█						
<b>83</b>	<b>Southern Governorates</b>	<b>1465 days</b>				█	█	█	█						
84	Water Loss Reduction in Karak (I)	422 days				█	█	█	█						
85	WLRP / Karak/stage (II)	1043 days				█	█	█	█						
86	WLRP for remaining areas of the Kingdom	1565 days				█	█	█	█	█	█	█	█	█	█
<b>87</b>	<b>Programmes</b>	<b>3654 days</b>				█	█	█	█	█	█	█	█	█	█
<b>88</b>	<b>Awareness</b>	<b>3654 days</b>				█	█	█	█	█	█	█	█	█	█
<b>89</b>	<b>Increase public awareness of their role in Water scarcity challenges and the importance of conserving our limited wa</b>	<b>3654 days</b>				█	█	█	█	█	█	█	█	█	█
<b>90</b>	<b>Role of citizens in facing the challenges by conservation means and material</b>	<b>3654 days</b>				█	█	█	█	█	█	█	█	█	█
91	450 lecturers yearly / 10 for each Education Department 5 for each sub governorates every year, to cover the period (2009-2022)	220 days				█	█	█	█						
92	Print and distribute 300,000 copies of awareness books, pamphlets, brochures, and posters each year	3650 days				█	█	█	█	█	█	█	█	█	█
93	TV, Radio programs (spots, Dialogue, statement on screen documentary films, religion, culture, youth, and other programs)	3650 days				█	█	█	█	█	█	█	█	█	█
94	Promote and Expand using of Water conservation Technology for All sector; Agriculture, Industrial and Domestic (Work shop on Water Saving Devices/specificatio	3650 days				█	█	█	█	█	█	█	█	█	█
95	Promoting and Enhancing the techniques of Water Harvesting and Water Reuse in all Sectors	3650 days				█	█	█	█	█	█	█	█	█	█
96	implementation Harvest and Reuse Projects in each Governorates (mosques, schools, social associations, and etc...)	3650 days				█	█	█	█	█	█	█	█	█	█
97	Create awareness among the Jordanian decision makers	700 days				█	█	█	█						
98	Enhance collaboration among all concerned ministries	700 days				█	█	█	█						
<b>99</b>	<b>Work with the Ministry of Education to introduce water awareness programs in the form of events and curricula at i</b>	<b>3654 days</b>				█	█	█	█	█	█	█	█	█	█
100	Adding water issues in high schools curricula	3654 days				█	█	█	█	█	█	█	█	█	█
101	Organize events at high schools	3654 days				█	█	█	█	█	█	█	█	█	█
102	Invite the water users associations to participate with the government in setting implementing protection zones for surface and ground water	700 days				█	█	█	█						
<b>103</b>	<b>Existing water allocations and attendant problems</b>	<b>1564 days</b>				█	█	█	█						
104	Create clear concise information on what social, economic, and political actions are needed to cure the root causes of the problems	250 days				█	█	█	█						
105	Create understanding among water users of existing water allocations and attendant problems	700 days				█	█	█	█						
106	Develop Concrete suggestions on economically cost-efficient measures every individual can implement to reduce water demand	700 days				█	█	█	█						
107	Enforce regulations, policies and codes across all water users	1564 days				█	█	█	█	█	█	█	█	█	█
<b>108</b>	<b>Water Demand Management</b>	<b>1045 days</b>				█	█	█	█						
109	Instituting water demand management project	1045 days				█	█	█	█						
110	Water delivery schedules that fit the needs of customers	500 days				█	█	█	█						
<b>111</b>	<b>Institutionalize National Water Master Plan and Technology</b>	<b>3652 days</b>				█	█	█	█	█	█	█	█	█	█
<b>112</b>	<b>Northern Governorates</b>	<b>3652 days</b>				█	█	█	█	█	█	█	█	█	█
113	Establish and implement Groundwater Management Plans in order to begin to slow the dramatic decline in groundwater	780 days				█	█	█	█						
114	Reinstate dipping tubes in all wells	780 days				█	█	█	█						
115	Facilitate adoption of new innovative and proven technology to produce, distribute, and use/ reuse water more efficiently	3650 days				█	█	█	█	█	█	█	█	█	█
116	Work planning system	260 days				█	█	█	█						
117	Network modeling	780 days				█	█	█	█						
118	Irbid domestic meter replacement programme (Class C meters)	3389 days				█	█	█	█	█	█	█	█	█	█

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119	Jerash domestic meter replacement programme (Class C meters)	3389 days													
120	Ajloun domestic meter replacement programme (Class C meters)	3389 days													
121	Mafraq domestic meter replacement programme (Class C meters)	3389 days													
122	Encourage farmers to invest in new technology and provide better management when the incentive structure requires the investment	3650 days													
123	Provide training and awareness on how to use the technology properly (new meter reading systems, electronic data acquisition, management and maintenance of of drip irrigat	3650 days													
124	Assessing the provision of soft loans or grants to the local fixtures industry; to industries, agriculture, municipalities, and homes for implementation of technologies and approac	100 days													
125	More appropriate use of technology (Expanding the use of treated wastewater, Brackish water desalination programs, Replenish aquifers by the treated wastewater, etc)	3650 days													
126	Implementation of a plan to tackle large user governmental sites ( military, the civil defense, intelligence services, military hospitals, royal palaces etc.)	261 days													
<b>127</b>	<b>Technology</b>	<b>3651 days</b>													
<b>128</b>	<b>Project</b>	<b>3651 days</b>													
129	New meter reading systems for all urban settings	1050 days													
130	Electronic data acquisition for management of infrastructure components	500 days													
131	Software for technical, financial and economical processes to generate information for decision-makers	500 days													
132	Training and awareness on how to use the technology properly	3651 days													
133	SCADA system (Northern, Middle, and Southern Governorates)	913 days													
<b>134</b>	<b>Facilitate adoption of new innovative and proven technology to produce, distribute, and use/ reuse water more efficier</b>	<b>1050 days</b>													
135	Facilitate access to capital	1050 days													
136	Introduce higher water delivery fees	520 days													
137	Encourage farmers to invest in new technology and provide better management when the incentive structure requires the investment	500 days													
138	Assessing the provision of soft loans or grants to the local fixtures industry; to industries, agriculture, municipalities, and homes for implementation of technologies and app	500 days													
<b>139</b>	<b>Actions</b>	<b>3650 days</b>													
<b>140</b>	<b>Service Levels</b>	<b>3650 days</b>													
<b>141</b>	<b>Improve Existing Distribution Systems</b>	<b>3650 days</b>													
142	Removal of inadequacies in the various components of the existing systems	3650 days													
143	Continue with the enhancement	3650 days													
<b>144</b>	<b>Rehabilitation of old and damaged components</b>	<b>3650 days</b>													
145	Rehabilitate Zabda Service Reservoir, Irbid	85 days													
146	Rehabilitate Ras Montis service reservoir, Jerash	109 days													
147	Ensuring proper, safe, and high standards and specifications for pipe and other materials and for construction and operation and maintenance practices	3650 days													
148	Expand distribution systems to cover areas not being served	3650 days													
149	Improve technical and managerial capabilities for distribution systems	3650 days													
<b>150</b>	<b>Water Monitoring Control Centre (Central Laboratories)</b>	<b>380 days</b>													
<b>151</b>	<b>Improve the efficiency of water distribution through improved planning and strengthened technical, managerial, and financial capability of concerned institutions</b>	<b>3650 days</b>													
<b>152</b>	<b>Endeavor to meet water demands in the most effective and efficient manner, focusing on proper planning, improving operation and maintenance, and private sector pa</b>	<b>2500 days</b>													
<b>153</b>	<b>Water Supply</b>	<b>4160 days</b>													
<b>154</b>	<b>Pre Water Source Programme</b>	<b>3654 days</b>													
155	Monitoring basin safe yield project	3654 days													
156	Rainfall related studies program	3654 days													
157	Mitigation and adaptation of the impact in climate change program	3654 days													
158	Gray water utilization program studies	3654 days													
159	Water harvesting and artificial recharge study program	3654 days													
160	Reduction of evaporation from surface water resources program	3654 days													
161	Watershed management and protection for the main basins in the Kingdom and evaluation program	3654 days													
162	Investigation and evaluation of brackish water in the Kingdom program	3654 days													
163	Evaluation of the amount of underground seepage water to Dead Sea project	783 days													
164	Evaluation of fresh springs and submarine water in Aqaba Gulf study program	783 days													
165	Deep aquifer exploration and monitoring program	3654 days													
166	Surface water monitoring and enhancing program	3654 days													
167	Implementation of telemetric system and monitoring project	783 days													
168	Shared aquifer and transboundries water	3654 days													
