Annex E.1

MIKE11 Water Quantity Model Setting

for

EABD & WABD Rivers

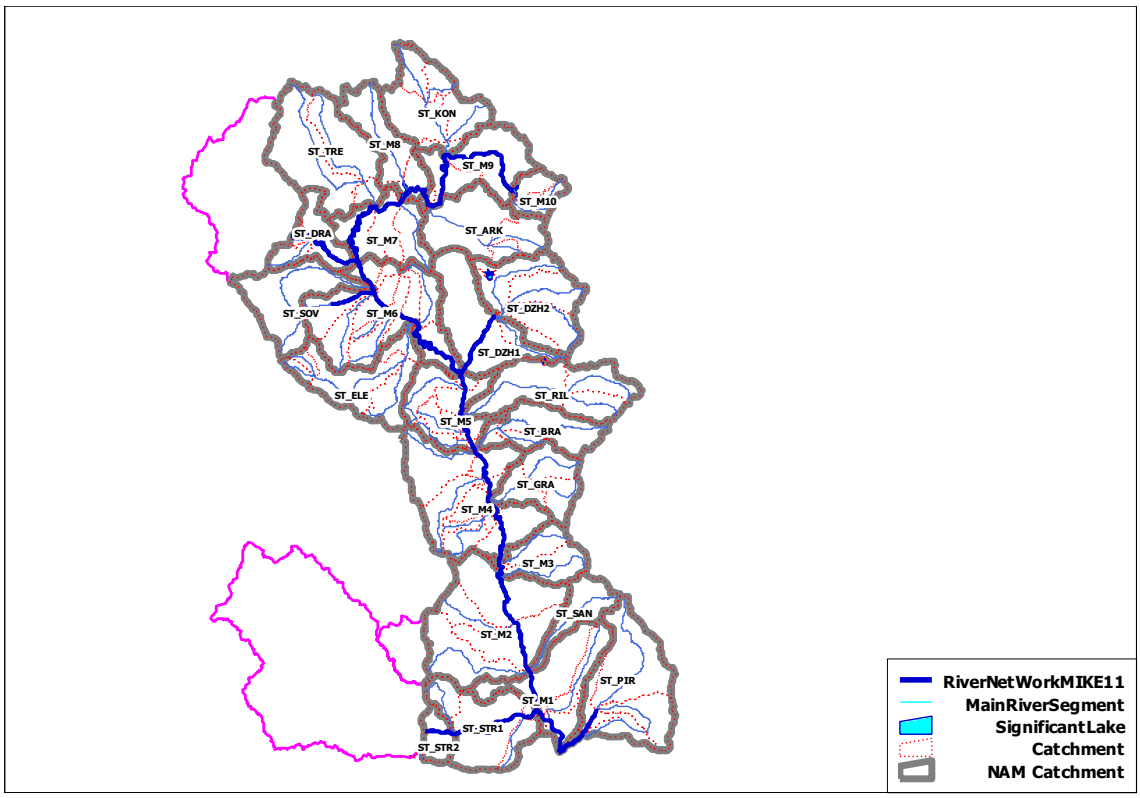
1. Struma River Basin

Outline of Model Setting

- Total Modeling Catchment Area = 8667.18km^2

  (Part of out of territory of Bulgaria is included.)

- Number of Rainfall-Runoff (NAM) Catchment = 25
- Total Length of Modeling River Network = 343.14 km
- Number of Branch = 6



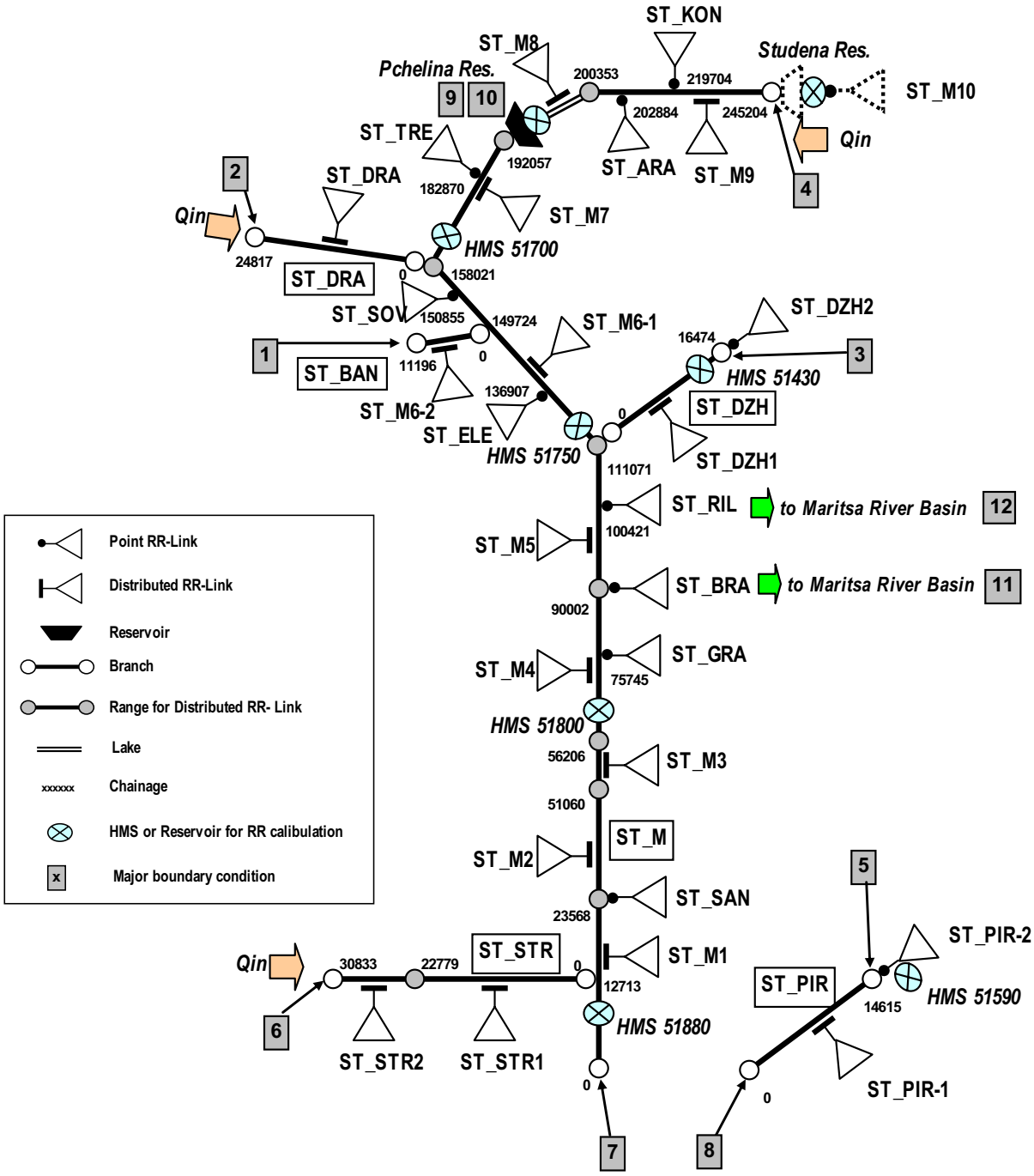
Summary Table of Branch

Branch Name	Length (m)	Main (M) or Tributary (T)	Connection	
			Branch	Chainage (m)
ST_DRA	24817.17	T	ST_M	158021
ST_DZH	16474.95	T	ST_M	111070.1
ST_PIR	14615.81	M		
ST_M	245204.4	M		
ST_STR	30833.9	T	ST_M	12713.45
ST_BAN	11196.4	T	ST_M	149723.6

Summary Table of NAM Catchment

NAM Catchment	Area (km^2)	Average Elevation (m)	Meteo St. for Temperature	Remarks
ST_ARK	360.10	285	15601	
ST_BRA	231.05	568	15601	
ST_DRA	177.00	754	15601	
ST_DZH1	371.51	656	15601	Calibrated result is disturbed condition.
ST_DZH2	398.74	168	15601	Calibrated result is disturbed condition.
ST_ELE	357.20	232	15601	
ST_GRA	235.66	170	15601	
ST_KON	371.84	262	15601	
ST_M1	364.66	277	15712	
ST_M10	102.12	577	15601	Calibrated result is disturbed condition.
ST_M2	826.78	595	15712	Out of territory ($126.28km^2$) is included.
ST_M3	194.47	666	15712	
ST_M4	622.12	728	15601	
ST_M5	302.07	833	15601	
ST_M6	611.02	222	15601	
ST_M7	279.32	273	15601	
ST_M8	242.38	224	15601	
ST_M9	317.54	353	15601	
ST_PIR	508.29	252	15712	
ST_RIL	384.90	285	15601	
ST_SAN	140.50	568	15712	
ST_SOV	302.12	754	15601	
ST_STR1	360.68	656	15712	
ST_STR2	76.60	168	15712	
ST_TRE	528.50	232	15601	

Note: 15601-Kustandiel, 15712 - Sandanski



Schematic Drawing for Model Setting

RR - Link

Link Name	NAM Catchment	Area (km^2)	Branch	US Chainage	DS Chainage
ST_M6-2	ST_M6	95.00	ST_BAN	0	11196
ST_DRA	ST_DRA	177.00	ST_DRA	0	24817
ST_DZH1	ST_DZH1	371.51	ST_DZH	0	16474
ST_DZH2	ST_DZH2	398.74	ST_DZH	16474	16474
ST_M1	ST_M1	364.66	ST_M	0	23568
ST_SAN	ST_SAN	140.50	ST_M	23568	23568
ST_M2	ST_M2	826.78	ST_M	23568	51060
ST_M3	ST_M3	194.47	ST_M	51060	56206
ST_M4	ST_M4	622.12	ST_M	56206	90002
ST_GRA	ST_GRA	235.66	ST_M	75745	75745
ST_BRA	ST_BRA	231.05	ST_M	90002	90002
ST_M5	ST_M5	302.07	ST_M	90002	111071
ST_RIL	ST_RIL	384.90	ST_M	100421	100421
ST_M6-1	ST_M6	516.02	ST_M	111071	158021
ST_ELE	ST_ELE	357.20	ST_M	136907	136907
ST_SOV	ST_SOV	302.12	ST_M	150855	150855
ST_M7	ST_M7	279.32	ST_M	158021	192057
ST_TRE	ST_TRE	528.50	ST_M	182870	182870
ST_M8	ST_M8	242.38	ST_M	192057	200353
ST_M9	ST_M9	317.54	ST_M	200353	245204
ST_ARK	ST_ARK	360.10	ST_M	202884	202884
ST_KON	ST_KON	371.84	ST_M	219704	219704
ST_M10	ST_M10	102.12	ST_M	245204	245204
ST_PIR-1	ST_PIR	119.76	ST_PIR	0	14615
ST_PIR-2	ST_PIR	388.53	ST_PIR	14615	14615
ST_STR1	ST_STR1	360.68	ST_STR	0	22779
ST_STR2	ST_STR2	76.60	ST_STR	22779	30833

Note: ST-M10 is not linked.

Major Boundary Conditions

No	Type	Branch	Chainage		Description	Constant value (m3/s) /File Name
1	Inflow	ST_BAN	11196.4		US End of ST_BAN	0.001
2	Inflow	ST_DRA	24817.17		Inflow from Serbia through ST_DRA	Qin_ST_DRA.dfs0
3	Inflow	ST_DZH	16474.95		US End of ST_DZH	0.001
4	Inflow	ST_M	245204.4		US End of ST_M	StudenaRes_Out_Instream.dfs0
5	Inflow	ST_PIR	14615.81		US End of ST_PIR	0.001
6	Inflow	ST_STR	30833.9		Inflow from Macedonia through ST_STR	Qin_ST_STR.dfs0
7	Q-H	ST_M	0		DS End of ST_M	N/A
8	Q-H	ST_PIR	0		DS End of ST_PIR	N/A
9	Regulating Structure	ST_M	192057.1		Instream flow to DS river from Pchelina Res.	PchelinaRes_Out_Instream.dfs0
10	Inflow	ST_M	192057		Off stream flow from Pchelina Res..	PchelinaRes_Out_Offstream.dfs0
11	Inflow	ST_M	90002		Abstracted Water by feeder channel in ST_BRA	Struma_Trans_ST_BRA.dfs0
12	Inflow	ST_M	100421		Abstracted Water by feeder channel in ST_RIL	Struma_Trans_ST_RIL.dfs0

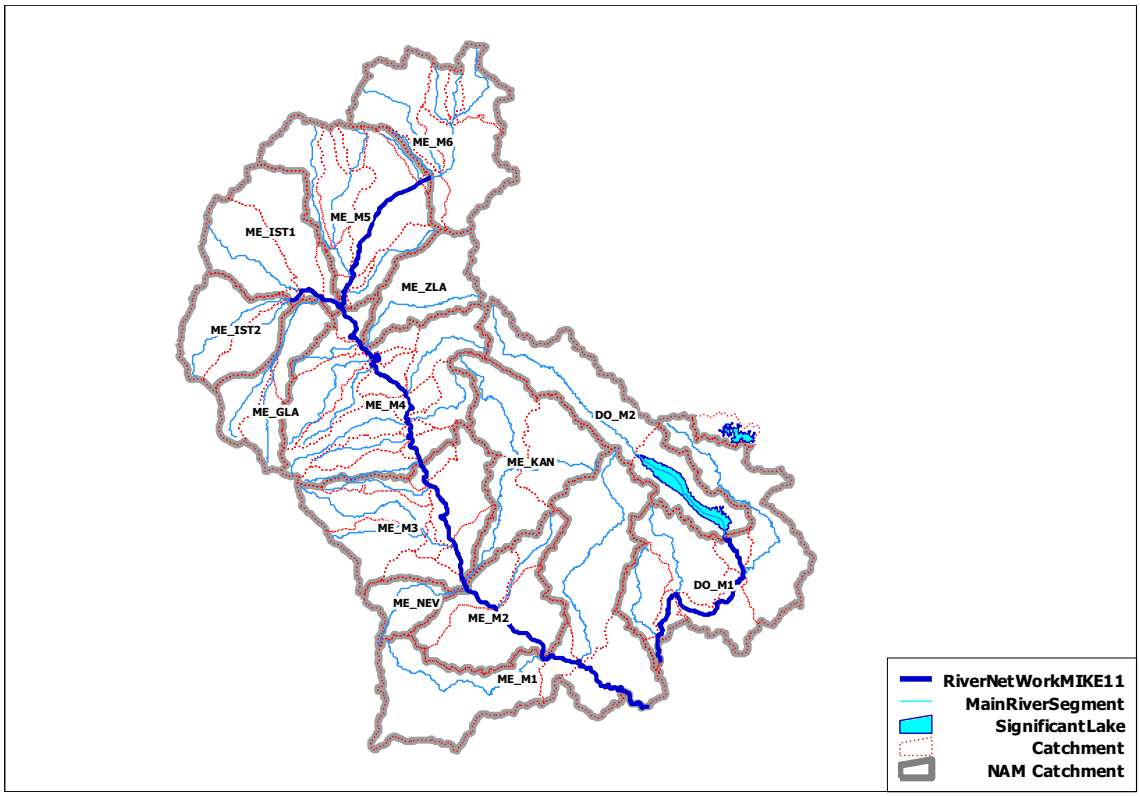
Other Boundary Conditions

Item	Description	Constant Value / File Name
Total Abstracted Water Amount in NAM catchment	For each NAM catchment	Struma_AbstW.dfs0
Distributed Domestic Discharge in NAM catchment	For each NAM catchment	Struma_DisW.dfs0
Domestic Discharge from towns whose PE is more than 2000	For each point	Constant
Industrial Discharge	For each point	Constant

2. Mesta & Dospat River Basin

Outline of Model Setting

- Total Modeling Catchment Area = 3397.71km^2
- Number of Rainfall-Runoff (NAM) Catchment = 14
- Total Length of Modeling River Network = 141.80 km
- Number of Branch = 3



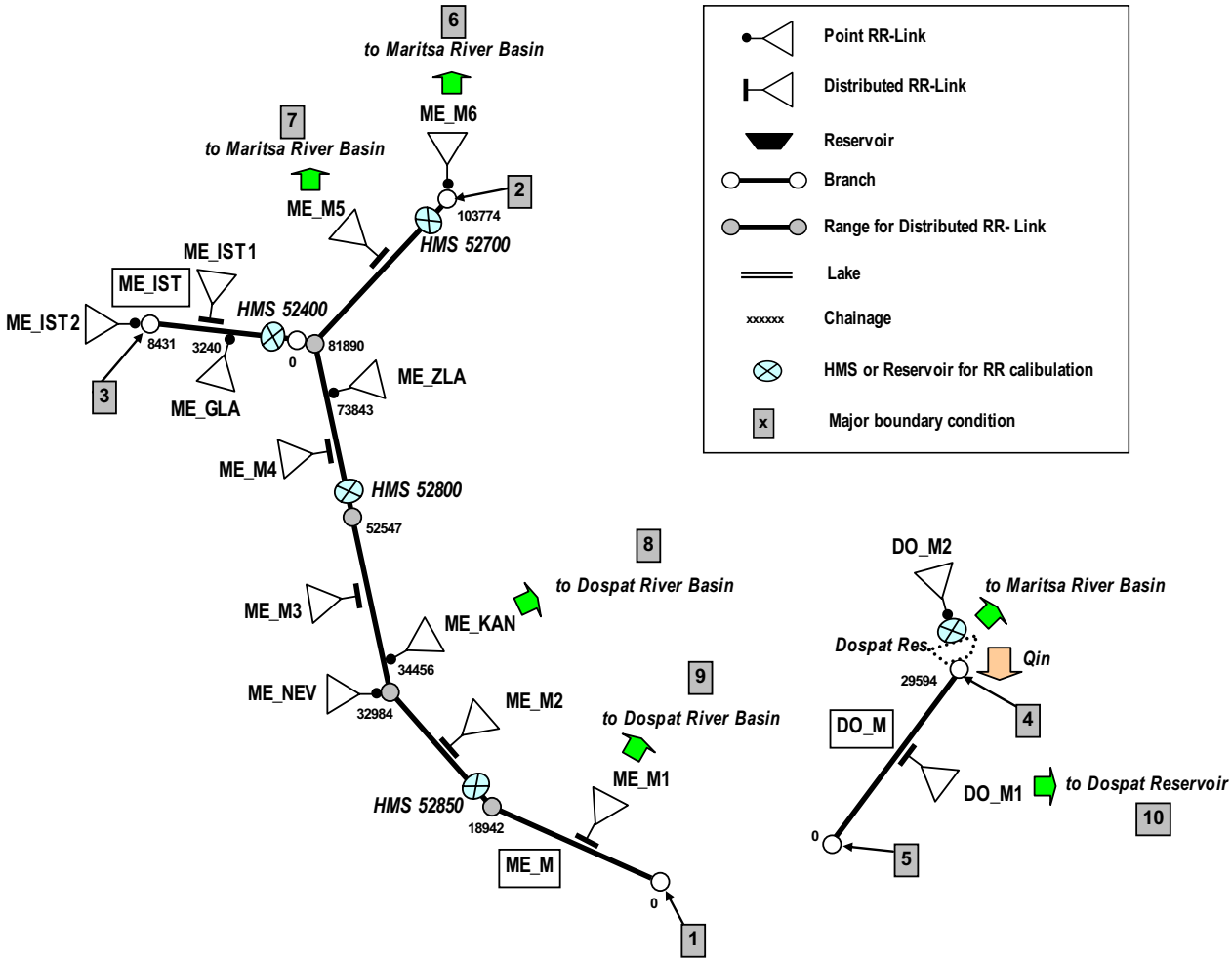
Summary Table of Branch

Branch Name	Length (m)	Main (M) or Tributary (T)	Connection	
			Branch	Chainage (m)
ME_IST	8431.5325	T	ME_M	81889.9
ME_M	103774.99	M		
DO_M	29594.073	M		

Summary Table of NAM Catchment

NAM Catchment	Area (km^2)	Average Elevation (m)	Meteo St. for Temperature	Remarks
ME_GLA	119.64	1687	15601	
ME_IST1	199.47	1309	15601	
ME_IST2	129.59	1309	15601	
ME_KAN	236.40	1395	15712	
ME_M1	485.47	949	15712	
ME_M2	200.58	724	15712	
ME_M3	287.62	1031	15712	
ME_M4	411.39	1252	15601	
ME_M5	288.73	1360	15601	
ME_M6	261.53	1676	15601	
ME_NEV	52.12	1122	15712	
ME_ZLA	112.48	1265	15601	
DO_M1	375.63	1273	15712	
DO_M2	237.06	1420	15712	

Note: 15601-Kustandiel, 15712 - Sandanski



Schematic Drawing for Model etting

RR - Link

Link Name	NAM Catchment	Area (km^2)	Branch	US Chainage	DS Chainage
ME_IST1	ME_IST1	199.47	ME_IST	0	8431
ME_GLA	ME_GLA	119.64	ME_IST	3240	3240
ME_IST2	ME_IST2	129.59	ME_IST	8431	8431
ME_M1	ME_M1	485.47	ME_M	0	18942
ME_M2	ME_M2	200.58	ME_M	18942	32984
ME_NEV	ME_NEV	52.12	ME_M	32984	32984
ME_M3	ME_M3	287.62	ME_M	32984	52547
ME_KAN	ME_KAN	236.40	ME_M	34456	34456
ME_M4	ME_M4	411.39	ME_M	52547	81890
ME_ZLA	ME_ZLA	112.48	ME_M	73843	73843
ME_M5	ME_M5	288.73	ME_M	81890	102314
ME_M6	ME_M6	261.53	ME_M	103774	103774
DO_M1	DO_M1	199.47	DO_M	0	29594

Note: DO-M2 is not linked.

