

Table 1. Number of days required satisfying target water quantity and quality

Alternative	Quantity			Quality		
	P	A1B	A2	P	A1B	A2
No Alt	88.5	109.3	107.9	170.0	176.9	175.6
Alt 1	97.7	119.0	118.3	231.6	234.0	236.9
Rate	10.5%	8.8%	9.6%	36.2%	32.3%	34.9%
No Alt	109.0	132.6	130.6	32.3	25.4	28.3
Alt 2	218.8	244.4	241.6	259.1	261.6	261.9
Rate	100.7%	84.2%	85%	701.3%	931.1%	825.3%
No Alt	138.6	69.4	67.4	46.7	28.7	28.8
Alt 3	278.1	122.3	122.2	268.8	104.9	105.2
Rate	100.7%	76.3%	81.3%	475.5%	265.1%	264.9%
Alt 4	254.0	115.9	116.0	153.3	65.6	63.8
Rate	83.3%	67.1%	72.0%	228.2%	128.4%	121.3%
Alt 5	219.0	101.2	101.0	102.8	47.7	46.6
Rate	58.0%	45.9%	49.8%	120.1%	66.1%	61.7%

Table 2. Values of state, impact and response

Criteria	Present					A1B					A2				
	Alt1	Alt2	Alt3	Alt4	Alt5	Alt1	Alt2	Alt3	Alt4	Alt5	Alt1	Alt2	Alt3	Alt4	Alt5
S1	0.35	0.41	0.36	0.36	0.36	0.37	0.43	0.40	0.40	0.40	0.35	0.44	0.43	0.43	0.43
S2	8.52	10.75	23.17	23.17	23.17	8.90	10.58	22.62	22.62	22.62	8.87	10.34	21.08	21.08	21.08
I1	93.4	135.3	138.6	138.6	138.6	114.4	159.0	69.4	69.4	69.4	105.4	157.5	67.4	67.4	67.4
I2	189.7	160.2	46.7	46.7	46.7	196.3	147.3	28.7	28.7	28.7	195.5	146.2	28.8	28.8	28.8
R1	11.2	67.6	100.7	83.3	58.0	9.9	60.9	76.3	67.1	45.9	18.7	60.4	81.3	72.0	49.8
R2	36.4	265.8	339.9	198.3	139.7	35.2	253.7	303.2	177.1	125.1	44.2	245.1	293.6	171.4	120.4
R3	30.3	79.4	475.5	228.2	120.1	25.7	95.9	265.1	128.4	66.1	29.0	98.1	264.9	121.3	61.7
R4	7.7	26.3	45.6	40.0	36.6	5.8	24.1	39.3	34.2	31.1	4.1	23.2	34.1	29.0	25.7

Table 3. Prioritization of five alternatives

Scenario		Weights	Alt1	Alt2	Alt3	Alt4	Alt5
Without Cost	WSc1	Random number; AVF	5	4	1	2	3
	WSc2	R > I > S > P > D; AVF	5	4	1	2	3
	WSc3	D=P=0, S=0.1, I=0.3, R=0.6; AVF	5	4	1	2	3
With	WSc4	Random number; AVF	3	2	4	5	1
	WSc5	R > I > S > P > D; AVF	3	2	4	5	1
	WSc6	D:P:S:I:R:C = 0.05:0.05:0.1:0.15:0.25:0.4; AVF	4	2	3	5	1
	WSc6	D:P:S:I:R:C = 0.05:0.05:0.1:0.15:0.25:0.4 ELECTRE II	3	N/A	3	2	1

Table 4. All possible  $\delta_{k,j,j}$  values (absolute change in criteria weights)

Pair of Alternatives		Criterion					
		Driving force	Pressure	State	Impact	Response	Cost
A1	A2	N/F	-0.747	N/F	N/F	N/F	N/F
A1	A3	0.035	N/F	N/F	0.053	0.035	-0.034
A1	A4	-0.030	-0.104	-0.095	-0.045	-0.044	<b>0.030</b>
A1	A5	N/F	N/F	N/F	N/F	N/F	N/F
A2	A3	-0.135	-0.261	-0.380	-0.196	-0.331	0.120
A2	A4	-0.202	-0.388	-0.565	-0.291	N/F	0.187
A2	A5	N/F	N/F	N/F	N/F	N/F	N/F
A3	A4	N/F	N/F	N/F	N/F	0.189	N/F
A3	A5	N/F	N/F	N/F	N/F	-0.536	0.273
A4	A5	N/F	N/F	N/F	N/F	N/F	0.348
Number of feasible $\delta$ values		4	4	3	4	5	6

Note: N/F stands for Non-Feasible. That is, the corresponding value  $\delta_{k,j,j}$  does not satisfy condition Eq. 10.

Table 5. All possible weighting values  $w_k$  (absolute change in criteria weights)

Pair of Alternatives		Criterion					
		Driving force	Pressure	State	Impact	Response	Cost
A1	A2	N/F	0.797	N/F	N/F	N/F	N/F
A1	A3	0.015	N/F	N/F	0.097	0.215	0.434
A1	A4	0.080	0.154	0.195	0.195	0.294	0.370
A1	A5	N/F	N/F	N/F	N/F	N/F	N/F
A2	A3	0.185	0.311	0.480	0.346	0.581	0.280
A2	A4	0.252	0.438	0.665	0.441	N/F	0.213
A2	A5	N/F	N/F	N/F	N/F	N/F	N/F
A3	A4	N/F	N/F	N/F	N/F	0.061	N/F
A3	A5	N/F	N/F	N/F	N/F	0.786	0.127
A4	A5	N/F	N/F	N/F	N/F	N/F	0.052

Note: N/F stands for Non-Feasible. That is, the corresponding value  $\delta_{k,i,j}$  does not satisfy condition Eq. 10.

Table 6. All possible  $\delta'_{k,i,j}$  values (percent change in criteria weights)

Pair of Alternatives		Criterion					
		Driving force	Pressure	State	Impact	Response	Cost
A1	A2	N/F	-1493.3	N/F	N/F	N/F	N/F
A1	A3	71.0	248.3	113.1	53.4	13.8	108.5
A1	A4	-59.6	-208.7	-95.1	-44.9	-17.5	92.5
A1	A5	N/F	N/F	N/F	N/F	N/F	N/F
A2	A3	-271.0	-521.6	-379.6	-195.7	-132.3	70.1
A2	A4	-403.4	-776.6	-565.2	-291.4	N/F	53.3
A2	A5	N/F	N/F	N/F	N/F	N/F	N/F
A3	A4	N/F	N/F	N/F	N/F	75.6	N/F
A3	A5	N/F	N/F	N/F	N/F	-214.2	31.8
A4	A5	N/F	N/F	N/F	N/F	N/F	13.1

Note: N/F stands for Non-Feasible. That is, the corresponding value  $\delta_{k,i,j}$  does not satisfy condition Eq. 10.