169	Enforce buildings codes to use grey water storm water storage and water saving fixtures	3654 days													
170	Replenish the aquifers by treated wastewater	2100 days													
<b>171</b>	<b>Projects</b>	<b>4160 days</b>													
<b>172</b>	<b>BOT Projects</b>	<b>3912 days</b>													
173	DISI Project	1304 days													
174	Operation of DISI project (100 million m3/yr of cost = 85 million per year)	2608 days													
175	Desalination of water from Al-Karama Dam Project Construction	262 days													
176	Desalination of water from Al-Karama Dam Project Operation	1826 days													
<b>177</b>	<b>Shared Water Resources</b>	<b>3562 days</b>													

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178	Jordan River Storage – Peace Treaty	3562 days													
<b>179</b>	<b>Source projects</b>	<b>3744 days</b>													
180	Digging of new wells and improvement existing - new sources all governorates	1560 days													
181	Digging of new wells and improvement existing (Middle Gov)	1827 days													
182	Digging of new wells in northern governorates	520 days													
183	Rehabilitation of existing wells northern governorates	3650 days													
184	Development of Mandah wells 2 & 4 northern governorates	196 days													
185	Rehabilitation of existing wells (all Kingdom)	3650 days													
186	Desalination of Hisban brackish water	780 days													
187	Brackish water desalination programs	1050 days													
188	Water harvesting every year, to cover the period (2009-2022)	261 days													
<b>189</b>	<b>Dam projects</b>	<b>2653 days</b>													
190	Construction of Kufranjeh dam / Ajloun	760 days													
191	Construction of Ibn Hammad dam / Karak	783 days													
192	Construction of Khalid Ben Al Walid dam / Yarmouk	781 days													
193	Wadi Al-Halq	782 days													
<b>194</b>	<b>Medium size dam projects</b>	<b>2133 days</b>													
195	Construction of Wadi Rayyan dam / Irbid	523 days													
196	Construction of Tlal Dahab Regulating/storage dam / Balqa	390 days													
197	Construction of Zarqa-Maein dam / Madaba	413 days													
198	Construction of Wadi Karak dam / Karak	413 days													
199	Construction of Lajjoun dam / Karak	414 days													
200	Wadi Moussa recharge dam	521 days													
201	Construction of Rahmah dam / Aqaba	522 days													
202	Construction of Shaizam dam / Tafila	217 days													
203	Construction of Dlaga dam / Maen	216 days													
204	Construction of Whaideh dam / Maen	347 days													
<b>205</b>	<b>Water Systems Projects</b>	<b>3898 days</b>													
206	Improvement & expansion of water network and transmission mains in various areas in the Kingdom every year, to cover the period (2009-2022)	261 days													
<b>207</b>	<b>Procurement of pipes</b>	<b>261 days</b>													
208	Procurement of pipes every year, to cover the period (2009-2022)	261 days													
<b>209</b>	<b>Middle Governorates</b>	<b>1646 days</b>													
210	Improvement of the water supply system of Aein-Elbasha area	436 days													
211	Improvement of the water supply system for Salt district	456 days													
212	Improvement of the water supply system in Dead Sea	401 days													
213	Improvement of the Water Supply System for Zarqa District Phase III	1050 days													
214	Zarqa governorate water system restructuring and rehabilitation	<b>1368 days</b>													
<b>215</b>	<b>Northern Governorates</b>	<b>3898 days</b>													
216	Zquaeq project	179 days													
217	Kufr Assad source development	345 days													
218	Oyoon Al-Hammam well No 5	333 days													
219	Al-Karem well & Qneya WTP development	130 days													
220	South West villages improvements, Mafraq	150 days													
221	Zneiah WTP & well development	150 days													
222	Rehabilitation of pumping stations	3650 days													
223	Wadi Arab pumping stations refurbishment	261 days													
224	Improvement & expansion of water network and transmission mains in Zarqa- Russifa-Awajan	500 days													
225	Rehabilitation and expansion of water facilities in Central Governorates	1305 days													
226	Rehabilitation of pumping stations	3650 days													
227	Wadi Arab pumping stations refurbishment	590 days													
228	Houfa-Zatari transmission system	1045 days													
229	Al-Wihdah dam water supply project	1045 days													
230	Um El-Lulu transmission system	782 days													
231	Water supply of Mukhaiba wells to Irbid	700 days													
232	Water transmission to free zone of Mafraq	783 days													
233	Improvement of transmission mains in Northern Governorates	1567 days													
234	Construction of the conveyance water pipeline from Faisal Arboretum well to Jerash	750 days													
235	Construction of the conveyance water pipeline from Zabda to BaniKananeh	783 days													
236	Within the water sector, main trunk lines to be executed for supply of all southern governorates from Disi project by the year 2016	782 days													

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<b>237</b>	<b>Actions</b>	<b>3654 days</b>													
<b>238</b>	<b>Shared Water Resources</b>	<b>540 days</b>													
239	Work the bilateral and multilateral contacts, negotiations, and agreements to defend and protect the national water rights	540 days													
240	Give due respect to the provisions of international law as applicable to water sharing, protection and conservation, and those applicable to territorial waters	280 days													
241	Pursue Bilateral and multi-lateral co-operation with neighboring states and regional co-operation shall be advocated	540 days													
242	Work for the provisions of a Regional Water Charter	280 days													
<b>243</b>	<b>Planning</b>	<b>3600 days</b>													
244	Prepare and continuously update a Balancing and Allocations Plan	1580 days													
245	Further encourage the application of applied research activities	3600 days													
246	Pursue the development and continuous updating of National Master Plan applying the principle of long-term sustainability of sustainable management plans	3600 days													
247	Improve the efficiency of water distribution through improved planning and strengthened technical, managerial, and financial capability of concerned departments	3600 days													
248	Establish a critical path for the allocation of each new source of water	400 days													
249	Give first priority to allocation of the basic human needs, and as such, first priority is given to the allocation of a modest share of 100 liters per capita per day to domestic water	550 days													
250	Continuously update our national water data bank	3600 days													
251	Formulate a long-term plan for the exploitation of the resources, and a revolving five years plan shall be extracted from it and updated as necessary	282 days													
252	Revise the developed resources including resources mobilized for the irrigated agriculture in the JV and other established uses for confirmation of water allocations according to the long-term sustainable amounts as defined in Water Resources Manage. Plan	282 days													
<b>253</b>	<b>Assessment and Monitoring Programmes</b>	<b>3654 days</b>													
254	Upgrade an integrated program to assess the availability and exploitability of all resources at rates that can be sustained over long periods of time	130 days													
<b>255</b>	<b>Adopt an effective monitoring program to ensure that these standards are achieved. Such a program requires that analytical methodology, equipped laboratories and qualified personnel be provided</b>	<b>3654 days</b>													
256	Zone one Protection Programme	3654 days													
257	Coverage: Monitoring programs that cover at a minimum the requirements of the drinking water and wastewater national standards every year, to cover the period (2009-2	260 days													
258	Capability: well equipped labs that cover at a minimum the tests required in the drinking water and wastewater national standards	260 days													
259	Credibility: Results issued by the labs are accurate, timely and credible	260 days													
260	Competence: Staff of the laboratories are competent to perform the required tasks.	260 days													
261	Readiness: The labs are always ready to carry the required tasks any time.	260 days													
262	Implement a comprehensive monitoring and assessment programme for surface water, and establishing an integrated development and conservation programme to increase the potential of surface water development in Jordan	260 days													
263	Monitor and rate performance efficiency of the water and wastewater systems and the management thereof every year, to cover the period (2009-2022)	260 days													
<b>264</b>	<b>Water Quality and Environment</b>	<b>1825 days</b>													
265	Establish a program to protect Jordan's groundwater and surface water resources from pollution by establishing protection zones for groundwater and surface water	261 days													