Major Boundary Conditions

No	Type	Branch	Chainage		Description	Constant value (m3/s) / File Name
1	Q-H	ME_M	0		DS End of ME_M	N/A
2	Inflow	ME_M	103774		US End of ME_M	0.001
3	Inflow	ME_IST	8431.532		US End of ME_IST	0.001
4	Inflow	DO_M	29594.07		US End of DO_M	0.001
5	Q-H	DO_M	0		DS End of DO_M	N/A
6	Inflow	ME_M	103774		Abstracted Water by feeder channel in ME_M6	Mesta_Trans_ME_M6.dfs0
7	Inflow	ME_M	86098		Abstracted Water by feeder channel in ME_M5	Mesta_Trans_ME_M5.dfs0
8	Inflow	ME_M	34456		Abstracted Water by feeder channel in ME_KAN	Mesta_Trans_ME_KAN.dfs0
9	Inflow	ME_M	13620		Abstracted Water by feeder channel in ME_M1	Mesta_Trans_ME_M1.dfs0
10	Inflow	DO_M	2000	29594	Abstracted Water by feeder channel in DO_M1	Dospat_Trans_DO_M1.dfs0

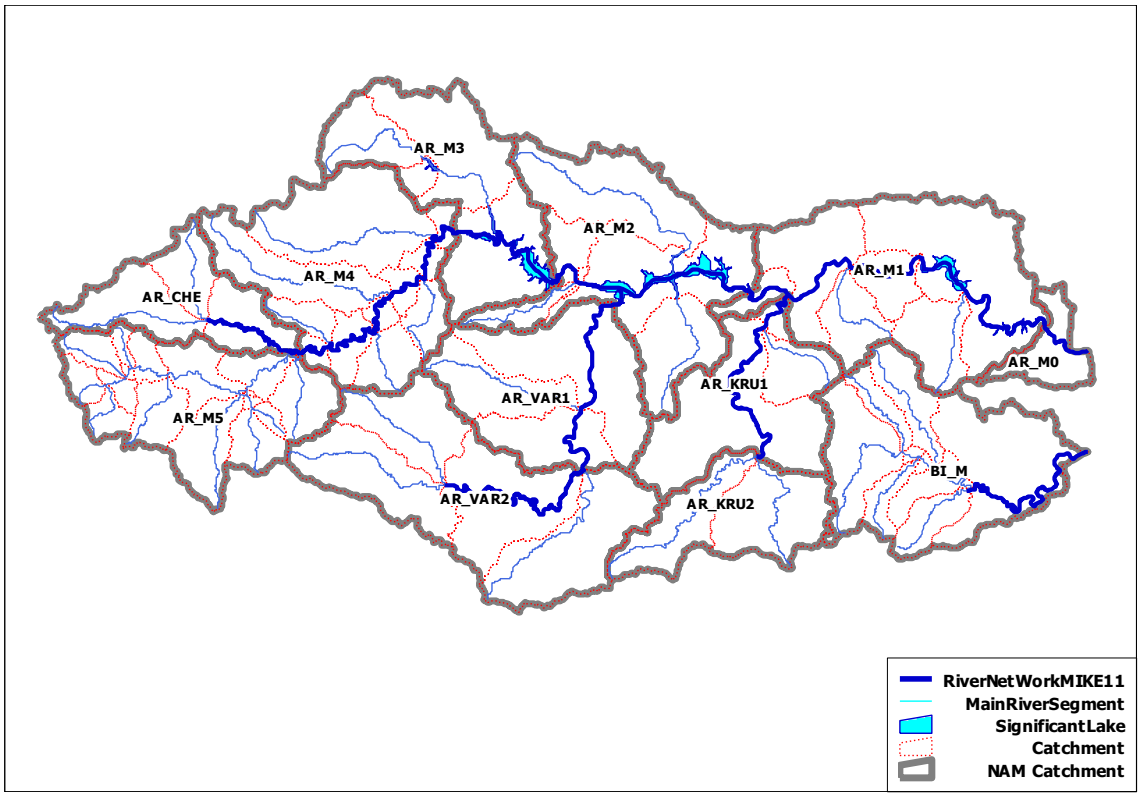
Other Boundary Conditions

Item	Description	Constant Value / File Name
Total Abstracted Water Amount in NAM catchment	For each NAM catchment	Mesta_AbstW.dfs0
Distributed Domestic Discharge in NAM catchment	For each NAM catchment	Mesta_DisW.dfs0
Domestic Discharge from towns whose PE is more than 2000	For each point	Constant
Industrial Discharge	For each point	Constant

3. Arda & Biala River Basin

Outline of Model Setting

- Total Modeling Catchment Area = 5811.84km^2
- Number of Rainfall-Runoff (NAM) Catchment = 12
- Total Length of Modeling River Network = 332.10 km
- Number of Branch = 5



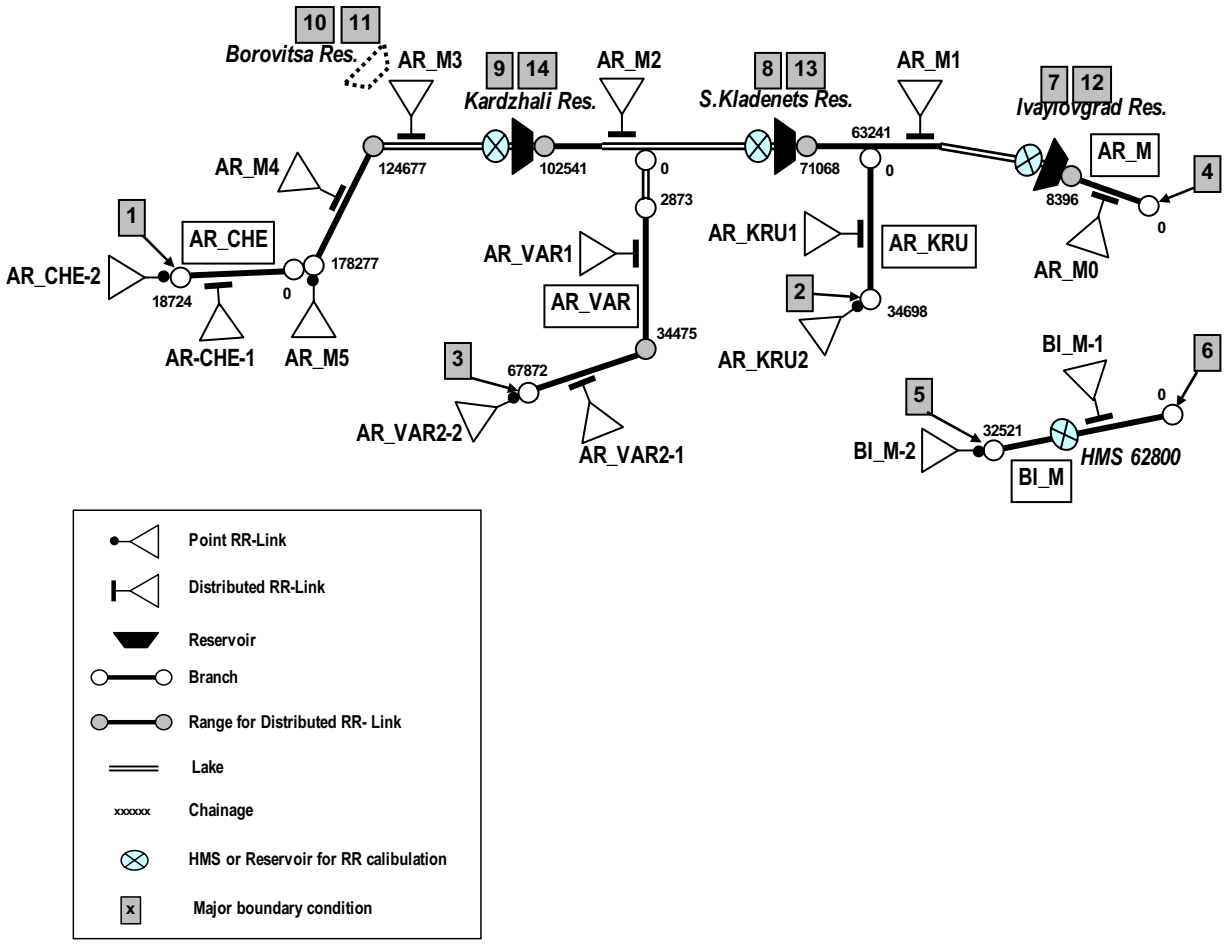
Summary Table of Branch

Branch Name	Length (m)	Main (M) or Tributary (T)	Connection	
			Branch	Chainage (m)
AR_KRU	34698.91	T	AR_M	63241.82
AR_CHE	18724.8	T	AR_M	178278.2
AR_VAR	67872.77	T	AR_M	96187.76
AR_M	178278.2	M		
BI_M	32521.42	M		

Summary Table of NAM Catchment

NAM Catchment	Area (km^2)	Average Elevation (m)	Meteo St. for Temperature	Remarks
AR_CHE	269.72	1231	43010	
AR_KRU1	390.51	397	43010	
AR_KRU2	282.85	510	43010	
AR_M0	83.18	257	43010	
AR_M1	715.55	333	43010	
AR_M2	643.64	423	43010	
AR_M3	475.06	719	43010	
AR_M4	646.09	962	43010	
AR_M5	516.52	1076	43010	
AR_VAR1	467.44	478	43010	
AR_VAR2	722.50	588	43010	
BI_M	598.77	418	43010	

Note: 43010 - Haskovo



Schematic Drawing for Model Setting

RR - Link

Link Name	NAM Catchment	Area (km^2)	Branch	US Chainage	DS Chainage
AR_CHE-1	AR_CHE	84.80	AR_CHE	0	18724
AR_CHE-2	AR_CHE	184.92	AR_CHE	18724	18724
AR_KRU1	AR_KRU1	390.51	AR_KRU	0	34698
AR_KRU2	AR_KRU2	282.85	AR_KRU	34698	34698
AR_M0	AR_M0	83.18	AR_M	0	8396
AR_M1	AR_M1	715.55	AR_M	8396	71068
AR_M2	AR_M2	643.64	AR_M	71068	102541
AR_M3	AR_M3	475.06	AR_M	102541	124677
AR_M4	AR_M4	646.09	AR_M	124677	178277
AR_M5	AR_M5	516.52	AR_M	178277	178277
AR_VAR1	AR_VAR1	467.44	AR_VAR	2873	34475
AR_VAR2-1	AR_VAR2	418.83	AR_VAR	34475	67872
AR_VAR2-2	AR_VAR2	303.67	AR_VAR	67872	67872
BI_M-1	BI_M	225.40	BI_M	0	32521
BI_M-2	BI_M	373.37	BI_M	32521	32521

Major Boundary Conditions

No	Type	Branch	Chainage		Description	Constant value (m3/s) / File Name
1	Inflow	AR_CHE	18724		US End of AR_CHE	0.001
2	Inflow	AR_KRU	34698		US End of AR_KRU	0.001
3	Inflow	AR_VAR	67872		US End of AR_VAR	0.001
4	Q-H	AR_M	0		DS End of AR_M	N/A
5	Inflow	BI_M	32521.42		US End of AR_BI	0.001
6	Q-H	BI_M	0		DS End of AR_M	N/A
7	Inflow	AR_M	8396	37312	Offstream flow from Ivaylovgrad Res..	Ivaylovgrad_Out_Offstream.dfs0
8	Inflow	AR_M	71067	96882	Offstream flow from S.Kladenets Res..	SKladenets_Out_Offstream.dfs0
9	Inflow	AR_M	102540	124676	Offstream flow from Kardzhali Res..	Kardzhali_Out_Offstream.dfs0
10	Inflow	AR_M	102540	124676	Inflow to Borovitsa Res.	Borovitsa_In.dfs0
11	Inflow	AR_M	102540	124676	Instream flow to DS river from Borovitsa Res.	Borovitsa_Out_Instream.dfs0
12	Regulating Structure	AR_M	8396.391		Instream flow to DS river from Ivaylovgrad Res.	Ivaylovgrad_Out_Instream.dfs0
13	Regulating Structure	AR_M	71068.05		Instream flow to DS river from SKladenets Res.	SKladenets_Out_Instream.dfs0
14	Regulating Structure	AR_M	102541.1		Instream flow to DS river from Kardzhali Res.	Kardzhali_Out_instream.dfs0

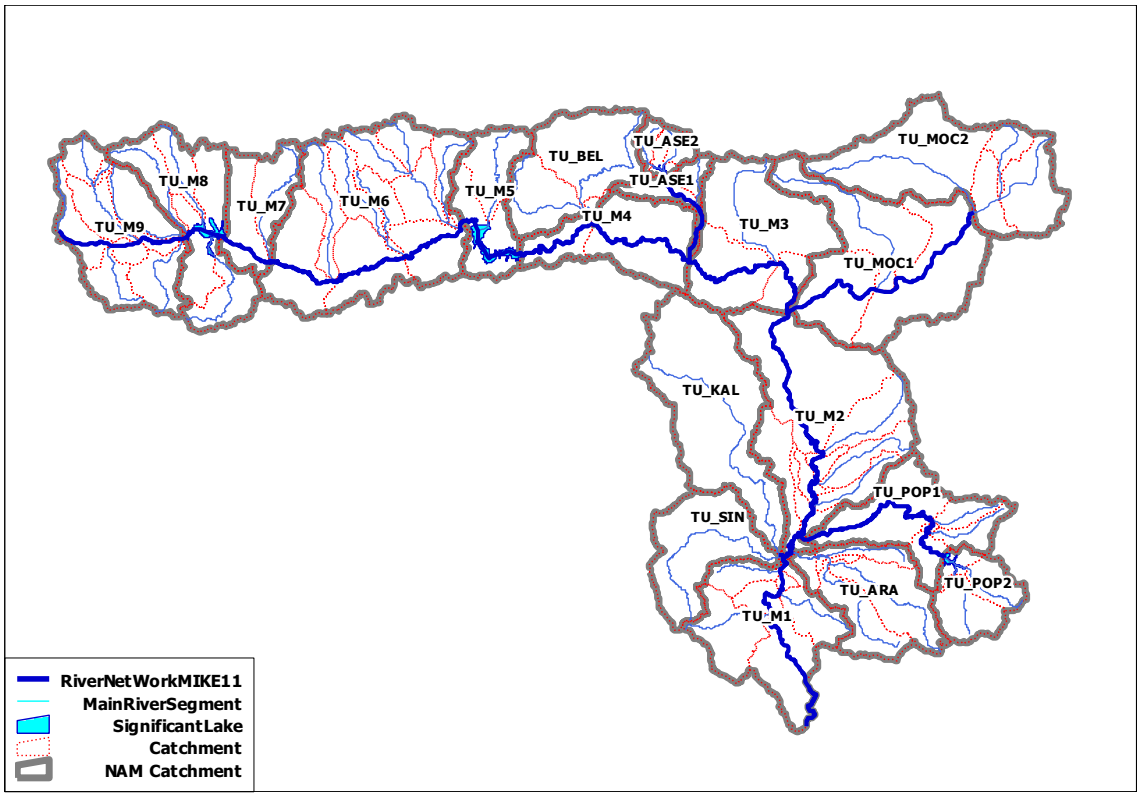
Other Boundary Conditions

Item	Description	Constant Value / File Name
Total Abstracted Water Amount in NAM catchment	For each NAM catchment	Arda_AbstW.dfs0
Distributed Domestic Discharge in NAM catchment	For each NAM catchment	Arda_DisW.dfs0
Domestic Discharge from towns whose PE is more than 2000	For each point	Constant
Industrial Discharge	For each point	Constant

4. Tundzha River Basin

Outline of Model Setting

- Total Modeling Catchment Area = 7890.93km^2
- Number of Rainfall-Runoff (NAM) Catchment = 20
- Total Length of Modeling River Network = 409.46 km
- Number of Branch = 5



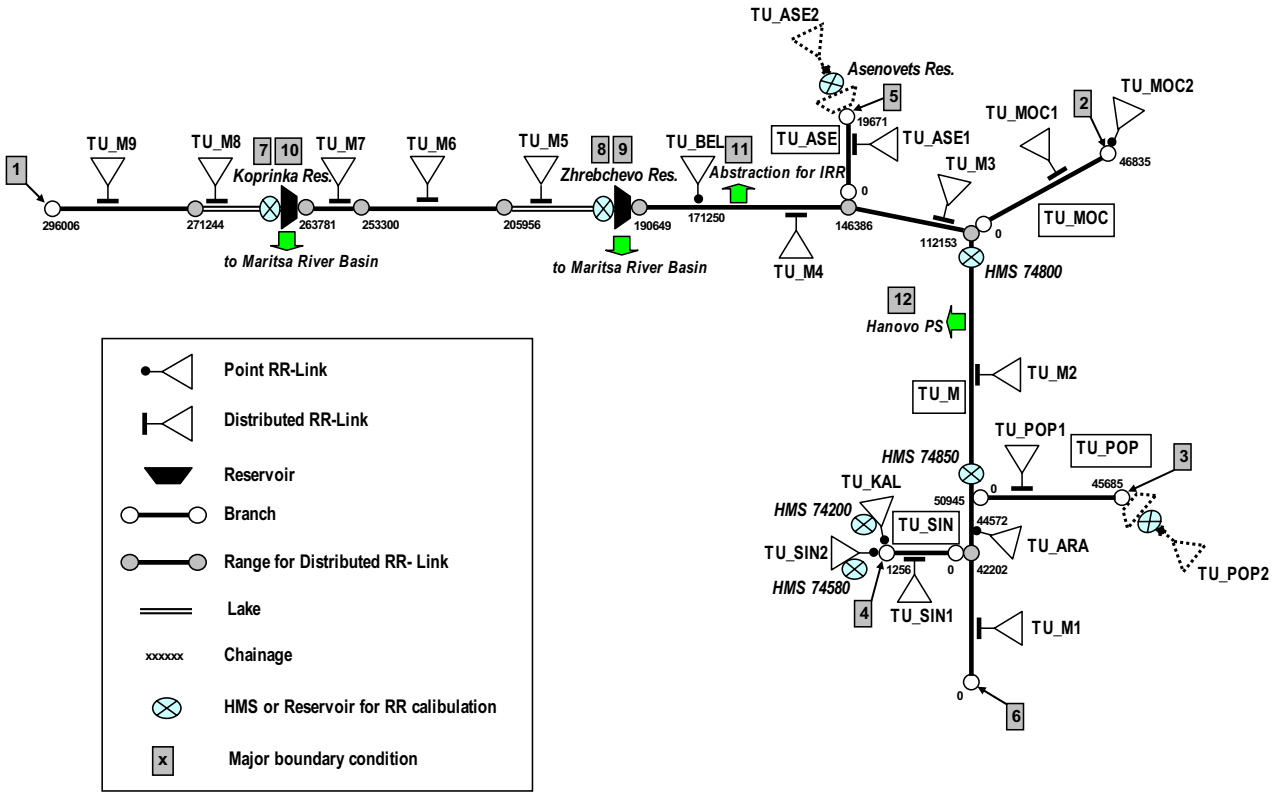
Summary Table of Branch

Branch Name	Length (m)	Main (M) or Tributary (T)	Connection	
			Branch	Chainage (m)
TU_SIN	1256.52	T	TU_M	42201.74
TU_ASE	19671.63	T	TU_M	146386
TU_POP	45685.94	T	TU_M	50945.28
TU_MOC	46835.17	T	TU_M	112152.7
TU_M	296006.3	M		

Summary Table of NAM Catchment

NAM Catchment	Area (km^2)	Average Elevation (m)	Meteo St. for Temperature	Remarks
TU_ARA	350.15	285	43010	
TU_ASE1	87.88	568	15637	
TU_ASE2	75.19	754	15637	
TU_BEL	371.23	656	15637	
TU_KAL	575.86	168	43010	
TU_M1	469.49	232	43010	
TU_M2	799.70	170	43010	
TU_M3	507.26	262	15637	
TU_M4	302.91	277	15637	
TU_M5	245.63	577	15637	
TU_M6	892.56	595	15637	
TU_M7	215.44	666	15637	
TU_M8	407.61	728	15637	
TU_M9	468.85	833	15637	
TU_MOC1	703.38	222	15637	
TU_MOC2	590.88	273	15637	
TU_POP1	346.10	224	43010	
TU_POP2	187.52	353	43010	
TU_SIN	293.29	252	43010	
TU_ARA	350.15	285	43010	

Note: 43010 - Haskovo, 15637 - Kazanlak



Schematic Drawing for Model Setting

RR - Link

Link Name	NAM Catchment	Area (km^2)	Branch	US Chainage	DS Chainage
TU_ASE1	TU_ASE1	87.88	TU_ASE	0	19671
TU_M1	TU_M1	469.49	TU_M	0	42202
TU_M2	TU_M2	799.70	TU_M	42202	112153
TU_ARA	TU_ARA	350.15	TU_M	44572	44572
TU_M3	TU_M3	507.26	TU_M	112153	146386
TU_M4	TU_M4	302.91	TU_M	146386	190649
TU_BEL	TU_BEL	371.23	TU_M	171250	171250
TU_M5	TU_M5	245.63	TU_M	190649	205956
TU_M6	TU_M6	892.55	TU_M	205956	253300
TU_M7	TU_M7	215.44	TU_M	253300	263781
TU_M8	TU_M8	407.61	TU_M	263781	271244
TU_M9	TU_M9	468.85	TU_M	271244	296006
TU_MOC1	TU_MOC1	703.38	TU_MOC	0	46835
TU_MOC2	TU_MOC2	590.88	TU_MOC	46835	46835
TU_POP1	TU_POP1	346.10	TU_POP	0	45685
TU_SIN-1	TU_SIN	0.71	TU_SIN	0	1256
TU_KAL	TU_KAL	575.86	TU_SIN	1256	1256
TU_SIN-2	TU_SIN	292.58	TU_SIN	1256	1256

Note: TU_ASE2, TU_POP2 is not linked.