266	Continuously monitor the status of the quality of the groundwater and surface water resources and the impact of potentially polluting activities on the water resources every yea	260 days													
267	Initiate corrective measures to reduce the risk of pollution to a minimum every year, to cover the period (2009-2022)	261 days													
<b>268</b>	<b>Protection of aquifers, ground and surface water</b>	<b>710 days</b>													
269	Investigate the natural protection (vulnerability to pollution) of aquifers, the existing hazards to groundwater and surface water and assess the resulting pollution risk for all	390 days													
270	implement Recommendations in coordination with other ministries	320 days													
271	Actively participate in the process of landuse licensing in coordination with other Ministries in order to minimize negative impact on the groundwater and surface water resource	260 days													
272	Provide guidelines for design and best management practice for potentially polluting activities, taking into consideration the need for water resources protection (16).	390 days													
<b>273</b>	<b>Rehabilitate springs and wells as well as the existing water supply infrastructure in order to better protect the water sc</b>	<b>259 days</b>													
274	Jerash source protection works	259 days													
275	Survey and monitor all water resources for water quality, and ensure that water quality standards are consistently being met on yearly basis to cover the period (2009-2022)	261 days													
276	Give particular attention needs to be focused on adopting and enforcing effluent and sludge standards for municipal and industrial wastewater treatment plants and for discharç	261 days													
277	Ensure that all our projects have Environmental Impact Assessments studies (during the planning and design stage) and Environmental Management Plan (during the construc	360 days													
<b>278</b>	<b>Health standards</b>	<b>1825 days</b>													
279	Enhance and sustain the setting of national health standards in regards of municipal water supply and wastewater	521 days													
280	Focus on public health and the health of workers (in the programs of reuse of treated wastewater).	781 days													
281	Maintain Laboratories for controls and properly equipped.	1825 days													
282	Focus on public health and the health of workers in the programs of reuse of treated wastewater	261 days													
283	Re-evaluate water quality standards or guideline values adopted from WHO and EPA to suite local conditions	261 days													
284	Commitment and coordination between many agencies and at many levels within the government to enforce standards.	261 days													
<b>285</b>	<b>Surface Water</b>	<b>3654 days</b>													
286	Develop and invest in facilities of the country's remaining limited surface water potential (Up to 475 MCM) to contribute to meeting rapidly increasing demands for all categories of water use in the country.	781 days													
287	Implement a comprehensive monitoring and assessment program for surface water quantity, quality, and uses,	306 days													
288	Establishing an integrated development and conservation program to increase the potential of surface water development in Jordan	390 days													
<b>289</b>	<b>MWI will optimize</b>	<b>3654 days</b>													
290	The development and use of surface water resource through supply-enhancing measures, including surface and subsurface storage.	3654 days													
291	Programs to minimizing losses by surface evaporation and seepage, soil and water .	3654 days													
292	Optimize protecting surface, water supplies from pollution	3654 days													

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
293	Protecting surface, water supplies from pollution	500 days													
294	Scheduling a plan to enhance the storage by removing sediments that accumulated over the years	260 days													
295	Scheduling a plan to enhance the storage by removing sediments that accumulated over the years on yearly basis, to cover the period (2009-2022)	260 days													
<b>296</b>	<b>Pursue the development of Sustainable Management Plans (SMP) by MWI</b>	<b>3654 days</b>													
297	SMP for surface water systems in the Jordan Valley	3654 days													
298	SMP for conversion of open canal systems to a pressurized pipe system	3654 days													
299	SMP for giving priority to modernizing and upgrading systems	3654 days													
300	SMP for precedence to water projects which make significant contributions to meeting rising municipal and industrial demands	3654 days													
<b>301</b>	<b>Groundwater</b>	<b>3654 days</b>													
302	Implement a program that sets out legal and financial measures aimed at controlling and gradually reducing groundwater withdrawals with the final objective of maintaining the safe yield of aquifers.	3654 days													
303	Continue to take measures to protect the groundwater resources from all sources of pollution	3654 days													
<b>304</b>	<b>Establish an integrated program to assess the availability and exploitability of all resources at rates that can be sustained</b>	<b>3654 days</b>													
305	Checked, controlled, and reduced the mining of renewable, groundwater aquifers to sustainable extraction rates	3654 days													
306	Continue to pursue planned and controlled groundwater mining from promising, extensive fossil aquifers as an option to secure incremental supplies for municipal and industrial use	3654 days													
307	The groundwater use will take place conjunctively with surface water in places where such joint use has the potential for increasing the available supply	3654 days													
308	Improvement and centralization of groundwater data collection, analysis and monitoring	3654 days													
309	Strengthening of the enforcement of groundwater legislation and regulations	3654 days													
<b>310</b>	<b>Further encourage the application of applied research activities</b>	<b>3654 days</b>													
311	Artificial recharge to increase groundwater supplies	3654 days													
312	Employment of new technologies that will optimize the operation	3654 days													
313	Development of groundwater systems and promote its more efficient and feasible uses	3654 days													
<b>314</b>	<b>Wastewater</b>	<b>3654 days</b>													
<b>315</b>	<b>Ensure that appropriate wastewater collecting systems and treatment facilities are provided for all sources of wastewater, wherever feasible</b>	<b>3654 days</b>													
316	The Ministry will set the plans to reduce the Non-Revenue water to 25% by 2022	1043 days													
317	Plan more wastewater projects	2086 days													
318	Ensure that wastewater is not managed as "waste" but is collected, treated, managed, and used in an efficient and optimized manner	1045 days													
319	Ensure that treated effluent complies with recently established national standards (JS893-1995) and that all treatment is to a quality appropriate for use in agricultural activities and other non-domestic purposes, including groundwater recharge	3654 days													
320	Adopt appropriate wastewater treatment technologies with due consideration to sustainability, economy in energy consumption, and quality assurance of the effluent	3654 days													
321	Blending of the treated effluent with fresher water for suitable reuse	3654 days													
322	Develop a wastewater master plan, which will establish targets for providing wastewater collection systems and treatment facilities to non served areas throughout the country	3654 days													
323	Move, through restructuring, towards establishing the institutional capability for monitoring, regulating and enforcing wastewater regulations	3654 days													
324	Oblige Industries to recycle part of their wastewater and to treat the rest to acceptable standards before it is discharged into the sewer systems or elsewhere	3654 days													
325	Give due consideration to environmental issues and contamination of groundwater aquifers in the development of wastewater reuse systems	3654 days													
326	Standards will be set for the construction and management of septic tanks where it is not feasible to have sewerage collection systems and treatment facilities	3654 days													
327	Develop and strengthen the reuse unit with well qualified staff to be responsible for the planning, design, construction and management of reuse of treated effluent	3654 days													
<b>328</b>	<b>Service Levels</b>	<b>3650 days</b>													
329	Monitor and rate performance efficiency of the water and wastewater systems and the management thereof	3650 days													
330	Introduce improvements on performance with due consideration to resource economics	770 days													
331	Maintaining water quality in the networks to be within the standards	3650 days													
332	Frequency of summer water supply	3650 days													
333	Frequency of winter water supply	3650 days													
334	Response time for repair of network leakages, pressure loss, and sewer blockage	3650 days													
335	Reduction in waiting times for water and wastewater connections	3650 days													
336	Reduction in waiting times for the resolution of customer complaints	3650 days													
337	Establish critical path for the allocation of each new source of water	261 days													
338	Give priority to the allocation of a modest share of 100 liters per capita per day to domestic water supplies (human needs)	260 days													
339	Water Monitoring Control Centre (Central Laboratories)	380 days													
<b>340</b>	<b>Resource Development and Management</b>	<b>3650 days</b>													
<b>341</b>	<b>Establish a national water data bank</b>	<b>770 days</b>													
342	Establish a comprehensive national water data bank supported by a decision support unit	520 days													
343	Develop a program of monitoring and a system of data collection, entry, updating processing and dissemination of information	520 days													
344	Develop the design of the data bank to become a terminal in a regional data bank setup	770 days													
<b>345</b>	<b>Tap the full potential of surface water and ground water to the extent permissible by economic feasibility, and by social and environmental considerations</b>	<b>3650 days</b>													
346	Conduct investigation of deep aquifers to support development planning	520 days													
347	Consider interactive use of ground and surface water, with different qualities	520 days													
348	Conduct a periodic assessment of the available and potential resources	3650 days													
<b>349</b>	<b>Enlist Marginal quality water and brackish water sources to support irrigated agriculture</b>	<b>3650 days</b>													

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
350	Desalination of marginal quality water, brackish water sources and sea water to produce additional water for municipal, industrial and commercial consumption	3650 days													
<b>351</b>	<b>Plan for the development of the resources</b>	<b>1040 days</b>													
352	Establish a water research unit within the Ministry to take on board the mandate of encourage and enhance indigenous water research	260 days													
353	Liaison with international institution to keep abreast with modern technological advances, and to facilitate technology transfer and adaptation	260 days													
354	Formulate a long-term plan for the development of the resources	520 days													
355	Extract a revolving five years platform the long term plan	520 days													
356	Develop a parallel investment plan to accompany the development plan.	520 days													
<b>357</b>	<b>Resource Management</b>	<b>3650 days</b>													
358	Revise the previously developed resources including resources mobilized for the irrigated agriculture in the Jordan Valley and other established uses for confirmation of water allocations	261 days													
359	Check, control and reduce to sustainable extraction rates	1000 days													
360	Adopt a dual approach of demand management and supply management	520 days													
361	Adopt Tools of advanced technology to enhance the resource management capabilities	3650 days													
362	Instate and update a dynamic regime of demand and supply	3650 days													
363	Start to measure the cost of production of future industrial, commercial, tourism and agricultural projects in terms of their requirements of units of water flow	3650 days													
364	Interactively use multiple resources targeting to maximize the usable flows, and maximize the net benefit from the use of unit flow of water	3650 days													
365	Give the human resources development an advanced rank in the priority scale	3650 days													
366	Give attention to the Management of wastewater to avoid degrading the quality of the effluent of wastewater treatment plants destined for reuse	3650 days													
<b>367</b>	<b>Private Sector Participation</b>	<b>3650 days</b>													
<b>368</b>	<b>Expand the The role of the private sector</b>	<b>3650 days</b>													
369	Consider and adopt Management Contracts, concessions and other forms of private sector participation in water utilities	3650 days													
370	Encourage and expand the private sector role in irrigated agriculture	3650 days													
371	Revise tariffs on the basis of recovery of the cost of utilities and the provision of services to attract PSP	3650 days													
372	Link cost recovery to the average per capita share of the GDP and its level in domestic water and to the cost of living and the family basket of consumption	3650 days													
373	Make profitable undertakings in industry, tourism, commerce and agriculture to pay the fair water cost	3650 days													
374	Depend on concessionary loans, private borrowing and BOT arrangements for project financing	3650 days													
<b>375</b>	<b>Institutional Reform</b>	<b>4440 days</b>													
<b>376</b>	<b>Legislation</b>	<b>3650 days</b>													
<b>377</b>	<b>Develop and enforce the Water Law</b>	<b>3650 days</b>													
<b>378</b>	<b>Undertake institutional changes within WAJ</b>	<b>2483 days</b>													
379	Separate Wholesale Operations (National Infrastructure) and Retail Operations (Service Delivery)	261 days													
380	Establish cost centers and business plans for the bulk and retail operations	261 days													
381	Establish management contracts with private sector utilities for the delivery of retail water	261 days													
382	Develop new bulk supply projects through private sector mechanisms	261 days													
383	Privatize or contracting out some existing functions	1830 days													
<b>384</b>	<b>Undertake institutional changes within JVA</b>	<b>522 days</b>													
385	Conducting a strategic planning program for JVA. This program includes editing a vision, mission, goals, objectives, strategy and action plans for the next 5 years	150 days													
386	Implementation of the Action plan resulting from the strategic planning program	150 days													
387	Separate the bulk and retail water management functions within the organization;	261 days													
388	Hand over all non Water functions to other related Ministries (Land, Housing and Tourism)	261 days													
389	Develop business plans for the bulk and retail operation in order to identify true costs and revenues for the functions and clearly identify the subsidy levels at each of these	261 days													
390	Develop water user groups at the stage level to take on the responsibility for the retail delivery of	261 days													
391	Implementation of the management contract for O&M	261 days													
392	Preparation of management contract document for O&M and supporting activities	261 days													
393	Farmers participation in retail water management	261 days													
<b>394</b>	<b>Groundwater By-law 85/2002 on</b>	<b>3650 days</b>													
395	Revise by-law 85/2002 on groundwater to conserve and protect groundwater from illegal use and over extraction	260 days													
<b>396</b>	<b>MWI act to stop unsustainable extraction of groundwater in order to prevent permanent economic and environmental harm</b>	<b>3650 days</b>													
397	Collect fees for legal wells	520 days													
398	Monitor and regulate illegal wells	520 days													
399	Establish and implement Groundwater Management Plans in order to begin to slow the dramatic decline in groundwater	3650 days													
<b>400</b>	<b>Legislative and regulatory Programme</b>	<b>783 days</b>													
401	Develop an efficient mechanism to supply the basic water quality and quantity requirements of low-income families (at the same time of tariff setting mechanism)	260 days													
402	Revise WAJ/JVA bulk tariff setting mechanism to reflect the real value of water, based on the high cost of developing and providing water from new sources.	260 days													
403	Establish water resources protection legislation to legally implement water resources protection zones for drinking water resources	261 days													
404	Study traditional water rights in Jordan in order to develop legislation that balances traditional rights with State rights	261 days													
405	Amendment of laws to enhance PSP/and allow for the establishment of public owned companies run on commercial basis	80 days													
406	A new by law for groundwater monitoring to reduce and control over drafting and illegal wells and provide for substantive penalties for illegal use	261 days													
407	Amendment to wastewater by-law. Wastewater connection fees are now to be determined and set by WAJ based upon criteria approved by the Council of Ministers in orc	261 days													
408	Establishment of a new tariff for groundwater abstraction for agricultural use	261 days													

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
409	Restructuring of the laws pertaining to the sale of land in the valley to allow for the sale of property in order to allow agriculture farm units to be consolidated up to 250 dun	261 days													
410	Adopt and enforce draft building and plumbing codes for buildings (including high rise – high density buildings) that set maximum water flow limits and minimum quality sta	520 days													