Major Boundary Conditions

No	Type	Branch	Chainage		Description	Constant value (m3/s) / File Name
1	Inflow	TU_M	296006.3		US End of TU_M	0.001
2	Inflow	TU_MOC	46835.17		US End of TU_MOC	0.001
3	Inflow	TU_POP	45685.94		US End of TU_POP	MSherkovo_Out_Instream.dfs0
4	Inflow	TU_SIN	1256.52		US End of TU_SIN	0.001
5	Inflow	TU_ASE	19671.63		US End of TU_ASE	Asenovets_Out_Instream.dfs0
6	Q-H	TU_M	0		DS End of TU_M	N/A
7	Regulating Structure	TU_M	263780.6		Instream flow to DS River from Koprinka Res.	Koprinka_Out_Instream.dfs0
8	Regulating Structure	TU_M	190649		Instream flow to DS River from Zhrebchevo Res.	Zhrebchevo_Out_Instream.dfs0
9	Inflow	TU_M	190649	205955	Off stream flow from Zhrebchevo Res.	Zhrebchevo_Out_Offstream.dfs0
10	Inflow	TU_M	263780	271243	Off stream flow from Koprinka Res.	Koprinka_Out_Offstream.dfs0
11	Inflow	TU_M	170500		Abstracted Water for Irrigation after HPP at Zhrebchevo Res	Zhrebchevo_AbstIRR.dfs0
12	Inflow	TU_M	95600		Abstracted Water by Hanovo PS	HanovoPS.dfs0

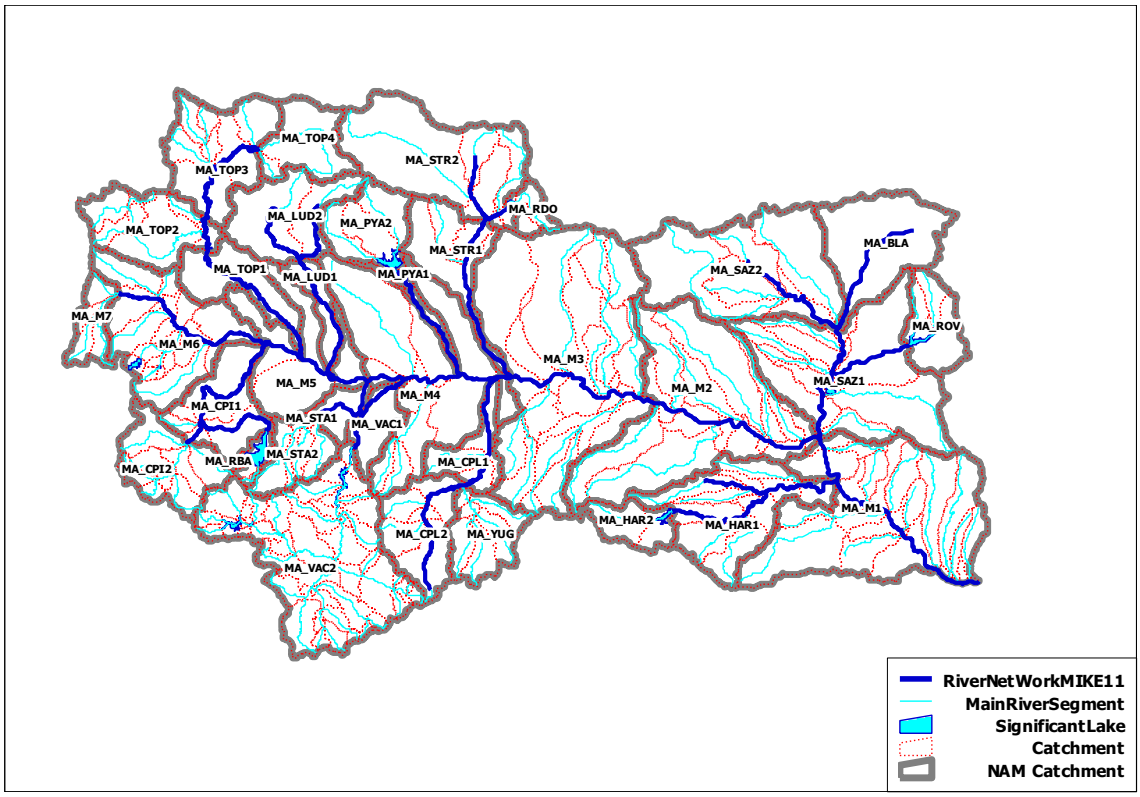
Other Boundary Conditions

Item	Description	Constant Value / File Name
Total Abstracted Water Amount in NAM catchment	For each NAM catchment	Tundzha_AbstW.dfs0
Distributed Domestic Discharge in NAM catchment	For each NAM catchment	Tundzha_DisW.dfs0
Domestic Discharge from towns whose PE is more than 2000	For each point	Constant
Industrial Discharge	For each point	Constant

5. Maritsa River Basin

Outline of Model Setting

- Total Modeling Catchment Area = 21272.27km^2
- Number of Rainfall-Runoff (NAM) Catchment = 34
- Total Length of Modeling River Network = 954.98 km
- Number of Branch = 20



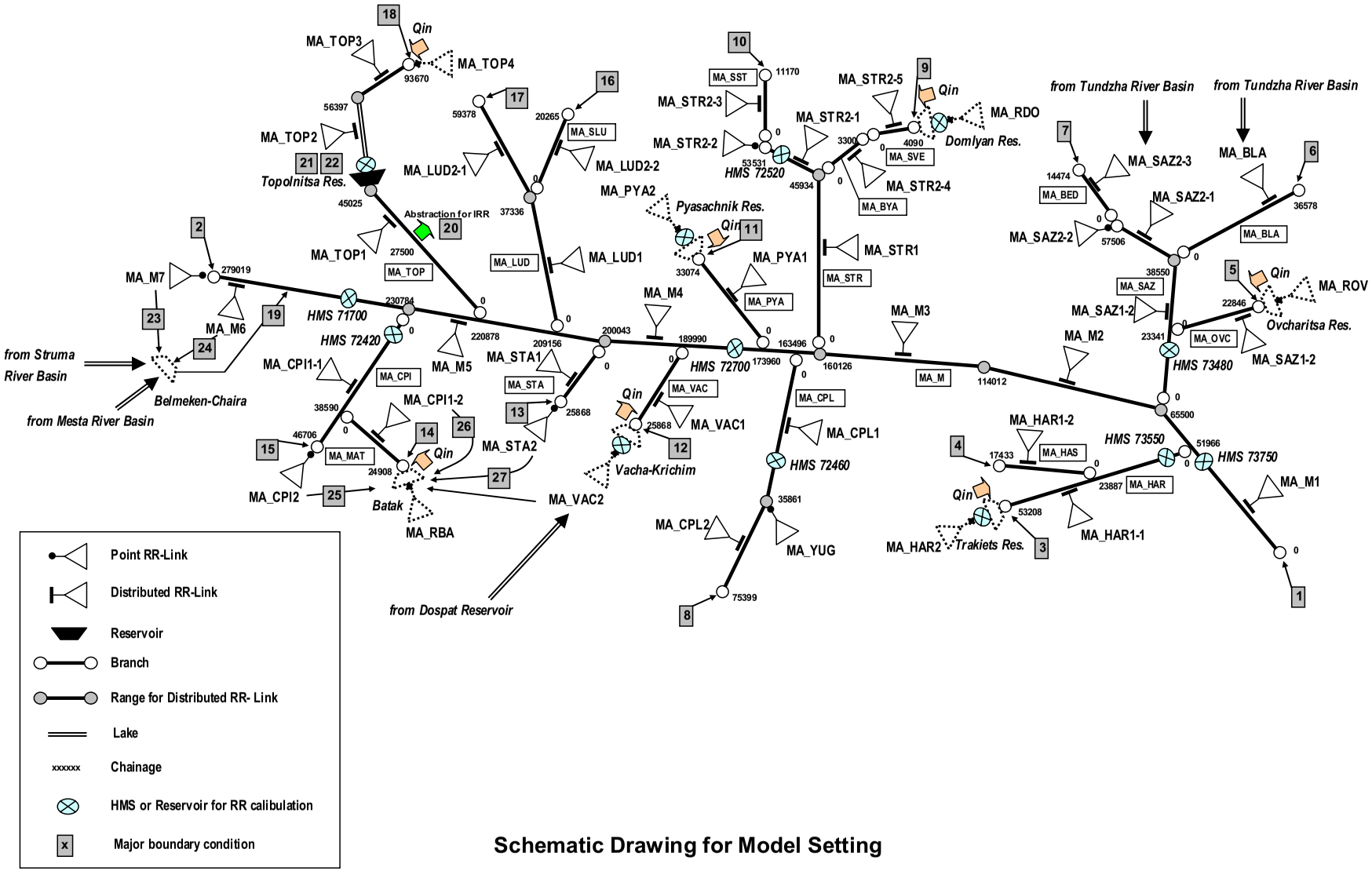
Summary Table of Branch

Branch Name	Length (m)	Main (M) or Tributary (T)	Connection	
			Branch	Chainage (m)
MA_BLA	36578.14	T	MA_SAZ	38550.22
MA_CPI	46706.41	T	MA_M	230784.5
MA_HAR	53208.67	T	MA_M	51966.29
MA_M	279019.9	M		
MA_OVC	22846.7	T	MA_SAZ	23341.14
MA_TOP	93670.73	T	MA_M	220877.7
MA_PYA	33074.18	T	MA_M	173960.4
MA_VAC	25868.11	T	MA_M	189989.9
MA_STA	22486.67	T	MA_M	200043.3
MA_MAT	24908.36	T	MA_CPI	38590.92
MA_LUD	59378.07	T	MA_M	209155.9
MA_SLU	20265.44	T	MA_LUD	37336.22
MA_HAS	17433.6	T	MA_HAR	23886.95
MA_CPL	75399.84	T	MA_M	163496.2
MA_STR	53531.5	T	MA_M	160215.5
MA_SST	11170.08	T	MA_STR	53531.5
MA_BED	14474.61	T	MA_SAZ	57506.51
MA_SAZ	57506.51	T	MA_M	65500.09
MA_BYA	3360.426	T	MA_STR	45934.69
MA_SVE	4090.802	T	MA_BYA	3360.426

Summary Table of NAM Catchment

NAM Catchment	Area (km^2)	Average Elevation (m)	Meteo St. for Temperature	Remarks
MA_BLA	642.01	188	43010	
MA_CPI1	464.14	891	15628	
MA_CPI2	443.09	1395	15628	
MA_CPL1	241.83	757	15628	
MA_CPL2	441.68	1300	15628	
MA_HAR1	761.82	234	43010	
MA_HAR2	201.07	433	43010	
MA_LUD1	150.49	308	15628	
MA_LUD2	523.94	738	15628	
MA_M1	1621.50	224	43010	
MA_M2	1603.51	218	43010	
MA_M3	2258.69	289	43010	
MA_M4	1357.30	373	15628	
MA_M5	606.53	340	15628	
MA_M6	858.53	965	15628	Modified Degree Day Coefficient
MA_M7	173.41	1576	15628	Modified Degree Day Coefficient
MA_PYA1	86.19	237	15628	
MA_PYA2	366.99	556	15628	
MA_RBA	70.33	1245	15628	
MA_RDO	104.52	656	15628	
MA_ROV	291.59	192	43010	
MA_SAZ1	1289.20	184	43010	
MA_SAZ2	1143.25	306	43010	
MA_STA1	124.77	367	15628	
MA_STA2	271.16	1145	15628	
MA_STR1	417.44	321	15628	
MA_STR2	969.06	819	15628	
MA_TOP1	341.20	484	15628	
MA_TOP2	487.23	768	15628	
MA_TOP3	609.06	826	15628	
MA_TOP4	337.69	1125	15628	
MA_VAC1	182.65	600	15628	
MA_VAC2	1496.50	1390	15628	
MA_YUG	333.90	1204	15628	

Note: 43010 - Haskovo, 15628 - Pazardjik



Schematic Drawing for Model Setting

RR – Link (1/2)

Link Name	NAM Catchment	Area (km^2)	Branch	US Chainage	DS Chainage
MA_SAZ2-3	MA_SAZ2	134.33	MA_BED	0	14474
MA_BLA	MA_BLA	642.01	MA_BLA	0	36578
MA_STR2-4	MA_STR2	112.01	MA_BYA	0	3360
MA_CPI1-1	MA_CPI1	314.17	MA_CPI	0	46706
MA_CPI2	MA_CPI2	443.09	MA_CPI	46706	46706
MA_CPL1	MA_CPL1	241.83	MA_CPL	0	35862
MA_YUG	MA_YUG	333.90	MA_CPL	35862	35862
MA_CPL2	MA_CPL2	441.68	MA_CPL	35862	75399
MA_HAR1-1	MA_HAR1	581.40	MA_HAR	0	53208
MA_HAR2	MA_HAR2	201.07	MA_HAR	53208	53208
MA_HAR1-2	MA_HAR1	180.42	MA_HAS	0	17433
MA_LUD1	MA_LUD1	150.49	MA_LUD	0	37336
MA_LUD2-1	MA_LUD2	348.07	MA_LUD	37336	59378
MA_M1	MA_M1	1621.50	MA_M	0	65500
MA_M2	MA_M2	1603.51	MA_M	65500	114013
MA_M3	MA_M3	2258.69	MA_M	114013	160216
MA_M4	MA_M4	1357.30	MA_M	160216	200043
MA_M5	MA_M5	606.53	MA_M	200043	230784
MA_M6	MA_M6	858.53	MA_M	230784	279019
MA_M7	MA_M7	173.41	MA_M	279019	279019
MA_CPI1-2	MA_CPI1	149.98	MA_MAT	0	24908
MA_RBA	MA_RBA	70.33	MA_MAT	24908	24908
MA_SAZ1-2	MA_SAZ1	355.28	MA_OVC	0	22846
MA_ROV	MA_ROV	291.59	MA_OVC	22846	22846
MA_PYA1	MA_PYA1	86.19	MA_PYA	0	33074
MA_PYA2	MA_PYA2	366.99	MA_PYA	33074	33074
MA_SAZ1-1	MA_SAZ1	933.92	MA_SAZ	0	38550
MA_SAZ2-1	MA_SAZ2	430.85	MA_SAZ	38550	57506
MA_SAZ2-2	MA_SAZ2	578.07	MA_SAZ	57506	57506
MA_LUD2-2	MA_LUD2	175.87	MA_SLU	0	20265

RR – Link (2/2)

Link Name	NAM Catchment	Area (km^2)	Branch	US Chainage	DS Chainage
MA_STR2-3	MA_STR2	98.30	MA_SST	0	11170
MA_STA1	MA_STA1	124.77	MA_STA	0	22486
MA_STA2	MA_STA2	271.16	MA_STA	22486	22486
MA_STR1	MA_STR1	417.44	MA_STR	0	45935
MA_STR2-1	MA_STR2	118.41	MA_STR	45935	53531
MA_STR2-2	MA_STR2	619.53	MA_STR	53531	53531
MA_STR2-5	MA_STR2	20.81	MA_SVE	0	4090
MA_RDO	MA_RDO	104.52	MA_SVE	4090	4090
MA_TOP1	MA_TOP1	341.20	MA_TOP	0	45048
MA_TOP2	MA_TOP2	487.23	MA_TOP	45048	56397
MA_TOP3	MA_TOP3	609.06	MA_TOP	56397	93670
MA_TOP4	MA_TOP4	337.69	MA_TOP	93670	93670
MA_VAC1	MA_VAC1	182.65	MA_VAC	0	25868
MA_VAC2	MA_VAC2	1496.50	MA_VAC	25868	25868

Note:

MA_HAR2, MA_ROV, MA_VAC2, MA_RBA, MA_TOP4, MA_PYA2, MA_RDO are not linked.

Major Boundary Conditions

No	Type	Branch	Chainage		Description	Constant value (m3/s) / File Name
1	Q-h	MA_M	0		DS End of MA_M	N/A
2	Inflow	MA_M	279019.89		US End of MA_M	0.001
3	Inflow	MA_HAR	53208.67		Instream Flow formTrakiets Res.	Trakiets_Out_Instream.dfs0
4	Inflow	MA_HAS	17433.60		US End of MA_HAS	0.001
5	Inflow	MA_OVC	22846.70		Instream Flow form Ovchevitsa Res	Ovchevitsa_Out_Instream.dfs0
6	Inflow	MA_BLA	36578.14		US End_MA_BLA	0.001
7	Inflow	MA_BED	14474.61		US End_MA_BED	0.001
8	Inflow	MA_CPL	75399.84		US End_MA_CPL	0.001
9	Inflow	MA_SVE	4090.80		Instream Flow form Domlyan Res.	Domlyan_Out_Offstream.dfs0
10	Inflow	MA_SST	11170.08		US End_MA_SST	0.001
11	Inflow	MA_PYA	33074.18		Instream Flow form Pyasachnik Res	Pyasachinik_Out_Offstream.dfs0
12	Inflow	MA_VAC	25868.11		Instream Flow form Vacha Res.	Vacha_Out_Offstream.dfs0
13	Inflow	MA_STA	22486.67		US End_MA_STA	0.001
14	Inflow	MA_MAT	24908.36		Instream Flow form Batak Res.	Batak_Out_Instream.dfs0
15	Inflow	MA_CPI	46706.41		US End_MA_CPI	0.001
16	Inflow	MA_SLU	20265.44		US End_MA_SLU	0.001
17	Inflow	MA_LUD	59378.07		US End_MA_LUD	0.001
18	Inflow	MA_TOP	93670.73		Instream Flow form Tailing pond in Toplnitsa River	Tpond_Topolnitsa_Out_Instream.dfs0
19	Inflow	MA_M	248306	256387	Instream Flow form Belmeken Res	Belmeken_Out_Instream.dfs0
20	Inflow	MA_TOP	27500		Abstraction for IRR after Topolnitdsa Res	Topolnitsa_AbstIRR.dfs00
21	Inflow	MA_TOP	45048	56397	Offstream Flow form Topolnitsa Res	Topolnitsa_Out_Offstream.dfs0
22	Regulating Structure	MA_TOP	45048.24		Instream Flow form Topolnitsa Res	Topolnitsa_Out_Instream.dfs0
23	Inflow	MA_M	279019		Transfer from MA_M7	Transfer_MA_M7.dfs0
24	Inflow	MA_M	230784	279019	Transfer from MA_M6	Transfer_MA_M6.dfs0
25	Inflow	MA_CPI	46706		Transfer from MA_CPI2	Transfer_MA_CPI2.dfs0
26	Inflow	MA_MAT	0		Transfer from MA_CPI1	Transfer_MA_CPI1.dfs0
27	Inflow	MA_TOP	22486		Transfer from MA_STA2	Transfer_MA_STA2.dfs0

Other Boundary Conditions

Item	Description	Constant Value / File Name
Total Abstracted Water Amount in NAM catchment	For each NAM catchment	Maritsa_AbstW.dfs0
Distributed Domestic Discharge in NAM catchment	For each NAM catchment	Maritsa_DisW.dfs0
Domestic Discharge from towns whose PE is more than 2000	For each point	Constant
Industrial Discharge	For each point	Constant

Annex E.2

Estimation of Quasi-Natural Runoff

for

Calibation of Rainfall-Runoff (NAM) Model

Struma River Basin

River Basin	No	Calibration Point	Rainfall-Runoff Catchments to be Calibrated	Equation to Estimate Quasi-Natural Runoff to be Calibrated	Rainfall-Runoff Catchments for Aggregation of Local Abstraction(T_Qa) & Discharge(T_Qd)	Remarks
Strume	1	Studena Reservoir	ST_M10	(Inflow to StudenaRes) + T_Qa - T_Qd	ST_M10	/Inflow to StudenaRes : Monthly data with Ref. time series at HMS51650
Strume	2	Pchelina Reservoir	ST_M8 ST_M9 ST_KON ST_ARK	(Inflow to PchelinaRes) - (Instream Outflow from StudenaRes) + T_Qa - T_Qd	ST_M8 ST_M9 ST_KON ST_ARK	/Instream Outflow from StudenaRes : Monthly data with Ref. time series at HMS51650 /Inflow to PchelineRes : Monthly data with Ref. time series at HMS51650&HMS51310
Strume	3	HMS 51700	ST_M7 ST_TRE	(Q_HMS51700) - (Instream Outflow from PchelinaRes) + T_Qa - T_Qd	ST_M7 ST_TRE	/Instream Outflow from PchelineRes : Monthly data with Ref. time series at HMS51700
Strume	4	HMS 51750	ST_M6 ST_DRA ST_SOV ST_ELE	(Q_HMS51750) - (Q_HMS51700) - (Inflow from Serbia) + T_Qa - T_Qd	ST_M6 ST_DRA ST_SOV ST_ELE	/Inflow from Serbia : Estimated from Q at HMS51360 considering watershed area
Strume	5	HMS 51430	ST_DZH2	(Q_HMS51430) + T_Qa - T_Qd	ST_DZH2	
Strume	6	HMS 51800	ST_M5 ST_M4 ST_DZH1 ST_RIL ST_BRA ST_GRA	(Q_HMS51800) - (Q_HMS51750) - (Q_HMS51430) + (Transfer from ST_RIL) + (Transfer from ST_BRA) + T_Qa - T_Qd	ST_M5 ST_M4 ST_DZH1 ST_RIL ST_BRA ST_GRA	/Transfer from ST_RIL : Monthly data with Ref. time series at HMS51450 /Transfer from ST_BRA : Monthly data with Ref. time series at HMS51480
Strume	7	HMS 51880	ST_M3 ST_M2 ST_M1 ST_SAN ST_STR1 ST_STR2	(Q_HMS51880) - (Q_HMS51800) - (Inflow from Macedonia) + T_Qa - T_Qd	ST_M3 ST_M2 ST_M1 ST_SAN ST_STR1 ST_STR2	/Inflow from Macedonia : Estimated from Q at HMS51560 considering watershed area
Strume	8	HMS 51590	ST_PIR	(Q_HMS51590) + (Used Water by HPP PirinskaBistritsa) + T_Qa - T_Qd	ST_PIR	/Used Water by HPP PirinskaBistritsa : Monthly data with Ref. time series at HMS51590