411	Modify policy and regulation to permit water allocation among users in Jordan by considering return per cubic meter used while ensuring satisfaction of basic domestic wat	520 days													
412	Develop a law to permit the formation of groundwater basin water users associations	520 days													
413	Modification of policy and implementing regulations (incentive structure) to encourage the use of innovative approaches to harvesting of water from rainfall	520 days													
414	Consolidation of regulatory functions scattered across several ministries and offices, and separation of regulation from operational functions	520 days													
415	Set a new policy and implementing regulation requiring certification of water and wastewater treatment plant operations and maintenance staff, to become trained technici	520 days													
<b>416</b>	<b>Commercial Practices</b>	<b>1050 days</b>													
417	Operate Organization producing distributing and treating water using best commercial practices within a regulated water market	1050 days													
418	Adjusting Water tariff to cover the O&M costs	260 days													
<b>419</b>	<b>Water demand for agriculture not to exceed that of municipal, tourism and industrial combined</b>	<b>1050 days</b>													
420	Reduction of Water Demand for Agriculture from 1093 MCM to 983 MCM (from 71% to 61%)	1050 days													
421	Increase Municipal Water Demand from 367 MCM to 493.4 MCM	1050 days													
422	Increase industrial Water Demand from 59.3 MCM to 120 MCM (from 4% to 7%)	1050 days													
423	Increase touristic water demand to 20 MCM (1%)	1050 days													
424	Increase water supply from 1029 MCM to 1296 MCM	1050 days													
<b>425</b>	<b>Establish a Water Regulatory Commission of Jordan</b>	<b>654 days</b>													
426	Establish Water Sector Audit Unit within the Ministry	130 days													
427	Develop the WSAU into a regulator for the Water and Waste water services	261 days													
428	Establish Project Development Unit within the Ministry	130 days													
429	Develop the Project Development unit to take the policy and strategic planning to feed the Water Council	160 days													
<b>430</b>	<b>Institutionalize National Water Master Plan</b>	<b>3722 days</b>													
431	Set the NWMP as a binding document in the new water law	3150 days													
432	Coordination between MWI and the different government bodies and authorities in planning for projects involving water (new projects must be coordinated with NWMP at all levels)	3307 days													
433	Streamlining of Investment planning with NWMP Allocation results	174 days													
434	Development of regular update protocols between the MWI and related Ministries (promotion of data sharing and exchange)	3522 days													
435	Survey and monitor all water resources for water quality, and ensure that water quality standards are consistently being met	261 days													
436	Update on local codes and standards for drinking water, treated wastewater and reuse of treated wastewater for agriculture	300 days													
437	Enforce standards for industrial wastewater discharges to sewers and treated wastewater reuse in agriculture	300 days													
438	Enhance and sustain the setting of national health standards in regards of municipal water supply and wastewater	260 days													
439	Ensure that the quality criteria are incorporated into enforced standards	261 days													
440	Enforcing standards for wastewater discharges to sewers, treated effluent and water for other uses	520 days													
441	Carefully examine water standards to assure that available resources are fully and efficiently utilized. it should consider national priorities, economics, and availability of water suppli	261 days													
442	Develop facilities and expertise to Implement and enforce of water standards	261 days													
443	Ensure safety of drinking water supplies while developing and implementing standards	261 days													
444	Adopt standards and guidelines for water used in irrigation, in cooperation with the Ministry of Agriculture, increases the availability of water that can be used in irrigation.	261 days													
445	Continuously evaluate and update standards and guidelines for drinking water quality,	261 days													
446	Focus on adopting and enforcing effluent and sludge standards for municipal and industrial wastewater treatment plants and for discharge from laboratories, hospitals, slaughterhou	261 days													
<b>447</b>	<b>Capacity Building</b>	<b>3912 days</b>													
448	Upgrading logistics program	780 days													
449	Upgrading existing facilities	780 days													
450	Upgrading field vehicles	780 days													
451	Improvement of safety in field	780 days													
<b>452</b>	<b>MWI - IT Master Plan</b>	<b>773 days</b>													
453	IT departments consolidation	131 days													
454	Executive Information System	512 days													
455	Asset Register System	512 days													
456	E-government Initiative & E-readiness	261 days													
457	MWI IT infrastructure improvement	261 days													
458	Collaboration and work flow and management system	261 days													
459	Renovation of the unified IT data center	261 days													
460	Training of the human resources including the hydrology and hydrogeology field ( observer and technicians) on yearly basis, to cover the period (2009-2022)	261 days													
<b>461</b>	<b>Human Resource Management</b>	<b>1568 days</b>													
462	Corporate training strategy	784 days													
463	Communication program/water conservation campaign	784 days													
464	Completion of SCADA system	784 days													
465	Completion of Scada System	784 days													
466	Develop and implement a corporate training strategy	1306 days													
467	Develop and implement and IT Master Plan	1306 days													

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
468	Develop meter management and meter testing program	1045 days				█	█	█							
469	Build a protected location for archives and digital archive	526 days				█	█								
470	Create internal audit and control function	1306 days				█	█	█	█						
471	Develop new finance & accounting system	1306 days				█	█	█	█						
472	Implement a human resources management system	526 days				█	█								
473	Introduce financial planning and company financial awareness	1306 days				█	█	█	█						
474	Upgrade GIS application system	784 days				█	█	█							
475	General improvements for building, furniture and branding	526 days				█	█								
476	Upgrade the capability of the Facilities Maintenance Unit	1306 days				█	█	█	█						
477	Develop human resource support systems	784 days				█	█	█							
478	Decentralization of CS and Operations	263 days				█	█								
479	Develop a contingencies and emergency plan	261 days				█	█								
480	Evaluate outsourcing options	261 days				█	█								
481	Analyze improvements to X7 billing system	261 days				█	█								
<b>482</b>	<b>INITIATIVE 4: BUILDING PLANNING AND TECHNICAL CAPABILITY</b>	<b>1568 days</b>				█	█	█	█						
483	Water and wastewater master plans and hydraulic model (USAID funded)	784 days				█	█								
484	Introduce preventive maintenance practices in sewer department	1306 days				█	█	█	█						
485	Obtain laboratory accreditation and analyze consolidation of labs	1306 days				█	█	█	█						
486	Create an industrial wastewater section	1306 days				█	█	█	█						
487	Improve the Customer Care Complaint Center (CCCC)	784 days				█	█	█							
488	Increase capabilities of Technical Services Directorate	1306 days				█	█	█	█						
489	Develop energy saving program	1306 days				█	█	█	█						
<b>490</b>	<b>INITIATIVE 5: IMPROVING WORKING RELATIONSHIP WITH GAM</b>	<b>1306 days</b>				█	█	█	█						
491	Reduce illegal storm water connections	1306 days				█	█	█	█						
492	Develop a memorandum of understanding with GAM	263 days				█	█								
<b>493</b>	<b>INITIATIVE 6:BP Projects ENHANCING MIYAHUNA'S CAPABILITIES</b>	<b>1306 days</b>				█	█	█	█						
494	Construct new headquarters	1045 days				█	█	█	█						
495	Improve office to field communications and GPS/GIS tracking	1306 days				█	█	█	█						
496	Update and expand GIS data system	1306 days				█	█	█	█						
497	Improve material specifications	263 days				█	█								
498	Improve corrective maintenance practices in sewer department	1306 days				█	█	█	█						
499	Train Staff , number of staff optimized and conflicts of interests eliminated.	380 days				█	█								
500	Set regulations requiring certification of water and wastewater treatment plant operations and maintenance staff, to become trained technicians	380 days				█	█								
501	Give the human resources development an advanced rank the priority scale	380 days				█	█								
502	Set up a National Water Training Center	380 days				█	█								
503	Continually appraise human resources performance to upgrade capabilities and sustain excellence	3650 days				█	█	█	█	█	█	█	█	█	█
504	Introduce incentives for excellence in compliance with the needs for dedication	3650 days				█	█	█	█	█	█	█	█	█	█
<b>505</b>	<b>Public Awareness</b>	<b>3650 days</b>				█	█	█	█	█	█	█	█	█	█
506	Educated the public through various means about the value of water for them and the well being of the country for the sustainability of life, and for the economic and social development. (progress should be within the initiatives of demand)	3650 days				█	█	█	█	█	█	█	█	█	█
507	Defined and assigned roles in water conservation to be played by the different sectors of society	3650 days				█	█	█	█	█	█	█	█	█	█
508	Disseminate facts about water in Jordan including cost incurred to provide the service, and the mounting pressure of population on the water resources	3650 days				█	█	█	█	█	█	█	█	█	█
509	Promote the Introduction, adoption and use of water saving and recycling systems and devices	3650 days				█	█	█	█	█	█	█	█	█	█
510	Adopt economic measures to reinforce public awareness	770 days				█	█								
511	Develop public awareness program to run in line with the program of Water Demand	770 days				█	█								
<b>512</b>	<b>Commercialization and Private Sector Participation</b>	<b>4439 days</b>				█	█	█	█	█	█	█	█	█	█
513	P.P.P. 25% of earnings have to be invested as capital investment within water system program under private companies	3655 days				█	█	█	█	█	█	█	█	█	█
<b>514</b>	<b>Commercialization Projects of Water Utilities (Private Sector Participation)</b>	<b>4439 days</b>				█	█	█	█	█	█	█	█	█	█
515	Find a strategic partner for Miyahuna company	3655 days				█	█	█	█	█	█	█	█	█	█
516	Find a strategic partner for AWC	3655 days				█	█	█	█	█	█	█	█	█	█
517	Management Contract in Northern Governorates	780 days				█	█								
518	Madaba PSP	1566 days				█	█	█	█						
519	Water Management Middle Governorates I	320 days				█	█								
520	Water Management Middle Governorates II	780 days				█	█	█							
521	Southern Governorates accompanying measure	780 days				█	█								
522	AlMeyyah Project	979 days				█	█	█							
523	Micro PSP (outsourcing of customer services and the GIS Information Technology Center for Maan and Tafilla)	261 days				█	█								
524	Involve Governorate Administration support program similar to Karak Accompanying Measures program or OMS for Tafilah & Ma'an Water Administrations	783 days				█	█	█							
<b>525</b>	<b>Commercial Practices (Operate organization producing distributing and treating water using best commercial practices w</b>	<b>3655 days</b>				█	█	█	█	█	█	█	█	█	█

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
526	Saving water from adopting more business-like approaches to water resources management	3655 days													
527	Reduce GOJ cost subsidies	3655 days													
528	Focus on customer service, providing a quality product that is properly valued and paid for by customers	3655 days													
529	Reduce losses within Jordan's water distribution systems drastically and quickly (up to 50% in some areas) ( in line with international best practices).	3655 days													
530	Reductions in man-power required per unit of water delivered to customers.	3655 days													
531	Increases in revenue from outsourcing billing, collection and customer service to private companies	3655 days													
532	Integration of technology into operations and management	3655 days													
533	Introduction of innovative approaches to reducing water demand, thereby increasing water supply	3655 days													
534	Encourage and expand the private sector role in the distribution of retail water, wastewater, treated effluent and irrigated water	3655 days													
<b>535</b>	<b>Water Pricing and Cost Recovery</b>	<b>3650 days</b>													
536	Adopt water tariffs mechanism to promote cost recovery of water projects	770 days													
537	Set municipal water and wastewater charges at a level which will cover at least the cost of operation and maintenance	770 days													
538	Depend on concessionary loans, private borrowing and BOT arrangements in project financing	3650 days													
539	Make profitable undertakings in industry, tourism, commerce and agriculture to pay the fair water cost.	770 days													
540	Set differential prices for water based on water quality, the end users, and the social and economic impact of prices on the various economic sectors and regions	770 days													
541	Regularly review and adjust water tariffs based on the costs of supply, operations, and the comprehensive analysis of economic data.	3650 days													
542	Move towards the recovery of all or part of the capital costs of water infrastructure	1035 days													
543	Use of water tariffs as a tool to drive water consumption behavior that should lead to better conservation of water	770 days													
544	Establish the real cost of Operation and Maintenance and charge for irrigation water accordingly	770 days													
545	Set municipal water and wastewater charges at a level which will cover at least the cost of operation and maintenance	770 days													
546	Set differential prices for water based on water quality, the end users, and the social and economic impact of prices on the various economic sectors and regions of the country. also attempt to regularly review and adjust water tariffs based on the cost	770 days													
<b>547</b>	<b>Research and Development (R&amp;D)</b>	<b>520 days</b>													
548	Establish a Water Research Unit within the Ministry	520 days													
549	Strong Policy Development and Water Resource Planning Capabilities	520 days													
<b>550</b>	<b>Irrigation Water</b>	<b>3743 days</b>													
<b>551</b>	<b>Projects</b>	<b>3636 days</b>													
552	Construction of Zarqa Irrigation Carrier III (ZCIII) Deir Alla to P.S. 28 / Balqa-Irbid	261 days													
553	Installation of Zarqa Basin Irrigation Networks	480 days													
554	Installation of Irrigation networks at Al Qarn/Slaikhat	521 days													
555	Pumping Mujib water to Hisban - Kafrein	262 days													
556	Wadi Mujib Protection Works	523 days													
557	Water resources management in irrigated agriculture	262 days													
558	Consolidation of operation, monitoring & control of JVA irrigation water systems (using SCADA)	785 days													
559	Extension of Irrigation Optimization in the Jordan Valley	784 days													
560	Rehabilitation of Fram Roads	3636 days													
561	Electrical Power Station at Dead Sea Shore	521 days													
562	Water Pipe for Hotels area at Dead Sea Shore	387 days													
563	Rehabilitation of the Damieh irrigation project	781 days													
564	Management and maintenance of of drip irrigation systems	500 days													
<b>565</b>	<b>Actions</b>	<b>3650 days</b>													
<b>566</b>	<b>Reduce the annual water for irrigation water (Demand and Supply)</b>	<b>3650 days</b>													
<b>567</b>	<b>Reduce Demand from 71% (2007) to 60% of the total water demand by 2022</b>	<b>3650 days</b>													
<b>568</b>	<b>Irrigated Areas</b>	<b>3650 days</b>													
569	No expansion of irrigated areas/ reduction of groundwater abstractions for irrigation purposes	3650 days													
570	Applying the Decision that is being taken to limit the irrigated area in the Jordan Valley by 427,000 Dunums which represent the current situation & immediate plans ir	770 days													
571	Ban Summer Crops in order to preserve scarce water resources (in drought years) (Amount of water saved 15MCM/yr)	3650 days													
572	A reduction of irrigation water for summer time through a water rationing program Amount of water saved 15 MCM/yr	3650 days													
573	Rent lands from farmers in order to prevent them from planting any crops (Amount of water saved 15 MCM/yr)	770 days													
574	Study the feasibility of irrigated agriculture under current and future conditions	260 days													
575	Establish in cooperation with the Ministry of Agriculture to reduce agriculture in the highland in the long-term in order to reduce water consumption for irrigation	770 days													
576	increase the tariff	770 days													
<b>577</b>	<b>Reduce Supply from 64% (2007) to 47% of the total water supply by 2022</b>	<b>3650 days</b>													
578	Groundwater allocations for all purposes in the uplands shall be based on groundwater sustainability principles	770 days													
579	Limit the use of brackish water in order to minimize soil salinity and conserve the brackish water for other uses	3650 days													
<b>580</b>	<b>Reduction of Groundwater Abstractions</b>	<b>3650 days</b>													
581	Strictly follow and implement Bylaw 85/2002 to close down any water well which extract water from a deteriorating and depleted aquifer. We shall implement the bylaw to close down all illegal water wells which are expected to be 40% of the water wells use	770 days													

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
582	Establish a strict monitoring and control system to prevent illegal or over-exploitation of water wells. rigorously enforce bylaw 85/2002 (16)	770 days													
583	Implementation of new ground water monitoring by-law	770 days													