Mesta & Dospat River Basins

River Basin	No	Calibration Point	Rainfall-Runoff Catchments to be Calibrated	Equation to Estimate Quasi-Natural Runoff to be Calibrated	Rainfall-Runoff Catchments for Aggregation of Local Abstraction(T_Qa) & Discharge(T_Qd)	Remarks
Mesta&Dospat	1	HMS 52700	ME_M6	(Q_HMS52700) + (Transfer from ME_M6) + T_Qa - T_Qd	ME_M6	/Transfer from ME_M6 : Monthly data with Ref. time series at HMS52700
Mesta&Dospat	2	HMS 52400	ME_IST1 ME_ISt2 ME_GLA	(Q_HMS52400) + T_Qa - T_Qd	ME_IST1 ME_ISt2 ME_GLA	
Mesta&Dospat	3	MHS 52800	ME_M5 ME_M4 ME_ZLA	(Q_HMS52800) - (Q_HMS52700) - (Q_HMS52400) + (Transfer from ME_M5) + T_Qa - T_Qd	ME_M5 ME_M4 ME_ZLA	/Transfer from ME_M5 : Monthly data with Ref. time series at HMS52800
Mesta&Dospat	4	HMS 52850	ME_M3 ME_M2 ME_M1 ME_NEV ME_KAN	(Q_HMS52850) - (Q_HMS52800) + (Transfer from ME_KAN) + T_Qa - T_Qd	ME_M3 ME_M2 ME_NEV ME_KAN	/Transfer from ME_KAN : Monthly data with Ref. time series at HMS52850
Mesta&Dospat	5	Dospat Reservoir	DO_M2	(Inflow to Dospat Reservoir) - (Transfer from ME_KAN) - (Transfer from ME_M1) - (Transfer from DO_M1) + T_Qa - T_Qd	DO_M2	/Transfer from ME_KAN : Monthly data with Ref. time series at HMS52850 /Transfer from ME_M1 : Monthly data with Ref. time series at HMS52850 /Transfer from DO_M1 : Monthly data with Ref. time series at HMS52850
Mesta&Dospat	6	Dospat River at border	DO_M1	(Transfer from DO_M1) x (Ratio of watershed for DO_M1) + T_Qa - T_Qd	DO_M1	/Transfer from DO_M1 : Monthly data with Ref. time series at HMS52850

Arda & Biala River Basins

River Basin	No	Calibration Point	Rainfall-Runoff Catchments to be Calibrated	Equation to Estimate Quasi-Natural Runoff to be Calibrated	Rainfall-Runoff Catchments for Aggregation of Local Abstraction(T_Qa) & Discharge(T_Qd)	Remarks
Arda&Biala	1	Kardzhali Reservoir	AR_M5 AR_M4 AR_M3 AR_CHE	(Inflow to KardzhaliRes) - (Instream Outflow from BorovitsaRes) + (Inflow to BorovitsaRes) + T_Qa - T_Qd	AR_M5 AR_M4 AR_M3 AR_CHE	/Inflow to KardzhaliRes : Monthly data with Ref. time series at HMS61700 /Inflow to BorovitsaRes : Monthly data with Ref. time series at HMS61700 /Instream Outflow from BorovitsaRes : Monthly data with Ref. time series at HMS61700
Arda&Biala	2	S.Kladenets Reservoir	AR_M2 AR_VAR1 AR_VAR2	(Inflow to SKladenetsRes) - (Instream Outflow from KardzhaliRes) + T_Qa - T_Qd	AR_M2 AR_VAR1 AR_VAR2	/Inflow to SKladenetsRes : Monthly data with Ref. time series at HMS61500 /Instream Outflow from KardzhaliRes : Monthly data with Ref. time series at HMS61700
Arda&Biala	3	Ivaylovgrad Reservoir	AR_M1 AR_M0 AR_KRU1 AR_KRU2	(Inflow to IvaylovgradRes) - (Instream Outflow from SKladenetsRes) + T_Qa - T_Qd	AR_M1 AR_KRU1 AR_KRU2	/Inflow to IvaylovgradRes : Monthly data with Ref. time series at HMS61550 /Instream Outflow from SKladenetsRes : Monthly data with Ref. time series at HMS61500
Arda&Biala	4	HMS 62800	BI_M1	(Q_HMS62800) + T_Qa - T_Qd	BI_M1	

Tundzha River Basin

River Basin	No	Calibration Point	Rainfall-Runoff Catchments to be Calibrated	Equation to Estimate Quasi-Natural Runoff to be Calibrated	Rainfall-Runoff Catchments for Aggregation of Local Abstraction(T_Qa) & Discharge(T_Qd)	Remarks
Tundzha	1	Koprinka Reservoir	TU_M9 TU_M8	(Inflow to KoprinkaRes) + T_Qa - T_Qd	TU_M9 TU_M8	/Inflow to KoprinkaRes : Monthly data with Ref. time series at HMS74650
Tundzha	2	Zhrebchevo Reservoir	TU_M7 TU_M6 TU_M5	(Inflow to ZhrebchevoRes) - (Instream Outflow from KoprinkaRes) + T_Qa - T_Qd	TU_M7 TU_M6 TU_M5	/Instream Outflow from KoprinkaRes : Monthly data with Ref. time series at HMS74650 /Inflow to ZhrebchevoRes : Monthly data with Ref. time series at HMS74420
Tundzha	3	Asenovets Reservoir	TU_ASE2	(Inflow to AsenovetsRes) + T_Qa - T_Qd	TU_ASE2	/Inflow to AsenovetsRes : Monthly data with Ref. time series at HMS74440
Tundzha	4	HMS 74800	TU_M4 TU_M3 TU_BEL TU_ASE1 TU_MOC2 TU_MOC1	(Q_HMS74800) - (Instream Outflow from AsenovetsRes) - (Instream Outflow from ZhrebchevoRes) + (Abstraction from BinkosWeir) + T_Qa - T_Qd	TU_M4 TU_M3 TU_BEL TU_ASE1 TU_MOC2 TU_MOC1	/Instream Outflow from AsenovetsRes : Monthly data with Ref. time series at HMS74800 /Instream Outflow from ZhrebchevoRes : Monthly data /Abstraction from BinkosWeir: Monthly data
Tundzha	5	HMS 74850	TU_M2	(Q_HMS74850) - (Q_HMS74800) +(Abstraction from Hanovo PS) + T_Qa - T_Qd	TU_M2	/Abstraction from HanovoPS: Monthly data
Tundzha	6	HMS 74200	TU_KAL	(Q_HMS74200) + T_Qa - T_Qd	TU_KAL	
Tundzha	7	HMS 74580	TU_SIN TU_M1	(Q_HMS74580) + T_Qa - T_Qd	TU_SIN	
Tundzha	8	M.Sherkovo Reservoir	TU_POP2 TU_POP1 TU_ARA	(Inflow to MSherkovoRes) + T_Qa - T_Qd	TU_POP2	/Inflow to MSherkovoRes : Monthly data with Ref. time series at HMS74850

Maritsa River Basin

River Basin	No	Calibration Point	Rainfall-Runoff Catchments to be Calibrated	Equation to Estimate Quasi-Natural Runoff to be Calibrated	Rainfall-Runoff Catchments for Aggregation of Local Abstraction(T_Qa) & Discharge(T_Qd)	Remarks
Maritsa	1	HMS 71700	MA_M7 MA_M6	(Q_HMS71700) - (Instream Outflow from BelmekenRes) + (Transfer from MA_M7) + (Transfer from MA_M6) + T_Qa - T_Qd	MA_M7 MA_M6	/Instream Outflow from BelmekenRes : Monthly data with Ref. time series at HMS71700 /Transfer from MA_M7 : Monthly data with Ref. time series at HMS71700 /Transfer from MA_M6 : Monthly data with Ref. time series at HMS71700
Maritsa	2	Topolnitsa Reservoir	MA_TOP4 MA_TOP3 MA_TOP2	(Inflow to TopolnitsaRes) - (Q_HMS71470) + T_Qa - T_Qd	MA_TOP3 MA_TOP2	/Inflow to TopolnitsaRes : Monthly data with Ref. time series at HMS71480
Maritsa	3	HMS 72420	MA_RBA MA_CPI2 MA_CPI1	(Q_HMS72420) - (Instream Outflow from BatakRes) + (Transfer from MA_CPI2) + (Transfer from MA_CPI1) + T_Qa - T_Qd	MA_CPI2 MA_CPI1	/Instream Outflow from BatakRes : Monthly data with Ref. time series at HMS72420 /Transfer from MA_CPI2: Monthly data with Ref. time series at HMS72420 /Transfer from MA_CPI1: Monthly data with Ref. time series at HMS72420
Maritsa	4	Downstream end of STA2	MA_STA2	(Transfer from MA_STA2) x (Ratio of watershed for MA_STA2) + T_Qa - T_Qd	MA_STA2	/Transfer from MA_STA2: Monthly data with Ref. time series at HMS72700
Maritsa	5	Vacha Reservoir	MA_VAC2	(Inflow to VachaRes) + (Transfer from MA_VAC2) - (Transfer from Dospat Reservoir) + T_Qa - T_Qd	MA_VAC2	/Inflow to VachaRes : Monthly data with Ref. time series at HMS72340 /Transfer from MA_VAC2 : Monthly data with Ref. time series at HMS72340 /Transfer from Dospat Reservoir : Monthly data with Ref. time series at HMS72340
Maritsa	6	HMS 72700	MA_M5 MA_M4 MA_TOP1 MA_LUD2 MA_LUD1 MA_STA1 MA_VAC1 MA_PYA1 MA_CPL1 MA_STR1	(Q_HMS72700) - (Q_MA_M6_UStotal_calculated) - (Q_STA2_UStotal_calculated) - (Instream Outflow from TopolnitsaRes) + (Abstraction for IRR in TopolnitsaRiver) + (Transfer from MA_STA2) - (Instream Outflow from VachaRes) + T_Qa - T_Qd	MA_M5 MA_M4 MA_TOP1 MA_LUD2 MA_LUD1 MA_STA1 MA_VAC1	/Instream Outflow from TopolnitsaRes : Monthly data with Ref. time series at HMS72700 /Abstraction for IRR in TopolnitsaRiver : Monthly data /Transfer from MA_STA2 : Monthly data with Ref. time series at HMS72700 /Instream Outflow from VachaRes : Monthly data with Ref. time series at HMS72700

Note: XXXX_UStotal_calculated = Calculated disturbed water quantity for total upstream area by NAM model

River Basin	No	Calibration Point	Rainfall-Runoff Catchments to be Calibrated	Equation to Estimate Quasi-Natural Runoff to be Calibrated	Rainfall-Runoff Catchments for Aggregation of Local Abstraction(T_Qa) & Discharge(T_Qd)	Remarks
Maritsa	7	Pyasachnik Reservoir	MA_PYA2	(Inflow to PyasachnikRes) + T_Qa - T_Qd	MA_PYA2	/Inflow to PyasachnikRes : Monthly data with Ref. time series at HMS72520
Maritsa	8	HMS 72460	MA_CPL2 MA_YUG	(Q_HMS72460) + T_Qa - T_Qd	MA_CPL2 MA_YUG	
Maritsa	9	HMS 72520	MA_STR2	(Q_HMS72520) + T_Qa - T_Qd	MA_STR2	
Maritsa	10	Domlyan Reservoir	MA_RDO	(Inflow to DomlyanRes) + T_Qa - T_Qd	MA_RDO	/Inflow to DomlyanRes : Monthly data with Ref. time series at HMS72520
Maritsa	11	Trakiets Reservoir	MA_HAR2	(Inflow to TrakietsRes) + T_Qa - T_Qd	MA_HAR2	/Inflow to TrakietsRes : Monthly data with Ref. time series at HMS73550
Maritsa	12	HMS 73550	MA_HAR1 MA_M1	(Q_HMS73550) - (Instream Outflow from TrakietsRes) + T_Qa - T_Qd	MA_HAR1	/Instream Outflow from TrakietsRes : Monthly data with Ref. time series at HMS73550
Maritsa	13	HMS 73480	MA_BLA MA_SAZ2 MA_SAZ1	(Q_HMS73480) - (Instream Outflow from OvchevitsaRes) + T_Qa - T_Qd	MA_BLA MA_SAZ2 MA_SAZ1	/Instream Outflow from OvchevitsaRes : Monthly data (zero)
Maritsa	14	HMS 73750	MA_M3 MA_M2	(Q_HMS73750) - (Q_HMS73550) - (Q_MA_M4_UStotal_calculated) - (Q_MA_SAZ1_Ustotal_calculated) + T_Qa - T_Qd	MA_M3 MA_M2	

Note: XXXX_UStotal_calculated = Calculated disturbed water quantity for total upstream area by NAM model

Annex E.3

Model Parameters

for

Rainfall-Runoff (NAM) Model

Elevation Zone

Struma River Basin

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
ST_ARK	NAM	360.10	15601	520	0.00	0.00	1.23	247.63	75.87	28.78	6.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	765
ST_BRA	NAM	231.05	15601	520	0.00	4.59	17.07	27.55	30.70	30.04	21.65	20.36	17.19	21.84	26.07	13.75	0.24	0.00	1324
ST_DRA	NAM	177.00	15601	520	0.00	0.00	17.48	44.44	62.53	36.32	15.62	0.61	0.00	0.00	0.00	0.00	0.00	0.00	885
ST_DZH1	NAM	371.51	15601	520	0.00	4.07	135.71	139.83	35.01	9.93	8.53	7.13	7.50	4.35	4.18	9.64	5.62	0.00	800
ST_DZH2	NAM	398.74	15601	520	0.00	0.00	41.79	149.04	61.90	46.22	27.86	15.88	12.64	13.62	12.25	10.54	7.00	0.00	1015
ST_ELE	NAM	357.20	15601	520	0.00	0.00	19.06	79.85	107.73	58.36	37.52	29.15	15.48	7.53	2.51	0.00	0.00	0.00	1015
ST_GRA	NAM	235.66	15601	520	0.00	4.29	20.45	36.88	41.74	54.27	28.22	18.14	11.04	7.78	7.00	4.54	1.31	0.00	1097
ST_KON	NAM	371.84	15601	520	0.00	0.00	0.00	193.79	168.97	9.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	806
ST_M1	NAM	364.66	15712	206	118.26	84.18	45.48	29.50	24.63	20.05	12.52	12.83	6.55	6.60	3.25	0.82	0.00	0.00	529
ST_M10	NAM	102.12	15601	520	0.00	0.00	0.00	0.00	24.61	24.12	22.33	13.12	5.96	5.45	6.13	0.41	0.00	0.00	1281
ST_M2	NAM	826.78	15712	206	58.82	94.54	102.25	112.44	151.86	174.00	88.02	33.02	7.53	3.07	1.20	0.03	0.00	0.00	873
ST_M3	NAM	194.47	15712	206	0.23	11.03	20.56	29.86	15.10	13.18	13.79	20.53	19.22	16.20	10.25	15.38	8.38	0.78	1305
ST_M4	NAM	622.12	15601	520	0.00	50.12	96.59	192.22	130.45	85.95	30.46	16.72	14.07	2.82	1.83	0.89	0.00	0.00	816
ST_M5	NAM	302.07	15601	520	0.00	41.12	103.70	72.22	54.15	29.83	1.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	654
ST_M6	NAM	611.02	15601	520	0.00	2.02	214.30	174.84	90.14	62.53	39.25	19.22	5.58	3.14	0.00	0.00	0.00	0.00	774
ST_M7	NAM	279.32	15601	520	0.00	0.00	7.51	108.37	112.53	40.60	10.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	842
ST_M8	NAM	242.38	15601	520	0.00	0.00	0.00	82.69	104.94	44.44	10.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	874
ST_M9	NAM	317.54	15601	520	0.00	0.00	0.00	167.67	117.55	29.07	1.53	1.03	0.67	0.00	0.00	0.00	0.00	0.00	819
ST_PIR	NAM	508.29	15712	206	18.39	62.09	70.96	51.35	58.09	52.20	60.76	51.65	34.10	20.09	11.41	10.10	7.10	0.00	1015
ST_RIL	NAM	384.90	15601	520	0.00	5.54	31.44	22.62	23.07	29.69	31.47	34.66	34.69	36.18	46.60	52.50	36.44	0.00	1595
ST_SAN	NAM	140.50	15712	206	3.95	7.38	8.52	6.85	6.94	8.74	12.03	13.26	12.30	13.89	14.38	18.75	13.52	0.00	1541
ST_SOV	NAM	302.12	15601	520	0.00	0.00	21.36	23.99	106.42	78.28	24.43	16.76	17.74	11.52	1.62	0.00	0.00	0.00	1063
ST_STR1	NAM	360.68	15712	206	96.10	74.32	44.94	33.48	33.38	28.75	26.44	13.02	9.00	1.23	0.00	0.00	0.00	0.00	584
ST_STR2	NAM	76.60	15712	206	4.96	28.08	18.35	8.54	4.87	2.01	3.16	2.60	3.70	0.34	0.00	0.00	0.00	0.00	588
ST_TRE	NAM	528.50	15601	520	0.00	0.00	0.95	64.09	215.66	169.41	54.64	19.95	3.80	0.00	0.00	0.00	0.00	0.00	1006

Elevation Zone

Mesta & Dospat River Basins

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
ME_GLA	NAM	119.64	15601	520	0.00	0.00	0.00	1.58	32.42	6.57	3.93	4.35	11.51	8.09	14.09	18.34	18.38	0.38	1687
ME_IST1	NAM	199.47	15601	520	0.00	0.00	0.00	4.78	67.08	29.20	22.91	20.66	21.01	11.95	12.08	9.80	0.00	0.00	1309
ME_IST2	NAM	129.59	15601	520	0.00	0.00	0.00	0.16	43.00	34.30	12.71	7.61	6.72	6.26	7.86	5.91	4.69	0.35	1309
ME_KAN	NAM	236.40	15712	206	0.00	0.00	3.27	7.61	8.67	16.36	56.72	104.77	34.78	4.22	0.00	0.00	0.00	0.00	1395
ME_M1	NAM	485.47	15712	206	0.00	0.00	48.26	146.39	104.66	71.98	55.53	45.66	11.73	1.16	0.09	0.00	0.00	0.00	949
ME_M2	NAM	200.58	15712	206	0.00	0.00	97.02	38.14	27.83	18.81	15.28	3.51	0.00	0.00	0.00	0.00	0.00	0.00	724
ME_M3	NAM	287.62	15712	206	0.00	0.00	36.49	68.43	56.02	41.00	33.57	21.96	11.62	8.73	4.02	2.70	3.08	0.00	1031
ME_M4	NAM	411.39	15601	520	0.00	0.00	0.00	31.30	107.95	76.87	74.86	61.73	12.11	11.50	12.88	11.87	9.90	0.43	1252
ME_M5	NAM	288.73	15601	520	0.00	0.00	0.00	6.10	60.23	64.22	46.46	39.16	21.78	16.00	14.72	12.20	7.85	0.00	1360
ME_M6	NAM	261.53	15601	520	0.00	0.00	0.00	0.00	1.19	20.35	61.81	47.58	38.57	26.00	24.37	28.70	12.98	0.00	1676
ME_NEV	NAM	52.12	15712	206	0.00	0.00	5.72	6.69	5.94	7.49	13.32	8.23	3.88	0.85	0.00	0.00	0.00	0.00	1122
ME_ZLA	NAM	112.48	15601	520	0.00	0.00	0.00	2.79	9.20	23.61	43.83	30.59	2.46	0.00	0.00	0.00	0.00	0.00	1265
DO_M1	NAM	375.63	15712	206	0.00	0.00	0.00	7.25	41.91	73.60	131.84	107.99	13.04	0.00	0.00	0.00	0.00	0.00	1273
DO_M2	NAM	237.06	15712	206	0.00	0.00	0.00	0.00	0.00	21.60	83.68	101.30	29.62	0.86	0.00	0.00	0.00	0.00	1420