584	Monitor abstraction from all groundwater wells periodically to assure conformity with the provisions of the abstraction permits.	3650 days													
585	Equipping private wells with water meters	770 days													
586	Extend testing services to farmers in cases where salinity and chemical contents reach detrimental levels	770 days													
<b>587</b>	<b>Investments in the Rehabilitation of the Irrigation Water Supply Systems</b>	<b>2873 days</b>													
588	Rehabilitation of Hisban/Kafrein Irrigation Project (1st Phase)	261 days													
589	Rehabilitation of Hisban/Kafrein Irrigation Project (2nd Phase)	261 days													
590	Rehabilitation of Hisban/Kafrein Irrigation Project (3rd Phase)	261 days													
591	Rehabilitation of Zarqa triangle Irrigation Project	305 days													
592	Rehabilitation of Southern Ghors-Stage I Irrigation Project (1st Phase)	261 days													
593	Rehabilitation of Southern Ghors-Stage I Irrigation Project (2nd Phase)	261 days													
594	Rehabilitation of the 18 km Extension Irrigation Project	522 days													
595	Rehabilitation of Middle Ghor Irrigation Project	262 days													
596	Rehabilitation of North Ghors Conversion Project (1st Phase)	260 days													
597	Rehabilitation of North Ghors Conversion Project (2nd Phase)	260 days													
598	Rehabilitation of Wadi Arab Irrigation Project	365 days													
599	Rehabilitation of North East Ghors Irrigation Project	365 days													
<b>600</b>	<b>Efficient on-farm distribution systems are in place</b>	<b>3650 days</b>													
601	Encourage the necessity to enhance the on-farm irrigation efficiency in order to maximize the agriculture output of a unit of land area per unit flow of irrigation water	3650 days													
602	Study for the use of Jordan River floods to be stored at Karama dam	365 days													
603	Recovery of Operation and Maintenance cost of irrigation water is achieved.	1050 days													
<b>604</b>	<b>All treated wastewater effluent is used for irrigation and other non-potable uses (Use of Marginal Water (brackish, treated</b>	<b>3650 days</b>													
605	Wadi Dharab dam and conveyance of Northern WWTPs to dam	1250 days													
606	Conveyor from King Talal Dam to Northern Ghore	1250 days													
607	Expand Irrigation system from Wadi Dharab and King Talal Dam to Northern Ghore	1250 days													
608	Preparation of guidelines to help farmers use brackish water for irrigation according to water salinity, soil salinity and crop type through the Brackish Water Project	365 days													
609	Use all wastewater effluent for irrigation ensuring that health standards for farm workers as well as consumers are reinforced	3650 days													
610	Use efficient rainfall harvesting methods for use in irrigation	3650 days													
611	Substitute fresh water with marginal water, wherever possible	365 days													
<b>612</b>	<b>Retail irrigation water is handled by the private sector and/or handled by empowered farmers' associations</b>	<b>3650 days</b>													
613	Introduce appropriate legislation to gradually phase-out of the business of irrigation water distribution, and transfer it to farmers and Farmers Associations	1250 days													
614	Establish a strict monitoring system and reinforce it rigorously in order to prevent illegal and/or over-exploitation of water wells	3650 days													
615	Improve the efficiency of bulk irrigation operations, forecasts and scheduling of irrigation services	3650 days													
616	JVA will provide bulk water at one point for a certain group of farmers on bulk delivery basis.	1250 days													
<b>617</b>	<b>Wastewater</b>	<b>4889 days</b>													
<b>618</b>	<b>Projects</b>	<b>4889 days</b>													
<b>619</b>	<b>Northern Governorates</b>	<b>2902 days</b>													
620	Greater Irbid sewer network ( Wadi Shalalh)	750 days													
621	Wadi Shallala TP/ IrbidII	750 days													
622	Design , construct and expand Mafraq treatment plant with WW networks project	1031 days													
623	Design , construct and expand Mafraq treatment plant with WW networks project and water reused	730 days													
624	Study, design and supervision for Jerash sewer network	730 days													
625	Expanding Jerash treatment plant project	969 days													
626	West Jerash sewer network and wastewater project	850 days													
627	Study, design and supervision for Jerash ( W. SHED) project	728 days													
628	Design, construct and expand, and rehabilitation of Kufranjeh treatment plant with WW networks project and water reused	1320 days													
629	Study, and design for Berqesh municipality (Jedeta, Kufer Rakeb, Kufer Abeel, Kufer Awan, and Beit Edis) sewer network project	1131 days													
630	Design WWTP North Shouna project	1095 days													
631	Wastewater reuse project at North Jordan Valley	1095 days													
632	Coverage of remaining areas	1095 days													
<b>633</b>	<b>Middle Governorates</b>	<b>2751 days</b>													
634	Rehabilitation, replacement, and upgrading the backfilled sewer lines under Wadis	784 days													
635	Optimization of the existing sewer system and activation of preventive maintenance	784 days													
636	Upsizing and upgrading of main existing sewer lines (collection system)	1307 days													
637	Expansion for existing wastewater treatment plants	784 days													
638	Implement program of sewer network recovery	1045 days													
639	Rehabilitation of main sewer pipeline in Amman area	1250 days													

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640	Transmission effluent from Abu Nuseir to Beerain area	770 days													
641	Study, design and supervision for Jiza sewer network	524 days													
642	Design Box Culvert construction project ( Egg Shape) from Ain Gazail to Wadi Zarqa Treatment Plant	1075 days													
643	South Amman WW Network project	1095 days													
644	South Amman WWTP II	1250 days													
645	Talbeya and Jeza camp wastewater project	1095 days													
646	Study, design and supervision for Naour Project, TP and sewer network	1095 days													
647	Rehabilitation of West Zarqa WWTP	1250 days													
648	Study, design and supervision for Wadi Zarqa TP and sewer network	1095 days													
649	Study, design to rehabilitate Zarqa wastewater networks projects ( Zarqa, Rusifa, and Yajouz )	1304 days													
650	Wastewater reuse project at Kerbit Assmara WWTP	365 days													
651	Executing conveying wastewater lines in Amman project	1306 days													
652	Study, and design for Ain Gazal WWTP received by tankers	1031 days													
653	Hydraulic study and design to rehabilitate Zarqa wastewater networks projects	1460 days													
654	Azraq sewer network project	1021 days													
655	Study, design and supervision for West Salt project, TP and sewer network	1095 days													
656	North west Balqa WWTP	1250 days													
657	South Shuna	1250 days													
658	Expansion of Zarqa governorate wastewater treatment capacity	1567 days													
659	Zarqa governorate WW system reinforcement and expansion	1567 days													
660	Construction of a conveyor pipeline for King Tala dam to irrigate Northern Jordan Valley	1567 days													
<b>661</b>	<b>Southern Governorates</b>	<b>2489 days</b>													
662	Operation of Wadi Musa and Petra WWTP	1825 days													
663	Design sewer network for Wadi Musa project	1044 days													
664	Design, construct and expand Karak TP with WW network project and water reused	1320 days													
665	Design sewer network for Maan project	784 days													
666	Study, design and supervision for Mansoura WWTP project	365 days													
667	New sewerage systems for various areas in Ma'an Governorate and Shobak	522 days													
668	Rehabilitation and extension of Ma'an TP	1250 days													
669	Study and design sewer network for Tafila Esse, Reem, and Perness WWTP	539 days													
670	Design, construct and supervision for Tafila WWTP expansion	720 days													
671	New sewerage systems for various areas in Tafila Governorate	522 days													
672	Tafilla WWT system	1250 days													
673	Rehabilitation and extension of Karak wastewater treatment plant including serve new six areas with sewerage network	523 days													
674	Study, design and supervision for Mzara, Muta, and Adnanieh TP project and sewer network	1095 days													
675	Study, design and expansion for Lajjoun WWTP	720 days													
676	Aqaba wastewater system	1250 days													
677	Aqaba South Coast	1250 days													
<b>678</b>	<b>All Governorates</b>	<b>4150 days</b>													
679	Coverage of the remaining areas	3650 days													
680	Remove polluted areas project	1403 days													
681	Extension and rehabilitation of main sewer pipeline throughout Jordan	2000 days													
682	Economic and Special Zones WWT systems	770 days													
<b>683</b>	<b>Actions</b>	<b>3650 days</b>													
<b>684</b>	<b>Resources Development and Management</b>	<b>3650 days</b>													
685	Manage treated wastewater as a perennial water source as an integral part of the national water budget	3650 days													
686	Ensure that the effluent of all wastewater from municipal or industrial treatment plants meets the relevant national standard and upgrade the noncompliance ones	3650 days													
687	Conduct regular monitoring of the quality of the effluent from every wastewater treatment plant in the country	3650 days													
688	Conduct an environmental impact assessment for every new wastewater project	3650 days													
689	Maintain and upgrade where necessary existing levels of wastewater services to enhance public health and the environment	3650 days													
690	Produce an effluent fit for reuse in irrigation in accordance with WHO and FAO guidelines and specifications as a minimum	3650 days													
691	Coordinate with official bodies in charge of urban development to account for the treatment and disposal of liquid wastes	3650 days													
692	Build decentralized treatment plants to serve semi-urban and rural communities	3650 days													
693	Issue specifications and minimum standards for the use of septic tanks in rural areas	3650 days													
694	Prioritize the use of treated wastewater for the activity that generates the highest social, environmental and economic return	3650 days													
695	Encourage industries through an appropriate incentive system to treat their wastewater and to meet standards set for ultimate wastewater reuse or to meet the regulations set for	3650 days													
696	Treat separately wastewater from industries with significant pollution to standards allowing its reuse	3650 days													
697	Expanding the use of treated wastewater e.g. selling WW to QIZ	3650 days													
<b>698</b>	<b>Provide adequate wastewater collection and treatment facilities for all the major cities and towns in Jordan</b>	<b>3650 days</b>													

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
699	Upgrade a wastewater master plan, which will establish targets for providing wastewater collection systems and treatment facilities to non served areas throughout the country	3650 days													
700	Maintain and upgrade where necessary existing levels of wastewater services to enhance public health and the environment	3650 days													
701	Adopt appropriate wastewater treatment technologies with due consideration to sustainability, economy in energy consumption, and quality assurance of the effluent. Consider	261 days													
<b>702</b>	<b>Establish innovative approaches to wastewater treatment for the small municipal systems</b>	<b>1250 days</b>													
703	Small communities Treatment Plants	1250 days													
704	Moutah and Adnaneyah WWTP	1250 days													
705	Ensure that appropriate wastewater collecting systems and treatment facilities are provided for all sources of wastewater, wherever feasible	1250 days													
706	Rehabilitate the sewerage pipes which are over 10 years old by methods, such as CCTV	1250 days													
<b>707</b>	<b>Protect the environment and public health in the areas affected by the proposed wastewater systems from contamination</b>	<b>3650 days</b>													
708	Study and standardize design and performance specifications of wastewater treatment plants	3650 days													
709	Construct wastewater collection and treatment systems taking into consideration the need to protect groundwater and surface water resources from pollution by wastewater.	770 days													
710	Move Septic tankers duping spot from Ain Ghazal and construction of the box culvert	770 days													
711	Watershed Management	3650 days													
712	Move Amman Salutory (Greater Amman Municipality Work)	770 days													
713	Move, through restructuring, towards establishing the institutional capability for monitoring, regulating and enforcing wastewater regulations	3650 days													
714	Ensure that new high-rise buildings use grey water for internal non drinking purposes	3650 days													
<b>715</b>	<b>Public Awareness</b>	<b>3650 days</b>													
716	Create awareness of the public through various means about the risks associated with the exposure to untreated wastewater and the value of treated effluents for the different	3650 days													
717	Design and conduct programs on public and farmer's awareness to promote the reuse of treated wastewater, methods of irrigation, and handling of produce	770 days													
718	Inform the public of the use of treated wastewater for aquifer recharge as is done in other countries	3650 days													
<b>719</b>	<b>Rationalize Tariffs for wastewater collection</b>	<b>261 days</b>													
<b>720</b>	<b>Alternative Water Resources</b>	<b>4433 days</b>													
<b>721</b>	<b>Projects</b>	<b>3652 days</b>													
722	Utilization of Husban brackish water to supply Amman	1826 days													
723	Desalination of sea water of the Gulf of Aqaba	1565 days													
724	Reuse project of Wadi Shalala (Northern Governorates, Central Irbid, Wadi Al-Arab)	1826 days													
725	Reuse of treated grey water	1305 days													
726	Apply rain water harvesting widely (House size)	785 days													
727	Desalination project in various areas in the Kingdom	780 days													
728	Construct small dams	3650 days													
729	Raising of Wala dam	784 days													
730	Water harvesting and desert dams	3652 days													
<b>731</b>	<b>Red Sea – Dead Sea Conveyance Project is Operational</b>	<b>2718 days</b>													
732	Installation of Conveyance pipeline (BOT)	1930 days													
733	Construction of desalination plant (BOT)	782 days													
734	Construction of distribution system (BOT)	1175 days													
735	Operating water desalination plant (upfront finance/pay for the operator 100 million JOD a year for 100 MCM)	1827 days													
<b>736</b>	<b>Actions</b>	<b>4433 days</b>													
<b>737</b>	<b>Desalination of sea and brackish water</b>	<b>4172 days</b>													
738	Establish an alternative energy source to keep the cost of desalination as low as possible (Work within the Government to find suitable sources of energy)	2086 days													
739	Establish other needed and sufficient infrastructure	2086 days													
740	Establish a program to desalinate brackish and sea waters on a short, medium, and long-term basis	2086 days													
<b>741</b>	<b>Reuse of treated wastewater whenever possible (Wastewater treated effluent a source of irrigation)</b>	<b>2347 days</b>													
742	Introduce a comprehensive risk management system to monitor the reuse of treated wastewater	261 days													
743	Introduce standards strictly controlled the reuse of WW in agriculture	261 days													
744	Fully use of the wastewater treated effluent for irrigation to replace fresh water	1565 days													
745	Conduct studies, design, and implement projects to store the excess treated wastewater in surface reservoirs or in underground reservoirs	770 days													
746	Develop and strengthen the reuse of effluent for irrigation unit at WAJ reuse of the effluent	1556 days													
747	Develop and strengthen the reuse unit with well qualified staff to be responsible for the planning, design, construction, and management of reuse of treated effluent	1565 days													
748	Construction of desalination plant at King Talal dam after the rehabilitation of As-Samra treatment plant in order to reduce water salinity	365 days													
<b>749</b>	<b>Encourage and promote rainwater harvesting</b>	<b>1565 days</b>													
750	Put necessary plans to enforce buildings codes to use grey water, storm water storage, and water saving fixtures in coordination with the Ministry of Municipalities	1565 days													
<b>751</b>	<b>Brackish water</b>	<b>784 days</b>													
752	Assess the potential of brackish water resources in terms of sound technical, economic, and environmental feasibility in all groundwater basins in the Kingdom	131 days													
753	Conduct research and studies on desalination and on optimization of brackish water use in agriculture and industry	261 days													
754	Carefully study the quality, quantity, and location of brackish water in order to assess its potential for utilization	261 days													
755	Allocation of brackish water, either desalinated or in its natural condition, to its best uses in order to provide additional water supply and to ensure water productivity and sustain	261 days													

ID	Task Name	Duration	'02	'04	'06	'08	'10	'12	'14	'16	'18	'20	'22	'24	'26
756	List brackish water, along with seawater, for desalination to produce additional water for municipal, industrial, and commercial consumption	131 days													
757	Encouraged international cooperation for the promotion of research, development, and exchange of information as well as training in the field of desalination and other non-con	131 days													
758	Introduce technology transfer and the findings of advanced research in genetic engineering to the extent possible	261 days													
<b>759</b>	<b>Import of water from other countries</b>	<b>3650 days</b>													