Elevation Zone

Arda & Biala River Basins

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
AR_CHE	NAM	269.72	43010	230	0.00	0.00	0.00	8.88	51.86	82.18	48.72	38.49	29.79	9.07	0.73	0.00	0.00	0.00	1231
AR_KRU1	NAM	390.51	43010	230	13.08	195.35	155.65	24.70	1.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	397
AR_KRU2	NAM	282.85	43010	230	0.00	42.86	178.25	56.89	4.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	510
AR_M0	NAM	83.18	43010	230	27.30	46.05	9.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	257
AR_M1	NAM	715.55	43010	230	121.13	369.40	197.92	27.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	333
AR_M2	NAM	643.64	43010	230	3.07	288.19	291.52	57.90	2.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	423
AR_M3	NAM	475.06	43010	230	0.00	33.64	122.64	157.77	94.12	47.58	15.30	4.01	0.00	0.00	0.00	0.00	0.00	0.00	719
AR_M4	NAM	646.09	43010	230	0.00	0.00	35.26	164.70	188.47	128.01	81.35	29.83	17.39	1.07	0.00	0.00	0.00	0.00	962
AR_M5	NAM	516.52	43010	230	0.00	0.00	0.00	31.96	156.01	205.15	79.59	38.90	4.91	0.00	0.00	0.00	0.00	0.00	1076
AR_VAR1	NAM	467.44	43010	230	0.00	186.29	175.71	80.30	24.33	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	478
AR_VAR2	NAM	722.50	43010	230	0.00	112.39	311.51	192.70	69.85	33.18	2.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	588
BI_M	NAM	598.77	43010	230	59.58	231.92	210.33	77.28	13.32	6.26	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	418

Elevation Zone

Tundzha River Basin

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
TU_ARA	NAM	350.15	43010	230	77.29	224.31	48.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	285
TU_ASE1	NAM	87.88	15637	392	5.75	15.23	28.81	20.63	13.24	4.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	568
TU_ASE2	NAM	75.19	15637	392	0.00	0.00	13.63	24.27	35.84	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	754
TU_BEL	NAM	371.23	15637	392	0.75	93.37	82.26	64.76	70.93	43.98	14.78	0.41	0.00	0.00	0.00	0.00	0.00	0.00	656
TU_KAL	NAM	575.86	43010	230	491.49	83.19	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	168
TU_M1	NAM	469.49	43010	230	170.84	274.63	19.64	4.06	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	232
TU_M2	NAM	799.70	43010	230	621.48	175.32	2.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	170
TU_M3	NAM	507.26	15637	392	337.81	74.41	40.00	36.02	14.94	4.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	262
TU_M4	NAM	302.91	15637	392	111.83	141.94	36.42	10.10	2.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	277
TU_M5	NAM	245.63	15637	392	0.00	113.84	35.86	22.57	35.42	31.64	5.93	0.38	0.00	0.00	0.00	0.00	0.00	0.00	577
TU_M6	NAM	892.56	15637	392	0.00	295.93	195.93	178.22	129.26	83.11	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	595
TU_M7	NAM	215.44	15637	392	0.00	54.65	77.15	12.44	18.16	27.85	23.36	1.82	0.00	0.00	0.00	0.00	0.00	0.00	666
TU_M8	NAM	407.61	15637	392	0.00	23.18	189.44	58.60	40.78	39.61	38.24	10.59	5.00	1.34	0.83	0.00	0.00	0.00	728
TU_M9	NAM	468.85	15637	392	0.00	5.82	182.53	97.31	72.68	26.66	15.95	19.93	23.00	18.54	6.44	0.00	0.00	0.00	833
TU_MOC1	NAM	703.38	15637	392	415.71	236.21	31.55	15.24	4.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	222
TU_MOC2	NAM	590.88	15637	392	153.01	373.00	60.65	3.71	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	273
TU_POP1	NAM	346.10	43010	230	126.62	216.45	3.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	224
TU_POP2	NAM	187.52	43010	230	0.00	143.60	43.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	353
TU_SIN	NAM	293.29	43010	230	101.53	164.37	22.94	4.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	252

Elevation Zone

Maritsa River Basin

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
MA_BLA	NAM	642.01	43010	230	466.92	150.64	24.13	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	188
MA_CPI1	NAM	464.14	15628	212	0.00	50.09	17.30	84.82	147.59	95.89	45.46	19.41	3.42	0.17	0.00	0.00	0.00	0.00	891
MA_CPI2	NAM	443.09	15628	212	0.00	0.00	0.00	0.00	14.98	83.74	113.76	155.55	50.34	20.73	3.99	0.00	0.00	0.00	1395
MA_CPL1	NAM	241.83	15628	212	42.11	24.04	20.57	29.06	35.24	49.02	35.11	6.55	0.13	0.00	0.00	0.00	0.00	0.00	757
MA_CPL2	NAM	441.68	15628	212	0.00	0.00	1.08	19.72	49.12	78.58	108.51	125.80	48.76	9.80	0.31	0.00	0.00	0.00	1300
MA_HAR1	NAM	761.82	43010	230	267.92	466.97	25.40	1.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	234
MA_HAR2	NAM	201.07	43010	230	0.00	90.83	84.47	24.25	1.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	433
MA_LUD1	NAM	150.49	15628	212	6.16	116.28	27.40	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	308
MA_LUD2	NAM	523.94	15628	212	0.00	10.28	157.32	194.21	68.50	58.87	30.80	3.96	0.00	0.00	0.00	0.00	0.00	0.00	738
MA_M1	NAM	1621.50	43010	230	804.12	650.11	147.78	19.24	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	224
MA_M2	NAM	1603.51	43010	230	996.84	461.28	114.18	29.61	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	218
MA_M3	NAM	2258.69	15628	212	991.36	860.37	217.27	103.88	50.82	18.74	14.26	1.99	0.00	0.00	0.00	0.00	0.00	0.00	289
MA_M4	NAM	1357.30	15628	212	668.76	411.25	69.93	29.75	21.89	36.51	46.84	61.74	8.48	2.15	0.00	0.00	0.00	0.00	373
MA_M5	NAM	606.53	15628	212	61.71	414.27	73.24	24.57	13.27	10.18	9.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	340
MA_M6	NAM	858.53	15628	212	0.00	84.27	149.20	206.91	97.34	59.05	61.87	75.88	43.69	37.99	24.70	12.88	4.76	0.00	965
MA_M7	NAM	173.41	15628	212	0.00	0.00	0.00	7.99	36.66	21.19	13.25	9.13	16.37	13.40	16.77	20.50	16.76	1.38	1576
MA_PYA1	NAM	86.19	15628	212	29.99	53.71	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	237
MA_PYA2	NAM	366.99	15628	212	0.00	126.93	124.06	56.38	29.79	18.58	9.37	1.89	0.00	0.00	0.00	0.00	0.00	0.00	556
MA_RBA	NAM	70.33	15628	212	0.00	0.00	0.00	0.00	0.00	43.18	13.87	6.89	6.05	0.34	0.00	0.00	0.00	0.00	1245
MA_RDO	NAM	104.52	15628	212	0.00	4.26	35.86	42.24	20.85	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	656
MA_ROV	NAM	291.59	43010	230	183.99	107.44	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	192
MA_SAZ1	NAM	1289.20	43010	230	965.35	274.95	43.55	5.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	184
MA_SAZ2	NAM	1143.25	43010	230	496.29	276.03	311.38	58.00	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	306
MA_STA1	NAM	124.77	15628	212	14.78	72.43	24.30	5.53	5.11	2.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	367
MA_STA2	NAM	271.16	15628	212	0.00	9.28	24.47	23.80	26.03	43.83	71.47	43.43	21.72	6.87	0.26	0.00	0.00	0.00	1145
MA_STR1	NAM	417.44	15628	212	46.70	279.18	74.12	14.77	2.19	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	321
MA_STR2	NAM	969.06	15628	212	0.00	194.92	226.24	128.86	106.82	94.68	85.16	63.69	31.88	26.82	8.88	1.12	0.00	0.00	819
MA_TOP1	NAM	341.20	15628	212	0.00	136.61	110.09	65.89	23.57	5.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	484
MA_TOP2	NAM	487.23	15628	212	0.00	0.68	50.86	225.79	183.74	25.65	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	768
MA_TOP3	NAM	609.06	15628	212	0.00	0.00	86.96	269.03	129.38	57.52	37.47	19.57	8.61	0.53	0.00	0.00	0.00	0.00	826
MA_TOP4	NAM	337.69	15628	212	0.00	0.00	0.00	42.76	65.08	103.84	87.80	17.00	10.40	9.78	1.04	0.00	0.00	0.00	1125
MA_VAC1	NAM	182.65	15628	212	34.34	50.51	21.11	18.32	16.35	16.20	16.34	9.39	0.07	0.00	0.00	0.00	0.00	0.00	600
MA_VAC2	NAM	1496.50	15628	212	0.00	0.00	13.28	48.13	98.36	184.31	322.95	436.19	307.90	75.09	10.28	0.00	0.00	0.00	1390
MA_YUG	NAM	333.90	15628	212	0.00	0.00	1.71	21.80	57.81	90.54	72.10	51.13	36.57	2.24	0.00	0.00	0.00	0.00	1204

Correction of Precipitation

Struma River Basin

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
ST_ARK	NAM	360.10	15601	520	-18.08	-13.02	-7.64	-1.92	4.14	10.58	17.42	24.68	32.39	40.57	49.27	58.50	68.30	78.70	765
ST_BRA	NAM	231.05	15601	520	-30.73	-26.45	-21.90	-17.07	-11.94	-6.50	-0.72	5.42	11.94	18.86	26.21	34.02	42.31	51.11	1324
ST_DRA	NAM	177.00	15601	520	-20.97	-16.08	-10.90	-5.39	0.46	6.68	13.27	20.28	27.72	35.61	44.00	52.90	62.36	72.40	885
ST_DZH1	NAM	371.51	15601	520	-18.94	-13.93	-8.61	-2.96	3.04	9.41	16.18	23.36	30.99	39.09	47.69	56.82	66.52	76.82	800
ST_DZH2	NAM	398.74	15601	520	-24.00	-19.30	-14.31	-9.01	-3.38	2.59	8.94	15.68	22.83	30.42	38.49	47.05	56.15	65.80	1015
ST_ELE	NAM	357.20	15601	520	-24.01	-19.31	-14.33	-9.03	-3.40	2.57	8.91	15.65	22.80	30.39	38.46	47.02	56.11	65.76	1015
ST_GRA	NAM	235.66	15601	520	-25.86	-21.28	-16.41	-11.24	-5.75	0.08	6.27	12.84	19.81	27.22	35.09	43.44	52.31	61.73	1097
ST_KON	NAM	371.84	15601	520	-19.08	-14.08	-8.77	-3.12	2.87	9.23	15.98	23.15	30.77	38.86	47.44	56.56	66.24	76.52	806
ST_M1	NAM	364.66	15712	206	-12.08	-6.64	-0.87	5.26	11.77	18.68	26.02	33.81	42.08	50.87	60.20	70.11	80.63	91.79	529
ST_M10	NAM	102.12	15601	520	-29.84	-25.50	-20.90	-16.01	-10.81	-5.30	0.56	6.78	13.38	20.39	27.83	35.74	44.13	53.05	1281
ST_M2	NAM	826.78	15712	206	-20.70	-15.79	-10.59	-5.06	0.81	7.05	13.67	20.70	28.16	36.08	44.50	53.43	62.92	73.00	873
ST_M3	NAM	194.47	15712	206	-30.33	-26.02	-21.44	-16.59	-11.43	-5.95	-0.14	6.04	12.60	19.56	26.95	34.80	43.14	51.99	1305
ST_M4	NAM	622.12	15601	520	-19.34	-14.35	-9.05	-3.43	2.54	8.88	15.61	22.76	30.36	38.42	46.98	56.06	65.71	75.96	816
ST_M5	NAM	302.07	15601	520	-15.31	-10.07	-4.51	1.39	7.66	14.32	21.39	28.90	36.87	45.33	54.32	63.86	73.99	84.75	654
ST_M6	NAM	611.02	15601	520	-18.30	-13.25	-7.89	-2.19	3.86	10.28	17.10	24.34	32.03	40.19	48.86	58.07	67.84	78.22	774
ST_M7	NAM	279.32	15601	520	-19.96	-15.01	-9.75	-4.17	1.76	8.05	14.73	21.82	29.36	37.36	45.85	54.87	64.44	74.61	842
ST_M8	NAM	242.38	15601	520	-20.73	-15.83	-10.62	-5.10	0.77	7.00	13.62	20.64	28.10	36.03	44.44	53.37	62.85	72.92	874
ST_M9	NAM	317.54	15601	520	-19.41	-14.42	-9.13	-3.51	2.45	8.79	15.51	22.66	30.24	38.30	46.85	55.93	65.57	75.81	819
ST_PIR	NAM	508.29	15712	206	-24.02	-19.32	-14.33	-9.03	-3.40	2.57	8.91	15.65	22.80	30.39	38.45	47.01	56.11	65.76	1015
ST_RIL	NAM	384.90	15601	520	-36.14	-32.19	-28.00	-23.55	-18.82	-13.80	-8.47	-2.81	3.20	9.58	16.36	23.56	31.20	39.31	1595
ST_SAN	NAM	140.50	15712	206	-35.10	-31.09	-26.83	-22.31	-17.50	-12.40	-6.98	-1.23	4.88	11.36	18.25	25.56	33.32	41.57	1541
ST_SOV	NAM	302.12	15601	520	-25.08	-20.45	-15.53	-10.31	-4.76	1.13	7.38	14.02	21.07	28.56	36.51	44.95	53.91	63.43	1063
ST_STR1	NAM	360.68	15712	206	-13.52	-8.17	-2.49	3.54	9.94	16.74	23.96	31.62	39.76	48.40	57.58	67.33	77.67	88.66	584
ST_STR2	NAM	76.60	15712	206	-13.62	-8.28	-2.61	3.42	9.81	16.60	23.81	31.47	39.60	48.23	57.40	67.13	77.46	88.44	588
ST_TRE	NAM	528.50	15601	520	-23.80	-19.08	-14.08	-8.77	-3.13	2.86	9.22	15.98	23.15	30.77	38.85	47.44	56.55	66.24	1006

Correction of Precipitation

Mesta & Dospat River Basins

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
ME_GLA	NAM	119.64	15601	520	-37.88	-34.04	-29.96	-25.63	-21.03	-16.15	-10.96	-5.46	0.39	6.60	13.19	20.19	27.62	35.51	1687
ME_IST1	NAM	199.47	15601	520	-30.41	-26.11	-21.54	-16.69	-11.54	-6.07	-0.26	5.91	12.46	19.41	26.80	34.64	42.97	51.81	1309
ME_IST2	NAM	129.59	15601	520	-30.42	-26.12	-21.55	-16.70	-11.55	-6.08	-0.28	5.89	12.44	19.39	26.78	34.61	42.94	51.78	1309
ME_KAN	NAM	236.40	15712	206	-32.18	-27.99	-23.54	-18.81	-13.79	-8.46	-2.80	3.21	9.59	16.37	23.57	31.21	39.32	47.94	1395
ME_M1	NAM	485.47	15712	206	-22.49	-17.69	-12.60	-7.20	-1.46	4.63	11.10	17.97	25.27	33.01	41.24	49.97	59.25	69.09	949
ME_M2	NAM	200.58	15712	206	-17.07	-11.94	-6.49	-0.71	5.43	11.95	18.87	26.22	34.03	42.32	51.12	60.46	70.38	80.92	724
ME_M3	NAM	287.62	15712	206	-24.38	-19.70	-14.74	-9.46	-3.87	2.08	8.39	15.09	22.21	29.77	37.79	46.31	55.36	64.97	1031
ME_M4	NAM	411.39	15601	520	-29.21	-24.84	-20.19	-15.25	-10.01	-4.45	1.46	7.74	14.40	21.47	28.98	36.96	45.43	54.42	1252
ME_M5	NAM	288.73	15601	520	-31.47	-27.23	-22.73	-17.95	-12.88	-7.49	-1.77	4.30	10.75	17.60	24.87	32.59	40.79	49.50	1360
ME_M6	NAM	261.53	15601	520	-37.68	-33.82	-29.73	-25.39	-20.77	-15.87	-10.67	-5.15	0.72	6.95	13.56	20.58	28.04	35.96	1676
ME_NEV	NAM	52.12	15712	206	-26.40	-21.85	-17.02	-11.89	-6.44	-0.65	5.49	12.01	18.94	26.29	34.10	42.40	51.20	60.55	1122
ME_ZLA	NAM	112.48	15601	520	-29.49	-25.13	-20.50	-15.59	-10.37	-4.83	1.06	7.31	13.94	20.99	28.47	36.42	44.85	53.81	1265
DO_M1	NAM	375.63	15712	206	-29.66	-25.32	-20.70	-15.79	-10.59	-5.06	0.81	7.05	13.67	20.70	28.16	36.08	44.50	53.43	1273
DO_M2	NAM	237.06	15712	206	-32.69	-28.53	-24.11	-19.42	-14.43	-9.14	-3.52	2.44	8.78	15.50	22.65	30.23	38.28	46.83	1420

Correction of Precipitation

Arda & Biala River Basins

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
AR_CHE	NAM	269.72	43010	230	-28.78	-24.37	-19.70	-14.73	-9.46	-3.86	2.08	8.40	15.10	22.22	29.77	37.80	46.32	55.37	1231
AR_KRU1	NAM	390.51	43010	230	-8.52	-2.86	3.14	9.52	16.29	23.49	31.12	39.23	47.84	56.98	66.69	77.00	87.94	99.56	397
AR_KRU2	NAM	282.85	43010	230	-11.58	-6.11	-0.31	5.86	12.40	19.35	26.73	34.57	42.89	51.73	61.11	71.07	81.65	92.89	510
AR_M0	NAM	83.18	43010	230	-4.60	1.30	7.56	14.21	21.28	28.78	36.74	45.19	54.17	63.71	73.83	84.58	95.99	108.11	257
AR_M1	NAM	715.55	43010	230	-6.76	-0.99	5.13	11.63	18.54	25.87	33.65	41.91	50.69	60.01	69.90	80.41	91.56	103.41	333
AR_M2	NAM	643.64	43010	230	-9.23	-3.62	2.34	8.67	15.39	22.52	30.10	38.15	46.69	55.76	65.39	75.62	86.48	98.01	423
AR_M3	NAM	475.06	43010	230	-16.96	-11.82	-6.37	-0.58	5.57	12.10	19.03	26.39	34.20	42.50	51.31	60.67	70.61	81.16	719
AR_M4	NAM	646.09	43010	230	-22.79	-18.02	-12.95	-7.56	-1.85	4.22	10.67	17.51	24.78	32.49	40.68	49.38	58.62	68.43	962
AR_M5	NAM	516.52	43010	230	-25.39	-20.78	-15.88	-10.68	-5.15	0.71	6.94	13.55	20.57	28.03	35.95	44.35	53.28	62.76	1076
AR_VAR1	NAM	467.44	43010	230	-10.72	-5.19	0.67	6.89	13.50	20.52	27.97	35.89	44.29	53.21	62.69	72.75	83.43	94.77	478
AR_VAR2	NAM	722.50	43010	230	-13.62	-8.28	-2.61	3.41	9.81	16.60	23.81	31.46	39.59	48.22	57.39	67.12	77.46	88.43	588
BI_M	NAM	598.77	43010	230	-9.09	-3.47	2.50	8.83	15.56	22.71	30.30	38.35	46.91	55.99	65.64	75.88	86.76	98.31	418

Correction of Precipitation

Tundzha River Basin

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
TU_ARA	NAM	350.15	43010	230	-5.39	0.46	6.67	13.27	20.27	27.71	35.61	44.00	52.90	62.35	72.39	83.05	94.37	106.39	285
TU_ASE1	NAM	87.88	15637	392	-13.09	-7.72	-2.01	4.05	10.48	17.31	24.57	32.27	40.45	49.13	58.35	68.15	78.54	89.58	568
TU_ASE2	NAM	75.19	15637	392	-17.82	-12.74	-7.34	-1.61	4.47	10.93	17.79	25.08	32.81	41.02	49.74	59.00	68.84	79.28	754
TU_BEL	NAM	371.23	15637	392	-15.37	-10.14	-4.58	1.32	7.58	14.23	21.30	28.80	36.76	45.22	54.20	63.73	73.86	84.61	656
TU_KAL	NAM	575.86	43010	230	-2.03	4.03	10.46	17.29	24.55	32.25	40.43	49.11	58.33	68.12	78.52	89.55	101.28	113.72	168
TU_M1	NAM	469.49	43010	230	-3.88	2.07	8.38	15.08	22.19	29.75	37.77	46.29	55.34	64.94	75.14	85.97	97.47	109.69	232
TU_M2	NAM	799.70	43010	230	-2.08	3.97	10.40	17.23	24.48	32.18	40.35	49.03	58.24	68.03	78.42	89.45	101.17	113.61	170
TU_M3	NAM	507.26	15637	392	-4.73	1.16	7.42	14.06	21.11	28.60	36.55	45.00	53.96	63.48	73.59	84.33	95.73	107.83	262
TU_M4	NAM	302.91	15637	392	-5.18	0.68	6.91	13.52	20.54	28.00	35.91	44.31	53.24	62.71	72.78	83.46	94.80	106.85	277
TU_M5	NAM	245.63	15637	392	-13.32	-7.96	-2.27	3.77	10.19	17.00	24.24	31.92	40.08	48.74	57.94	67.70	78.07	89.08	577
TU_M6	NAM	892.56	15637	392	-13.80	-8.47	-2.81	3.20	9.58	16.36	23.55	31.19	39.31	47.92	57.07	66.78	77.09	88.04	595
TU_M7	NAM	215.44	15637	392	-15.62	-10.40	-4.86	1.02	7.27	13.90	20.95	28.43	36.37	44.80	53.76	63.26	73.36	84.08	666
TU_M8	NAM	407.61	15637	392	-17.18	-12.06	-6.62	-0.85	5.28	11.79	18.71	26.05	33.84	42.12	50.90	60.24	70.14	80.66	728
TU_M9	NAM	468.85	15637	392	-19.74	-14.78	-9.51	-3.92	2.03	8.33	15.03	22.15	29.70	37.72	46.24	55.28	64.88	75.08	833
TU_MOC1	NAM	703.38	15637	392	-3.58	2.38	8.71	15.44	22.57	30.15	38.20	46.75	55.82	65.46	75.69	86.55	98.09	110.34	222
TU_MOC2	NAM	590.88	15637	392	-5.05	0.82	7.05	13.67	20.70	28.17	36.09	44.51	53.44	62.93	73.01	83.70	95.06	107.12	273
TU_POP1	NAM	346.10	43010	230	-3.64	2.32	8.65	15.37	22.50	30.08	38.12	46.66	55.73	65.36	75.58	86.44	97.97	110.21	224
TU_POP2	NAM	187.52	43010	230	-7.31	-1.57	4.51	10.98	17.84	25.12	32.86	41.08	49.80	59.06	68.90	79.35	90.44	102.21	353
TU_SIN	NAM	293.29	43010	230	-4.46	1.45	7.72	14.38	21.45	28.97	36.94	45.41	54.40	63.95	74.08	84.85	96.28	108.42	252

Correction of Precipitation

Maritsa River Basin

NAM		Total catchmnet (km2)	MeteoSt Temperature	Elevation MeteoSt (m)	100	300	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500	2700	Ave Elevation (m)
MA_BLA	NAM	642.01	43010	230	-2.62	3.40	9.80	16.59	23.80	31.45	39.58	48.21	57.37	67.11	77.44	88.41	100.06	112.43	188
MA_CPI1	NAM	464.14	15628	212	-21.12	-16.25	-11.07	-5.57	0.27	6.47	13.06	20.05	27.47	35.35	43.72	52.61	62.05	72.07	891
MA_CPI2	NAM	443.09	15628	212	-32.19	-28.00	-23.54	-18.81	-13.79	-8.46	-2.80	3.21	9.59	16.37	23.56	31.20	39.31	47.93	1395
MA_CPL1	NAM	241.83	15628	212	-17.90	-12.82	-7.43	-1.70	4.37	10.83	17.68	24.96	32.69	40.89	49.60	58.85	68.68	79.11	757
MA_CPL2	NAM	441.68	15628	212	-30.23	-25.92	-21.34	-16.48	-11.31	-5.83	0.00	6.18	12.75	19.72	27.12	34.98	43.33	52.19	1300
MA_HAR1	NAM	761.82	43010	230	-3.94	2.00	8.30	15.00	22.11	29.66	37.68	46.19	55.24	64.83	75.03	85.85	97.34	109.55	234
MA_HAR2	NAM	201.07	43010	230	-9.50	-3.91	2.04	8.35	15.05	22.16	29.71	37.74	46.25	55.30	64.90	75.10	85.92	97.42	433
MA_LUD1	NAM	150.49	15628	212	-6.05	-0.24	5.93	12.48	19.44	26.82	34.66	42.99	51.83	61.22	71.19	81.78	93.02	104.95	308
MA_LUD2	NAM	523.94	15628	212	-17.43	-12.32	-6.90	-1.14	4.97	11.46	18.35	25.67	33.44	41.69	50.45	59.76	69.64	80.13	738
MA_M1	NAM	1621.50	43010	230	-3.65	2.31	8.64	15.36	22.49	30.07	38.11	46.65	55.72	65.35	75.57	86.43	97.95	110.20	224
MA_M2	NAM	1603.51	43010	230	-3.49	2.48	8.81	15.54	22.69	30.27	38.33	46.88	55.97	65.61	75.85	86.73	98.27	110.53	218
MA_M3	NAM	2258.69	43010	230	-5.52	0.32	6.52	13.11	20.10	27.53	35.42	43.79	52.68	62.12	72.15	82.79	94.10	106.10	289
MA_M4	NAM	1357.30	15628	212	-7.85	-2.15	3.90	10.32	17.14	24.39	32.08	40.25	48.92	58.13	67.91	78.29	89.31	101.02	373
MA_M5	NAM	606.53	15628	212	-6.95	-1.20	4.91	11.40	18.29	25.60	33.37	41.61	50.37	59.67	69.54	80.03	91.16	102.98	340
MA_M6	NAM	858.53	15628	212	-22.86	-18.09	-13.03	-7.65	-1.94	4.13	10.57	17.40	24.66	32.37	40.56	49.25	58.48	68.28	965
MA_M7	NAM	173.41	15628	212	-35.78	-31.81	-27.59	-23.11	-18.36	-13.31	-7.95	-2.26	3.79	10.20	17.02	24.26	31.94	40.10	1576
MA_PYA1	NAM	86.19	15628	212	-4.04	1.90	8.20	14.89	21.99	29.54	37.55	46.05	55.08	64.67	74.86	85.67	97.15	109.34	237
MA_PYA2	NAM	366.99	15628	212	-12.77	-7.38	-1.65	4.43	10.89	17.74	25.03	32.76	40.97	49.68	58.94	68.77	79.20	90.28	556
MA_RBA	NAM	70.33	15628	212	-29.08	-24.69	-20.03	-15.09	-9.84	-4.26	1.66	7.94	14.62	21.70	29.23	37.22	45.71	54.72	1245
MA_RDO	NAM	104.52	15628	212	-15.37	-10.14	-4.59	1.32	7.58	14.23	21.30	28.80	36.76	45.22	54.20	63.73	73.86	84.61	656
MA_ROV	NAM	291.59	43010	230	-2.73	3.29	9.67	16.45	23.66	31.30	39.42	48.04	57.20	66.92	77.24	88.20	99.84	112.19	192
MA_SAZ1	NAM	1289.20	43010	230	-2.49	3.54	9.94	16.74	23.96	31.62	39.76	48.40	57.58	67.33	77.67	88.66	100.33	112.71	184
MA_SAZ2	NAM	1143.25	43010	230	-5.99	-0.18	6.00	12.55	19.51	26.90	34.75	43.08	51.93	61.32	71.30	81.89	93.14	105.08	306
MA_STA1	NAM	124.77	15628	212	-7.71	-2.00	4.06	10.49	17.32	24.58	32.28	40.46	49.15	58.37	68.16	78.56	89.60	101.33	367
MA_STA2	NAM	271.16	15628	212	-26.91	-22.39	-17.59	-12.49	-7.08	-1.34	4.77	11.24	18.12	25.43	33.18	41.42	50.16	59.45	1145
MA_STR1	NAM	417.44	15628	212	-6.41	-0.62	5.53	12.05	18.98	26.34	34.15	42.45	51.26	60.61	70.54	81.09	92.28	104.17	321
MA_STR2	NAM	969.06	15628	212	-19.40	-14.42	-9.13	-3.51	2.46	8.80	15.52	22.67	30.25	38.31	46.86	55.94	65.58	75.82	819
MA_TOP1	NAM	341.20	15628	212	-10.88	-5.37	0.48	6.69	13.29	20.29	27.73	35.63	44.02	52.92	62.38	72.42	83.08	94.40	484
MA_TOP2	NAM	487.23	15628	212	-18.16	-13.10	-7.73	-2.02	4.04	10.47	17.30	24.56	32.26	40.44	49.12	58.34	68.13	78.53	768
MA_TOP3	NAM	609.06	15628	212	-19.58	-14.61	-9.33	-3.72	2.23	8.55	15.26	22.39	29.96	38.00	46.53	55.59	65.21	75.43	826
MA_TOP4	NAM	337.69	15628	212	-26.46	-21.92	-17.09	-11.96	-6.52	-0.74	5.40	11.92	18.84	26.19	33.99	42.28	51.07	60.42	1125
MA_VAC1	NAM	182.65	15628	212	-13.92	-8.60	-2.95	3.05	9.42	16.19	23.38	31.00	39.11	47.71	56.84	66.54	76.84	87.77	600
MA_VAC2	NAM	1496.50	15628	212	-32.09	-27.89	-23.43	-18.70	-13.67	-8.33	-2.66	3.35	9.74	16.53	23.74	31.39	39.51	48.14	1390
MA_YUG	NAM	333.90	15628	212	-28.19	-23.75	-19.03	-14.03	-8.71	-3.06	2.93	9.29	16.05	23.23	30.85	38.94	47.53	56.65	1204

Calibrated NAM Parameters

Struma River Basin

NAM	UMAX	LMAX	CQOF	CKIF	CK12	TOF	TIF	TG	CKBF	Carea	Sy	GWLBF0	GWLBF1	Cqlow	Cklow	Csnow	T0
ST_ARK	49.3	1999.0	0.148	200	9.7	0.67200	0.95200	0.70100	500	1	0.1	10	0	50	10000	2	0
ST_BRA	20.0	217.0	0.594	200	72.0	0.80500	0.91600	0.34300	500	1	0.1	10	0	10	10000	2	0
ST_DRA	20.1	173.0	0.104	200	16.1	0.24800	0.69900	0.00843	500	1	0.1	10	0	10	10000	2	0
ST_DZH1	20.0	217.0	0.594	200	72.0	0.80500	0.91600	0.34300	500	1	0.1	10	0	10	10000	2	0
ST_DZH2	49.5	398.0	0.434	200	10.5	0.82500	0.96300	0.20100	500	1	0.1	10	0	50	10000	2	0
ST_ELE	20.1	173.0	0.104	200	16.1	0.24800	0.69900	0.00843	500	1	0.1	10	0	10	10000	2	0
ST_GRA	20.0	217.0	0.594	200	72.0	0.80500	0.91600	0.34300	500	1	0.1	10	0	10	10000	2	0
ST_KON	49.3	1999.0	0.148	200	9.7	0.67200	0.95200	0.70100	500	1	0.1	10	0	50	10000	2	0
ST_M1	20.0	284.0	0.353	200	24.2	0.54200	0.13000	0.00000	500	1	0.1	10	0	10	10000	2	0
ST_M10	14.3	87.1	0.579	500	15.9	0.70000	0.03470	0.00101	500	1	0.1	10	0	50	10000	2	0
ST_M2	20.0	284.0	0.353	200	24.2	0.54200	0.13000	0.00000	500	1	0.1	10	0	10	10000	2	0
ST_M3	20.0	284.0	0.353	200	24.2	0.54200	0.13000	0.00000	500	1	0.1	10	0	10	10000	2	0
ST_M4	20.0	217.0	0.594	200	72.0	0.80500	0.91600	0.34300	500	1	0.1	10	0	10	10000	2	0
ST_M5	20.0	217.0	0.594	200	72.0	0.80500	0.91600	0.34300	500	1	0.1	10	0	10	10000	2	0
ST_M6	20.1	173.0	0.104	200	16.1	0.24800	0.69900	0.00843	500	1	0.1	10	0	10	10000	2	0
ST_M7	22.4	207.0	0.599	200	24.6	0.60500	0.69700	0.05530	500	1	0.1	10	0	10	10000	2	0
ST_M8	49.3	1999.0	0.148	200	9.7	0.67200	0.95200	0.70100	500	1	0.1	10	0	50	10000	2	0
ST_M9	49.3	1999.0	0.148	200	9.7	0.67200	0.95200	0.70100	500	1	0.1	10	0	50	10000	2	0
ST_PIR	10.5	385.0	0.108	500	55.9	0.67100	0.69400	0.18600	500	1	0.1	10	0	50	10000	2	0
ST_RIL	20.0	217.0	0.594	200	72.0	0.80500	0.91600	0.34300	500	1	0.1	10	0	10	10000	2	0
ST_SAN	20.0	284.0	0.353	200	24.2	0.54200	0.13000	0.00000	500	1	0.1	10	0	10	10000	2	0
ST_SOV	20.1	173.0	0.104	200	16.1	0.24800	0.69900	0.00843	500	1	0.1	10	0	10	10000	2	0
ST_STR1	20.0	284.0	0.353	200	24.2	0.54200	0.13000	0.00000	500	1	0.1	10	0	10	10000	2	0
ST_STR2	20.0	284.0	0.353	200	24.2	0.54200	0.13000	0.00000	500	1	0.1	10	0	10	10000	2	0
ST_TRE	22.4	207.0	0.599	200	24.6	0.60500	0.69700	0.05530	500	1	0.1	10	0	10	10000	2	0

Calibrated NAM Parameters

Mesta & Dospat River Basins

NAM	UMAX	LMAX	CQOF	CKIF	CK12	TOF	TIF	TG	CKBF	Carea	Sy	GWLBF0	GWLBF1	Cqlow	Cklow	Csnow	T0
ME_GLA	5.0	48.2	0.101	200	24.9	0.69900	0.05870	0.00391	300	1	0.1	10	0	30	10000	2	0
ME_IST1	5.0	48.2	0.101	200	24.9	0.69900	0.05870	0.00391	300	1	0.1	10	0	30	10000	2	0
ME_IST2	5.0	48.2	0.101	200	24.9	0.69900	0.05870	0.00391	300	1	0.1	10	0	30	10000	2	0
ME_KAN	30.0	350.0	0.100	200	72.0	0.30000	0.70000	0.04360	300	1	0.1	10	0	5	10000	2	0
ME_M1	30.0	350.0	0.100	200	72.0	0.30000	0.70000	0.04360	300	1	0.1	10	0	5	10000	2	0
ME_M2	30.0	350.0	0.100	200	72.0	0.30000	0.70000	0.04360	300	1	0.1	10	0	5	10000	2	0
ME_M3	30.0	350.0	0.100	200	72.0	0.30000	0.70000	0.04360	300	1	0.1	10	0	5	10000	2	0
ME_M4	5.0	162.0	0.135	200	13.5	0.51300	0.00614	0.68600	300	1	0.1	10	0	30	10000	2	0
ME_M5	5.0	162.0	0.135	200	13.5	0.51300	0.00614	0.68600	300	1	0.1	10	0	30	10000	2	0
ME_M6	70.4	598.0	0.100	200	16.3	0.65400	0.97300	0.01240	300	1	0.1	10	0	40	10000	2	0
ME_NEV	30.0	350.0	0.100	200	72.0	0.30000	0.70000	0.04360	300	1	0.1	10	0	5	10000	2	0
ME_ZLA	5.0	162.0	0.135	200	13.5	0.51300	0.00614	0.04360	300	1	0.1	10	0	30	10000	2	0
DO_M1	11.4	389.0	0.103	200	29.1	0.54500	0.69900	0.59100	500	1	0.1	10	0	50	10000	2	0
DO_M2	67.2	223.0	0.150	200	16.4	0.57500	0.97900	0.00173	500	1	0.1	10	0	30	10000	2	0

Calibrated NAM Parameters

Arda & Biala River Basins

NAM	UMAX	LMAX	CQOF	CKIF	CK12	TOF	TIF	TG	CKBF	Carea	Sy	GWLBF0	GWLBF1	Cqlow	Cklow	Csnow	T0
AR_CHE	20.5	82.5	0.564	200	10.8	0.04440	0.69300	0.38800	500	1	0.1	10	0	10	10000	2	0
AR_KRU1	45.6	397.0	0.491	200	11.8	0.21000	0.97600	0.67000	500	1	0.1	10	0	10	10000	2	0
AR_KRU2	45.6	397.0	0.491	200	11.8	0.21000	0.97600	0.67000	500	1	0.1	10	0	10	10000	2	0
AR_M0	45.6	397.0	0.491	200	11.8	0.21000	0.97600	0.67000	500	1	0.1	10	0	10	10000	2	0
AR_M1	45.6	397.0	0.491	200	11.8	0.21000	0.97600	0.67000	500	1	0.1	10	0	10	10000	2	0
AR_M2	17.6	328.0	0.600	200	11.8	0.14700	0.70000	0.65500	500	1	0.1	10	0	10	10000	2	0
AR_M3	20.5	82.5	0.564	200	10.8	0.04440	0.69300	0.38800	500	1	0.1	10	0	10	10000	2	0
AR_M4	20.5	82.5	0.564	200	10.8	0.04440	0.69300	0.38800	500	1	0.1	10	0	10	10000	2	0
AR_M5	20.5	82.5	0.564	200	10.8	0.04440	0.69300	0.38800	500	1	0.1	10	0	10	10000	2	0
AR_VAR1	17.6	328.0	0.600	200	11.8	0.14700	0.70000	0.65500	500	1	0.1	10	0	10	10000	2	0
AR_VAR2	17.6	328.0	0.600	200	11.8	0.14700	0.70000	0.65500	500	1	0.1	10	0	10	10000	2	0
BI_M	87.8	349.0	0.320	200	11.0	0.03010	0.98800	0.55000	500	1	0.1	10	0	10	10000	2	0

Calibrated NAM Parameters

Tundzha River Basin

NAM	UMAX	LMAX	CQOF	CKIF	CK12	TOF	TIF	TG	CKBF	Carea	Sy	GWLBF0	GWLBF1	Cqlow	Cklow	Csnow	T0
TU_ARA	54.7	399.0	0.400	200	71.7	0.02110	0.69100	0.31800	500	1	0.1	10	0	30	10000	2	0
TU_ASE1	10.0	400.0	0.100	200	33.5	0.46400	0.94500	0.59200	500	1	0.1	10	0	30	10000	2	0
TU_ASE2	82.2	2000.0	0.371	200	8.6	0.65700	0.94400	0.32300	500	1	0.1	10	0	10	10000	2	0
TU_BEL	10.0	400.0	0.100	200	33.5	0.46400	0.94500	0.59200	500	1	0.1	10	0	30	10000	2	0
TU_KAL	74.6	385.0	0.592	200	18.1	0.49000	0.69900	0.12900	500	1	0.1	10	0	50	10000	2	0
TU_M1	86.2	216.0	0.589	200	9.0	0.06010	0.69700	0.02250	500	1	0.1	10	0	30	10000	2	0
TU_M2	5.0	54.3	0.102	200	70.6	0.68200	0.01320	0.00261	500	1	0.1	10	0	30	10000	2	0
TU_M3	10.0	400.0	0.100	200	33.5	0.46400	0.94500	0.59200	500	1	0.1	10	0	30	10000	2	0
TU_M4	10.0	400.0	0.100	200	33.5	0.46400	0.94500	0.59200	500	1	0.1	10	0	30	10000	2	0
TU_M5	19.8	276.0	0.545	200	17.6	0.49600	0.62500	0.01020	500	1	0.1	10	0	30	10000	2	0
TU_M6	19.8	276.0	0.545	200	17.6	0.49600	0.62500	0.01020	500	1	0.1	10	0	30	10000	2	0
TU_M7	19.8	276.0	0.545	200	17.6	0.49600	0.62500	0.01020	500	1	0.1	10	0	30	10000	2	0
TU_M8	72.6	392.0	0.600	200	10.3	0.53600	0.70000	0.04880	500	1	0.1	10	0	30	10000	2	0
TU_M9	72.6	392.0	0.600	200	10.3	0.53600	0.70000	0.04880	500	1	0.1	10	0	30	10000	2	0
TU_MOC1	10.0	400.0	0.100	200	33.5	0.46400	0.94500	0.59200	500	1	0.1	10	0	30	10000	2	0
TU_MOC2	10.0	400.0	0.100	200	33.5	0.46400	0.94500	0.59200	500	1	0.1	10	0	30	10000	2	0
TU_POP1	54.7	399.0	0.400	200	71.7	0.02110	0.69100	0.31800	500	1	0.1	10	0	30	10000	2	0
TU_POP2	54.7	399.0	0.400	200	71.7	0.02110	0.69100	0.31800	500	1	0.1	10	0	30	10000	2	0
TU_SIN	86.2	216.0	0.589	200	9.0	0.06010	0.69700	0.02250	500	1	0.1	10	0	30	10000	2	0

Calibrated NAM Parameters

Maritsa River Basin

NAM	UMAX	LMAX	CQOF	CKIF	CK12	TOF	TIF	TG	CKBF	Carea	Sy	GWLBF0	GWLBF1	Cqlow	Cklow	Csnow	T0
MA_BLA	5.0	600.0	0.598	200	68.2	0.39300	0.23200	0.00013	500	1	0.1	10	0	50	10000	2	0
MA_CPI1	16.9	600.0	0.500	200	12.8	0.58700	0.82900	0.00019	500	1	0.1	10	0	50	10000	2	0
MA_CPI2	16.9	600.0	0.500	200	12.8	0.58700	0.82900	0.00019	500	1	0.1	10	0	50	10000	2	0
MA_CPL1	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_CPL2	20.9	595.0	0.500	200	14.2	0.56900	0.67200	0.00060	500	1	0.1	10	0	30	10000	2	0
MA_HAR1	29.1	218.0	0.584	200	13.0	0.17000	0.68600	0.02990	500	1	0.1	10	0	30	10000	2	0
MA_HAR2	117.0	385.0	0.581	200	16.8	0.02470	0.69900	0.24600	500	1	0.1	10	0	10	10000	2	0
MA_LUD1	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_LUD2	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_M1	29.1	218.0	0.584	200	13.0	0.17000	0.68600	0.02990	500	1	0.1	10	0	30	10000	2	0
MA_M2	41.5	598.0	0.599	200	20.0	0.16000	0.30300	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_M3	41.5	598.0	0.599	200	20.0	0.16000	0.30300	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_M4	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_M5	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_M6	153.0	586.0	0.548	200	11.9	0.91700	0.98400	0.03120	300	1	0.1	10	0	30	10000	2	0
MA_M7	153.0	586.0	0.548	200	11.9	0.91700	0.98400	0.03120	300	1	0.1	10	0	30	10000	2	0
MA_PYA1	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_PYA2	22.3	354.0	0.244	200	16.0	0.60900	0.69800	0.40800	500	1	0.1	10	0	30	10000	2	0
MA_RBA	16.9	600.0	0.500	200	12.8	0.58700	0.82900	0.00019	500	1	0.1	10	0	50	10000	2	0
MA_RDO	35.9	600.0	0.300	200	69.6	0.70000	0.70000	0.00135	500	1	0.1	10	0	30	10000	2	0
MA_ROV	5.0	600.0	0.600	200	72.0	0.33300	0.70000	0.00000	500	1	0.1	10	0	50	10000	2	0
MA_SAZ1	5.0	600.0	0.600	200	72.0	0.33300	0.70000	0.00000	500	1	0.1	10	0	50	10000	2	0
MA_SAZ2	5.0	600.0	0.600	200	72.0	0.33300	0.70000	0.00000	500	1	0.1	10	0	50	10000	2	0
MA_STA1	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_STA2	40.3	600.0	0.500	200	48.7	0.70000	0.83500	0.00025	300	1	0.1	10	0	40	10000	2	0
MA_STR1	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_STR2	7.4	143.0	0.246	200	30.5	0.55100	0.59600	0.00140	500	1	0.1	10	0	30	10000	2	0
MA_TOP1	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_TOP2	89.7	83.2	0.595	200	11.6	0.69400	0.95300	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_TOP3	89.7	83.2	0.595	200	11.6	0.69400	0.95300	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_TOP4	89.7	83.2	0.595	200	11.6	0.69400	0.95300	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_VAC1	70.1	600.0	0.500	200	64.8	0.00022	0.57700	0.00000	500	1	0.1	10	0	30	10000	2	0
MA_VAC2	65.9	599.0	0.101	200	23.8	0.66400	0.95400	0.02860	500	1	0.1	10	0	30	10000	2	0
MA_YUG	20.9	595.0	0.500	200	14.2	0.56900	0.67200	0.00060	500	1	0.1	10	0	30	10000	2	0

Initial Conditions

NAM	U	L	QOF	QIF	BF	BFLOW
AR_CHE	0.000	0.000	0.000	0.000	0.000	0.283
AR_KRU1	0.000	0.700	0.000	0.000	0.000	1.406
AR_KRU2	0.000	0.700	0.000	0.000	0.000	1.018
AR_M0	0.000	0.700	0.000	0.000	0.000	0.000
AR_M1	0.000	0.700	0.000	0.000	0.000	2.576
AR_M2	0.000	0.000	0.000	0.000	0.000	0.000
AR_M3	0.000	0.000	0.000	0.000	0.000	0.498
AR_M4	0.000	0.000	0.000	0.000	0.000	0.677
AR_M5	0.000	0.000	0.000	0.000	0.000	0.542
AR_VAR1	0.000	0.000	0.000	0.000	0.000	0.000
AR_VAR2	0.000	0.000	0.000	0.000	0.000	0.000
BI_M	0.000	0.700	0.000	0.000	0.000	0.118
MA_BLA	0.000	0.000	0.000	0.000	0.000	1.296
MA_CPI1	0.000	0.000	0.000	0.000	0.000	1.433
MA_CPI2	0.000	0.000	0.000	0.000	0.000	1.368
MA_CPL1	0.000	0.000	0.000	0.000	0.000	0.666
MA_CPL2	0.000	0.300	0.000	0.000	0.000	0.648
MA_HAR1	0.000	0.000	0.000	0.000	0.000	2.024
MA_HAR2	0.000	0.700	0.000	0.000	0.000	0.000
MA_LUD1	0.000	0.000	0.000	0.000	0.000	0.415
MA_LUD2	0.000	0.000	0.000	0.000	0.000	1.444
MA_M1	0.000	0.000	0.000	0.000	0.000	4.308
MA_M2	0.000	0.000	0.000	0.000	0.000	0.000
MA_M3	0.000	0.000	0.000	0.000	0.000	0.000
MA_M4	0.000	0.000	0.000	0.000	0.000	3.740
MA_M5	0.000	0.000	0.000	0.000	0.000	1.671
MA_M6	0.000	0.700	0.000	0.000	0.000	1.152
MA_M7	0.000	0.700	0.000	0.000	0.000	0.233
MA_PYA1	0.000	0.000	0.000	0.000	0.000	0.238
MA_PYA2	0.000	0.300	0.000	0.000	0.000	0.000
MA_RBA	0.000	0.000	0.000	0.000	0.000	0.396
MA_RDO	0.000	0.700	0.000	0.000	0.000	0.000
MA_ROV	0.000	0.000	0.000	0.000	0.000	0.589
MA_SAZ1	0.000	0.000	0.000	0.000	0.000	2.603
MA_SAZ2	0.000	0.000	0.000	0.000	0.000	2.309
MA_STA1	0.000	0.000	0.000	0.000	0.000	0.344
MA_STA2	0.000	0.300	0.000	0.000	0.000	0.500
MA_STR1	0.000	0.000	0.000	0.000	0.000	1.150
MA_STR2	0.000	0.000	0.000	0.000	0.000	0.970
MA_TOP1	0.000	0.000	0.000	0.000	0.000	0.940
MA_TOP2	0.000	0.300	0.000	0.000	0.000	0.444
MA_TOP3	0.000	0.300	0.000	0.000	0.000	0.556
MA_TOP4	0.000	0.300	0.000	0.000	0.000	0.308
MA_VAC1	0.000	0.000	0.000	0.000	0.000	0.503
MA_VAC2	0.000	0.300	0.000	0.000	0.000	2.500
MA_YUG	0.000	0.300	0.000	0.000	0.000	0.490
ME_GLA	0.000	0.300	0.000	0.000	0.000	0.404

NAM	U	L	QOF	QIF	BF	BFLOW
ME_IST1	0.000	0.300	0.000	0.000	0.000	0.673
ME_IST2	0.000	0.300	0.000	0.000	0.000	0.437
ME_KAN	0.000	0.300	0.000	0.000	0.000	0.626
ME_M1	0.000	0.300	0.000	0.000	0.000	1.286
ME_M2	0.000	0.300	0.000	0.000	0.000	0.531
ME_M3	0.000	0.300	0.000	0.000	0.000	0.762
ME_M4	0.000	0.700	0.000	0.000	0.000	0.506
ME_M5	0.000	0.700	0.000	0.000	0.000	0.355
ME_M6	0.000	0.700	0.000	0.000	0.000	1.000
ME_NEV	0.000	0.300	0.000	0.000	0.000	0.138
ME_ZLA	0.000	0.700	0.000	0.000	0.000	0.138
DO_M1	0.000	0.700	0.000	0.000	0.000	0.792
DO_M2	0.000	0.700	0.000	0.000	0.000	0.500
ST_ARK	0.000	0.700	0.000	0.000	0.000	0.084
ST_BRA	0.000	0.000	0.000	0.000	0.000	0.544
ST_DRA	0.000	0.000	0.000	0.000	0.000	0.491
ST_DZH1	0.000	0.000	0.000	0.000	0.000	0.875
ST_DZH2	0.000	0.700	0.000	0.000	0.000	1.002
ST_ELE	0.000	0.000	0.000	0.000	0.000	0.991
ST_GRA	0.000	0.000	0.000	0.000	0.000	0.555
ST_KON	0.000	0.700	0.000	0.000	0.000	0.086
ST_M1	0.000	0.000	0.000	0.000	0.000	0.000
ST_M10	0.000	0.000	0.000	0.000	0.000	0.152
ST_M2	0.000	0.000	0.000	0.000	0.000	0.000
ST_M3	0.000	0.000	0.000	0.000	0.000	0.000
ST_M4	0.000	0.000	0.000	0.000	0.000	1.466
ST_M5	0.000	0.000	0.000	0.000	0.000	0.712
ST_M6	0.000	0.000	0.000	0.000	0.000	1.696
ST_M7	0.000	0.000	0.000	0.000	0.000	0.406
ST_M8	0.000	0.700	0.000	0.000	0.000	0.056
ST_M9	0.000	0.700	0.000	0.000	0.000	0.074
ST_PIR	0.000	0.000	0.000	0.000	0.000	0.750
ST_RIL	0.000	0.000	0.000	0.000	0.000	0.907
ST_SAN	0.000	0.000	0.000	0.000	0.000	0.000
ST_SOV	0.000	0.000	0.000	0.000	0.000	0.839
ST_STR1	0.000	0.000	0.000	0.000	0.000	0.000
ST_STR2	0.000	0.000	0.000	0.000	0.000	0.000
ST_TRE	0.000	0.000	0.000	0.000	0.000	0.767
TU_ARA	0.000	0.700	0.000	0.000	0.000	0.093
TU_ASE1	0.000	0.300	0.000	0.000	0.000	0.034
TU_ASE2	0.000	0.700	0.000	0.000	0.000	0.010
TU_BEL	0.000	0.300	0.000	0.000	0.000	0.145
TU_KAL	0.000	0.700	0.000	0.000	0.000	0.251
TU_M1	0.000	0.700	0.000	0.000	0.000	0.166
TU_M2	0.000	0.300	0.000	0.000	0.000	1.736
TU_M3	0.000	0.300	0.000	0.000	0.000	0.198
TU_M4	0.000	0.300	0.000	0.000	0.000	0.118
TU_M5	0.000	0.300	0.000	0.000	0.000	0.272
TU_M6	0.000	0.300	0.000	0.000	0.000	0.989
TU_M7	0.000	0.300	0.000	0.000	0.000	0.239
TU_M8	0.000	0.700	0.000	0.000	0.000	0.233
TU_M9	0.000	0.700	0.000	0.000	0.000	0.267
TU_MOC1	0.000	0.300	0.000	0.000	0.000	0.274
TU_MOC2	0.000	0.300	0.000	0.000	0.000	0.230
TU_POP1	0.000	0.700	0.000	0.000	0.000	0.092
TU_POP2	0.000	0.700	0.000	0.000	0.000	0.050
TU_SIN	0.000	0.700	0.000	0.000	0.000	0.103

Annex E.4

Detailed Water Balance

by

Rainfall-Runoff (NAM) Catchment

Struma River Basin

	Catchment Area (km^2)	Elevation (m)	Precipitation (mm/y)	PET (mm/y)	ET (mm/y)	Total Runoff (mm/y)	Lower Base Flow (mm/y)	Overland Flow (mm/y)	Storage (mm/y)	ET rate (%)	RunOff rate (%)	Lower Base Flow rate (%)	Overland Flow rate (%)	Storage rate (%)	ET/PET	Total Runoff (m3/s)	Specific Total Runoff (l/s/km2)	Natural or Disturbed
ST_ARK	360.10	765	539	637	442	15	4	6	82	82.0	2.8	0.7	1.0	15.2	0.693	0.173	0.481	N
ST_BRA	231.05	1324	803	561	375	344	27	114	84	46.7	42.9	3.4	14.2	10.5	0.668	2.520	10.908	N
ST_DRA	177.00	885	548	622	370	152	21	10	26	67.5	27.7	3.8	1.9	4.8	0.595	0.852	4.811	N
ST_DZH1	371.51	800	556	640	390	121	18	22	45	70.1	21.8	3.2	4.0	8.2	0.609	1.428	3.844	D
ST_DZH2	398.74	1015	625	601	404	117	53	6	103	64.7	18.8	8.4	1.0	16.5	0.673	1.485	3.724	D
ST_ELE	357.20	1015	651	605	371	241	24	16	38	57.1	37.1	3.7	2.5	5.9	0.613	2.731	7.645	N
ST_GRA	235.66	1097	691	597	383	245	23	56	62	55.5	35.5	3.4	8.0	9.0	0.643	1.831	7.770	N
ST_KON	371.84	806	554	621	441	26	8	9	87	79.6	4.7	1.4	1.6	15.7	0.710	0.310	0.833	N
ST_M1	364.66	529	565	732	354	164	5	1	46	62.7	29.1	0.8	0.2	8.2	0.484	1.899	5.209	N
ST_M10	102.12	1281	640	548	326	267	64	70	48	50.9	41.7	9.9	10.9	7.4	0.595	0.864	8.463	D
ST_M2	700.50	816	661	675	362	290	8	8	9	54.8	43.8	1.3	1.2	1.3	0.537	6.433	9.183	N
ST_M3	194.47	1305	744	576	347	318	10	19	78	46.7	42.8	1.3	2.5	10.5	0.602	1.963	10.094	N
ST_M4	622.12	816	597	651	400	150	20	22	47	66.9	25.2	3.3	3.7	7.9	0.614	2.969	4.772	N
ST_M5	302.07	654	514	675	375	100	17	6	39	73.0	19.4	3.3	1.2	7.6	0.556	0.956	3.165	N
ST_M6	611.02	774	547	644	369	149	20	10	29	67.5	27.2	3.7	1.9	5.3	0.573	2.881	4.716	N
ST_M7	279.32	842	547	625	372	136	13	17	38	68.1	24.9	2.5	3.1	7.0	0.595	1.207	4.323	N
ST_M8	242.38	874	574	613	437	35	10	10	101	76.3	6.0	1.7	1.8	17.7	0.714	0.266	1.099	N
ST_M9	317.54	819	512	622	431	10	3	5	71	84.1	2.0	0.5	0.9	13.9	0.693	0.101	0.319	N
ST_PIR	508.29	1015	731	629	379	235	91	10	116	51.9	32.2	12.4	1.3	15.9	0.603	3.794	7.464	N
ST_RIL	384.90	1595	878	519	347	431	30	174	100	39.5	49.1	3.4	19.8	11.4	0.668	5.263	13.674	N
ST_SAN	140.50	1541	825	545	323	405	15	44	97	39.2	49.1	1.8	5.3	11.7	0.592	1.806	12.855	N
ST_SOV	302.12	1063	592	594	357	201	23	14	34	60.2	34.0	3.9	2.4	5.8	0.601	1.927	6.377	N
ST_STR1	360.68	584	750	721	378	312	10	17	59	50.5	41.7	1.3	2.3	7.9	0.525	3.573	9.908	N
ST_STR2	76.60	588	844	719	389	390	13	33	65	46.1	46.2	1.6	3.9	7.7	0.541	0.947	12.358	N
ST_TRE	528.50	1006	612	592	382	190	15	27	40	62.4	31.1	2.5	4.5	6.6	0.644	3.185	6.027	N

Mesta & Dospat River Basins

	Catchment Area (km^2)	Elevation (m)	Precipitation (mm/y)	PET (mm/y)	ET (mm/y)	Total Runoff (mm/y)	Lower Base Flow (mm/y)	Overland Flow (mm/y)	Storage (mm/y)	ET rate (%)	RunOff rate (%)	Lower Base Flow rate (%)	Overland Flow rate (%)	Storage rate (%)	ET/PET	Total Runoff (m3/s)	Specific Total Runoff (l/s/km2)	Natural or Disturbed
DO_M1	375.63	1273	706	563	389	256	62	25	61	55.1	36.3	8.8	3.6	8.6	0.690	3.053	8.126	N
DO_M2	237.06	1420	717	533	394	257	58	38	66	54.9	35.8	8.1	5.3	9.3	0.738	1.929	8.137	N
ME_GLA	119.64	1687	829	515	258	485	104	41	86	31.1	58.5	12.6	5.0	10.3	0.501	1.841	15.392	N
ME_IST1	199.47	1309	649	558	268	338	73	21	43	41.2	52.1	11.3	3.2	6.7	0.479	2.139	10.723	N
ME_IST2	129.59	1309	680	563	281	353	75	21	45	41.4	52.0	11.1	3.2	6.6	0.499	1.451	11.198	N
ME_KAN	236.40	1395	762	544	376	316	20	21	70	49.3	41.5	2.6	2.8	9.2	0.691	2.369	10.020	N
ME_M1	485.47	949	644	629	402	198	17	12	44	62.5	30.7	2.7	1.8	6.8	0.640	3.044	6.271	N
ME_M2	200.58	724	587	674	389	155	17	9	43	66.3	26.4	2.8	1.5	7.2	0.578	0.986	4.916	N
ME_M3	287.62	1031	770	613	396	317	20	20	57	51.5	41.2	2.6	2.6	7.3	0.647	2.889	10.044	N
ME_M4	411.39	1252	698	571	340	292	46	46	67	48.6	41.8	6.5	6.6	9.5	0.594	3.809	9.258	N
ME_M5	288.73	1360	675	546	333	279	44	44	63	49.3	41.3	6.5	6.5	9.4	0.609	2.555	8.849	N
ME_M6	261.53	1676	794	497	354	322	110	30	118	44.6	40.5	13.9	3.8	14.8	0.713	2.668	10.202	N
ME_NEV	52.12	1122	687	597	374	253	19	16	60	54.4	36.8	2.7	2.3	8.8	0.626	0.418	8.013	N
ME_ZLA	112.48	1265	529	561	287	197	36	11	45	54.2	37.3	6.7	2.1	8.5	0.511	0.703	6.254	N

Arda & Biala River Basins

	Catchment Area (km^2)	Elevation (m)	Precipitation (mm/y)	PET (mm/y)	ET (mm/y)	Total Runoff (mm/y)	Lower Base Flow (mm/y)	Overland Flow (mm/y)	Storage (mm/y)	ET rate (%)	RunOff rate (%)	Lower Base Flow rate (%)	Overland Flow rate (%)	Storage rate (%)	ET/PET	Total Runoff (m3/s)	Specific Total Runoff (l/s/km2)	Natural or Disturbed
AR_CHE	269.72	1231	836	566	379	431	13	160	27	45.3	51.5	1.5	19.1	3.2	0.670	3.682	13.652	N
AR_KRU1	390.51	397	843	718	451	378	27	222	14	53.5	44.8	3.2	26.3	1.7	0.628	4.677	11.977	N
AR_KRU2	282.85	510	891	702	452	426	28	243	13	50.7	47.8	3.2	27.2	1.4	0.644	3.823	13.516	N
AR_M0	83.18	257	552	744	433	97	2	78	23	78.3	17.5	0.3	14.2	4.1	0.581	0.255	3.068	N
AR_M1	715.55	333	580	726	441	128	20	90	10	76.1	22.1	3.4	15.6	1.7	0.608	2.910	4.067	N
AR_M2	643.64	423	658	707	401	212	2	138	46	60.9	32.1	0.3	21.0	6.9	0.568	4.317	6.708	N
AR_M3	475.06	719	707	648	339	364	11	138	4	48.0	51.4	1.6	19.5	0.6	0.524	5.479	11.533	N
AR_M4	646.09	962	746	608	385	347	10	123	15	51.5	46.5	1.4	16.5	2.0	0.632	7.114	11.010	N
AR_M5	516.52	1076	904	594	388	503	14	192	13	42.9	55.6	1.6	21.2	1.4	0.654	8.244	15.960	N
AR_VAR1	467.44	478	779	702	409	336	4	188	34	52.5	43.2	0.5	24.2	4.4	0.582	4.988	10.670	N
AR_VAR2	722.50	588	865	687	408	428	6	234	29	47.2	49.5	0.7	27.1	3.4	0.593	9.803	13.568	N
BI_M	598.77	418	702	717	452	214	10	99	36	64.4	30.5	1.4	14.1	5.1	0.631	4.064	6.787	N

Tundzha River Basin

	Catchment Area (km^2)	Elevation (m)	Precipitation (mm/y)	PET (mm/y)	ET (mm/y)	Total Runoff (mm/y)	Lower Base Flow (mm/y)	Overland Flow (mm/y)	Storage (mm/y)	ET rate (%)	RunOff rate (%)	Lower Base Flow rate (%)	Overland Flow rate (%)	Storage rate (%)	ET/PET	Total Runoff (m3/s)	Specific Total Runoff (l/s/km2)	Natural or Disturbed
TU_ARA	350.15	285	535	731	422	81	9	44	32	78.9	15.2	1.7	8.2	6.0	0.577	0.901	2.574	N
TU_ASE1	87.88	568	544	648	384	92	15	19	67	70.7	17.0	2.7	3.5	12.3	0.593	0.258	2.932	N
TU_ASE2	75.19	754	697	609	440	175	10	29	83	63.0	25.1	1.5	4.2	11.9	0.722	0.418	5.554	N
TU_BEL	371.23	656	658	628	404	176	30	28	77	61.4	26.8	4.6	4.3	11.8	0.642	2.077	5.594	N
TU_KAL	575.86	168	512	733	445	44	18	8	23	86.8	8.7	3.5	1.6	4.5	0.607	0.812	1.410	N
TU_M1	469.49	232	572	740	423	115	14	54	34	74.1	20.1	2.4	9.5	5.9	0.572	1.708	3.638	N
TU_M2	799.70	170	511	736	293	208	45	7	10	57.4	40.6	8.9	1.4	2.0	0.398	5.264	6.582	N
TU_M3	507.26	262	515	703	398	54	9	13	63	77.2	10.5	1.7	2.5	12.3	0.566	0.874	1.723	N
TU_M4	302.91	277	445	702	358	31	4	9	56	80.6	6.9	1.0	2.1	12.5	0.511	0.293	0.968	N
TU_M5	245.63	577	607	644	386	181	33	36	40	63.5	29.9	5.4	5.9	6.6	0.599	1.414	5.755	N
TU_M6	892.56	595	593	640	400	158	31	31	35	67.4	26.7	5.2	5.3	5.9	0.624	4.480	5.019	N
TU_M7	215.44	666	687	628	402	243	42	55	41	58.6	35.4	6.1	8.0	6.0	0.640	1.663	7.717	N
TU_M8	407.61	728	705	617	440	221	27	39	44	62.4	31.4	3.8	5.5	6.2	0.714	2.858	7.012	N
TU_M9	468.85	833	669	603	426	193	25	35	50	63.6	28.8	3.7	5.3	7.5	0.706	2.869	6.119	N
TU_MOC1	703.38	222	494	712	393	38	6	10	63	79.6	7.7	1.3	2.0	12.7	0.552	0.846	1.203	N
TU_MOC2	590.88	273	535	694	407	59	10	13	69	76.1	11.0	1.9	2.4	12.9	0.587	1.100	1.862	N
TU_POP1	346.10	224	537	737	432	77	9	42	28	80.5	14.3	1.7	7.8	5.2	0.586	0.843	2.435	N
TU_POP2	187.52	353	442	721	354	53	5	32	35	80.1	11.9	1.2	7.3	8.0	0.492	0.313	1.667	N
TU_SIN	293.29	252	582	728	441	112	14	52	28	75.8	19.3	2.3	8.9	4.9	0.607	1.046	3.566	N

Maritsa River Basin

	Catchment Area (km2)	Elevation (m)	Precipitation (mm/y)	PET (mm/y)	ET (mm/y)	Total Runoff (mm/y)	Lower Base Flow (mm/y)	Overland Flow (mm/y)	Storage (mm/y)	ET rate (%)	RunOff rate (%)	Lower Base Flow rate (%)	Overland Flow rate (%)	Storage rate (%)	ET/PET	Total Runoff (m3/s)	Specific Total Runoff (l/s/km2)	Natural or Disturbed
MA_BLA	642.01	188	459	725	305	96	37	11	59	66.4	20.9	8.0	2.4	12.7	0.420	1.954	3.044	N
MA_CPI1	464.14	891	634	615	383	156	69	17	96	60.3	24.5	10.9	2.7	15.1	0.622	2.292	4.937	N
MA_CPI2	443.09	1395	660	535	342	182	74	42	137	51.7	27.5	11.2	6.4	20.7	0.638	2.556	5.768	N
MA_CPL1	241.83	757	601	637	419	106	25	45	76	69.7	17.6	4.2	7.6	12.6	0.657	0.812	3.358	N
MA_CPL2	441.68	1300	743	548	373	267	53	60	103	50.2	36.0	7.1	8.1	13.8	0.682	3.744	8.476	N
MA_HAR1	761.82	234	554	736	373	159	32	65	22	67.4	28.7	5.8	11.7	3.9	0.507	3.842	5.043	N
MA_HAR2	201.07	433	627	697	452	141	4	77	35	72.0	22.4	0.7	12.3	5.6	0.648	0.897	4.462	N
MA_LUD1	150.49	308	491	716	403	45	18	13	43	82.1	9.1	3.6	2.7	8.8	0.563	0.214	1.425	N
MA_LUD2	523.94	738	561	626	409	87	24	35	65	72.8	15.5	4.2	6.3	11.7	0.653	1.445	2.759	N
MA_M1	1621.50	224	542	742	377	144	30	61	21	69.6	26.6	5.6	11.2	3.8	0.508	7.408	4.569	N
MA_M2	1603.51	218	546	731	380	107	10	22	59	69.7	19.6	1.8	4.1	10.7	0.520	5.437	3.390	N
MA_M3	2258.69	289	519	714	388	77	7	15	54	74.7	14.8	1.4	2.8	10.5	0.544	5.504	2.437	N
MA_M4	1357.30	373	522	707	415	59	20	20	47	79.6	11.3	3.8	3.8	9.1	0.588	2.545	1.875	N
MA_M5	606.53	340	505	716	401	56	19	18	48	79.5	11.0	3.8	3.5	9.5	0.560	1.068	1.761	N
MA_M6	858.53	965	698	604	436	162	44	12	101	62.4	23.2	6.3	1.8	14.5	0.721	4.404	5.130	N
MA_M7	173.41	1576	839	519	370	344	77	99	125	44.1	41.0	9.2	11.8	14.9	0.714	1.893	10.917	N
MA_PYA1	86.19	237	475	728	395	41	17	14	40	83.1	8.6	3.6	2.9	8.3	0.543	0.111	1.289	N
MA_PYA2	366.99	556	518	657	400	69	11	6	50	77.1	13.3	2.1	1.1	9.6	0.608	0.800	2.181	N
MA_RBA	70.33	1245	703	553	355	250	107	46	98	50.5	35.6	15.2	6.6	13.9	0.642	0.557	7.924	N
MA_RDO	104.52	656	624	633	427	145	32	4	53	68.4	23.2	5.2	0.6	8.5	0.674	0.479	4.582	N
MA_ROV	291.59	192	472	731	317	110	47	22	45	67.2	23.4	9.9	4.7	9.5	0.434	1.021	3.500	N
MA_SAZ1	1289.20	184	477	735	326	97	40	21	55	68.3	20.3	8.4	4.4	11.5	0.443	3.954	3.067	N
MA_SAZ2	1143.25	306	522	702	334	119	45	35	69	63.9	22.9	8.6	6.7	13.2	0.476	4.326	3.784	N
MA_STA1	124.77	367	536	711	416	72	21	25	48	77.5	13.4	3.9	4.6	9.0	0.584	0.285	2.284	N
MA_STA2	271.16	1145	685	574	391	199	68	19	94	57.1	29.1	9.9	2.7	13.8	0.682	1.714	6.322	N
MA_STR1	417.44	321	482	702	392	45	18	20	44	81.5	9.3	3.6	4.2	9.2	0.559	0.594	1.424	N
MA_STR2	969.06	819	622	607	355	221	44	30	46	57.1	35.6	7.0	4.8	7.3	0.584	6.802	7.019	N
MA_TOP1	341.20	484	534	683	401	74	21	28	60	75.0	13.8	4.0	5.2	11.2	0.587	0.798	2.337	N
MA_TOP2	487.23	768	521	630	406	80	18	37	35	77.9	15.4	3.5	7.1	6.7	0.644	1.239	2.543	N
MA_TOP3	609.06	826	558	612	419	101	21	48	38	75.1	18.1	3.7	8.5	6.8	0.685	1.954	3.209	N
MA_TOP4	337.69	1125	681	558	403	232	27	76	46	59.1	34.1	4.0	11.1	6.8	0.722	2.484	7.357	N
MA_VAC1	182.65	600	575	665	411	101	25	43	64	71.4	17.5	4.4	7.4	11.1	0.618	0.583	3.193	N
MA_VAC2	1496.50	1390	781	539	386	244	60	19	151	49.4	31.2	7.7	2.5	19.4	0.716	11.567	7.729	N
MA_YUG	333.90	1204	777	563	383	296	56	66	99	49.2	38.1	7.3	8.5	12.7	0.679	3.132	9.381	N

Annex E.5

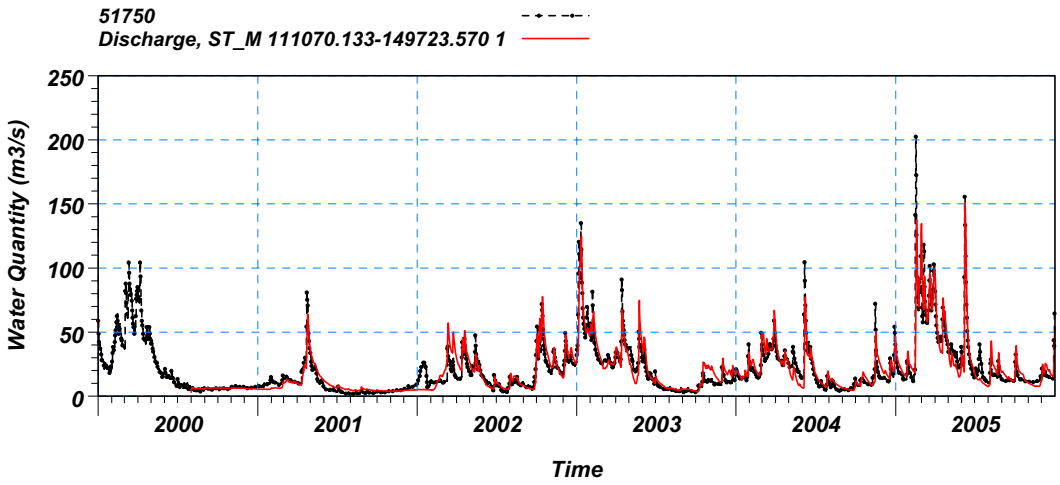
Comparison

between

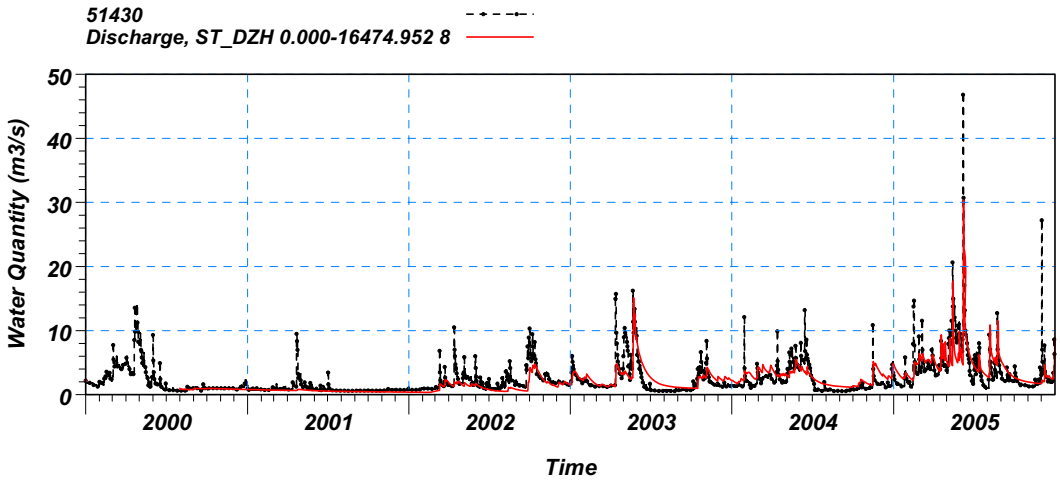
Observed and Simulated Hydrograph

Struma River

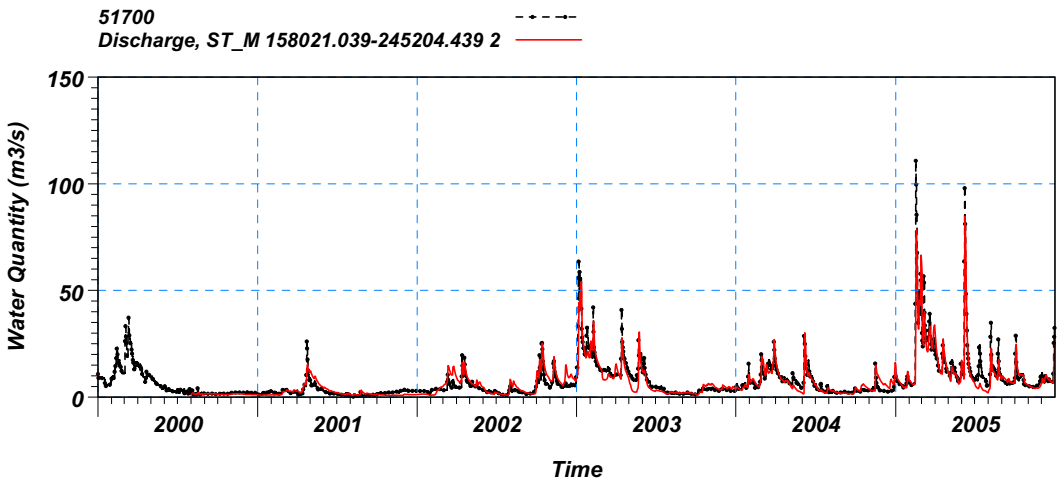
HMS 51650



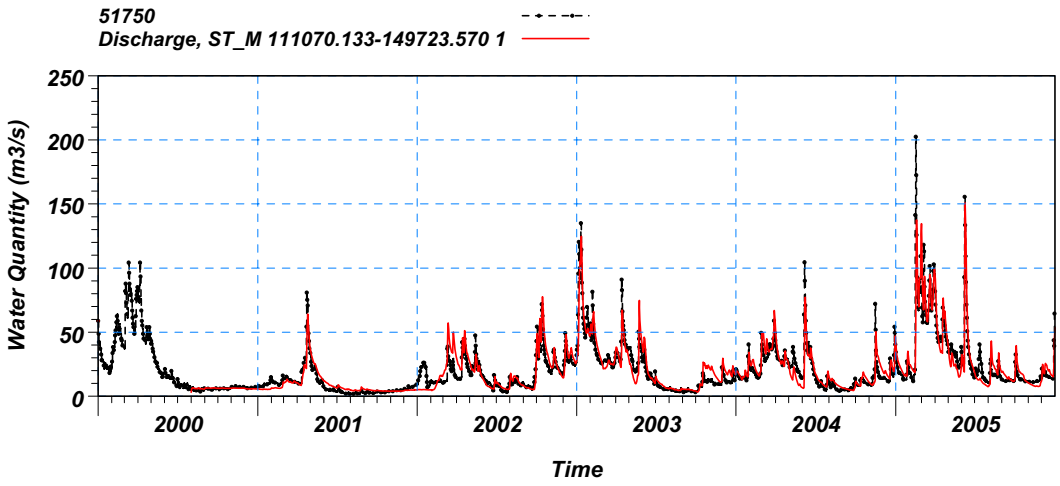
HMS 51430



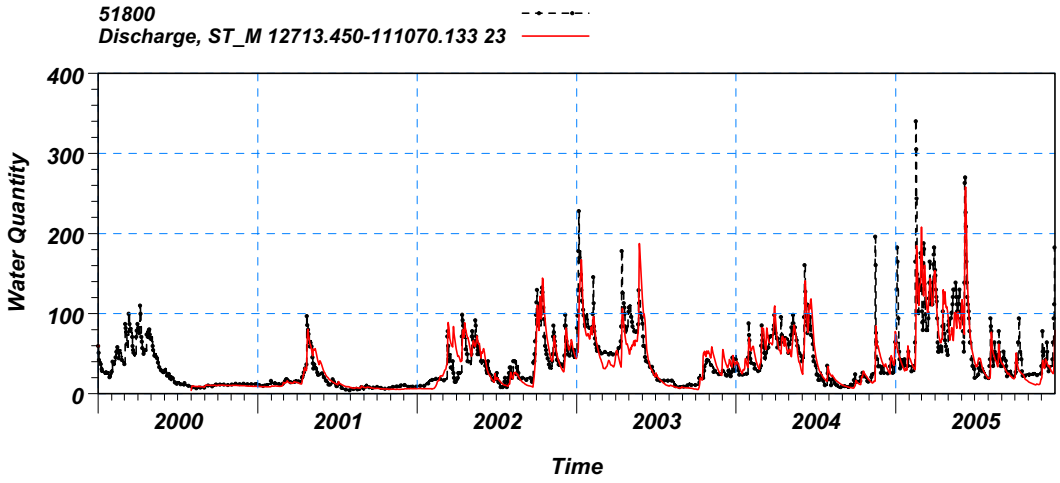
HMS 51700



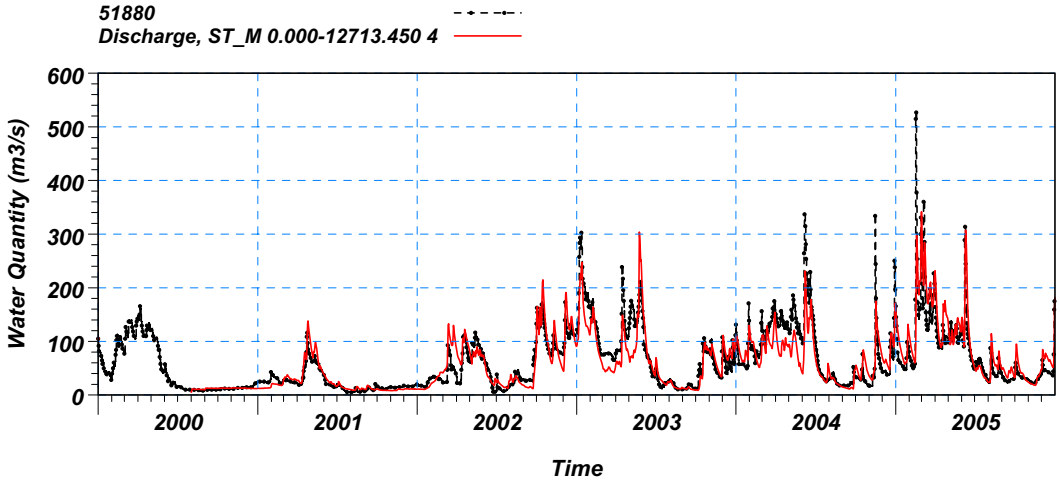
HMS 51750



HMS 51800

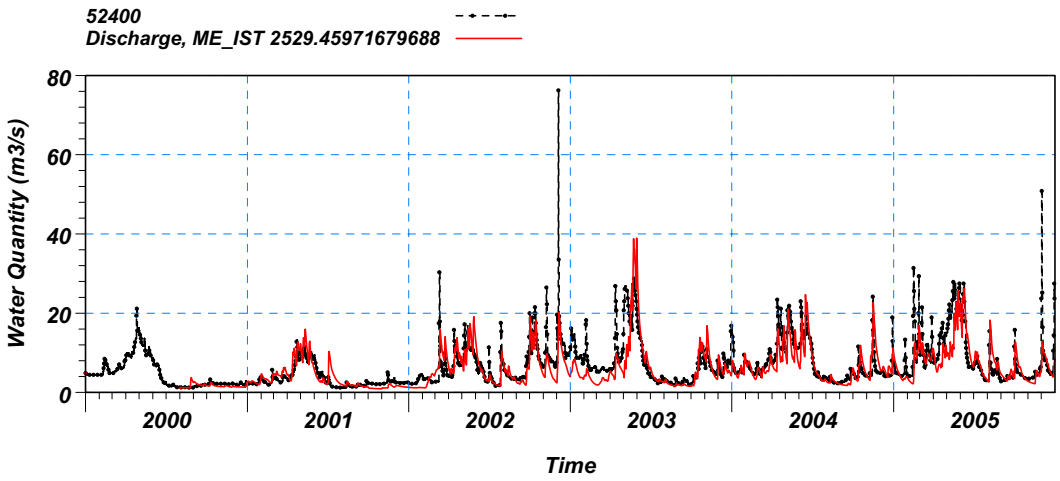


HMS 51880

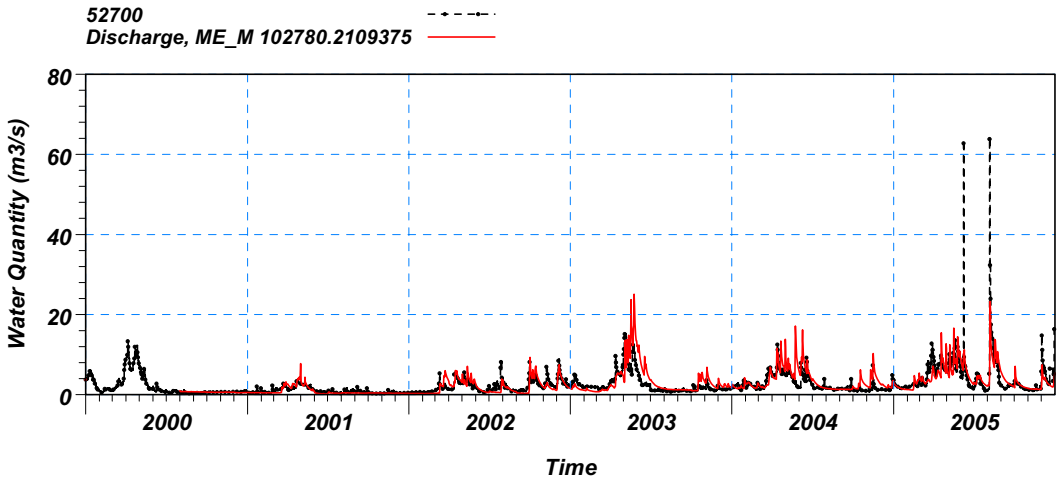


Mesta & Dospat Rivers

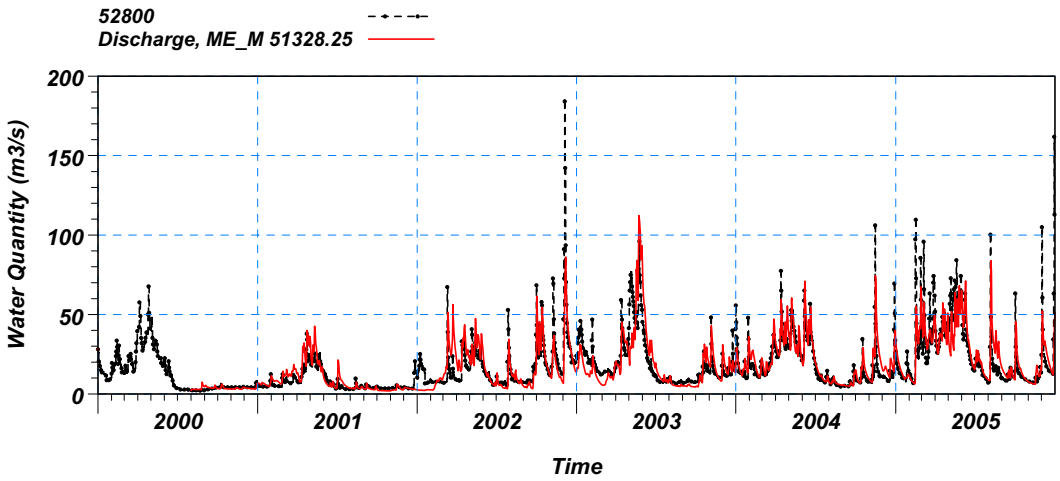
HMS 52400



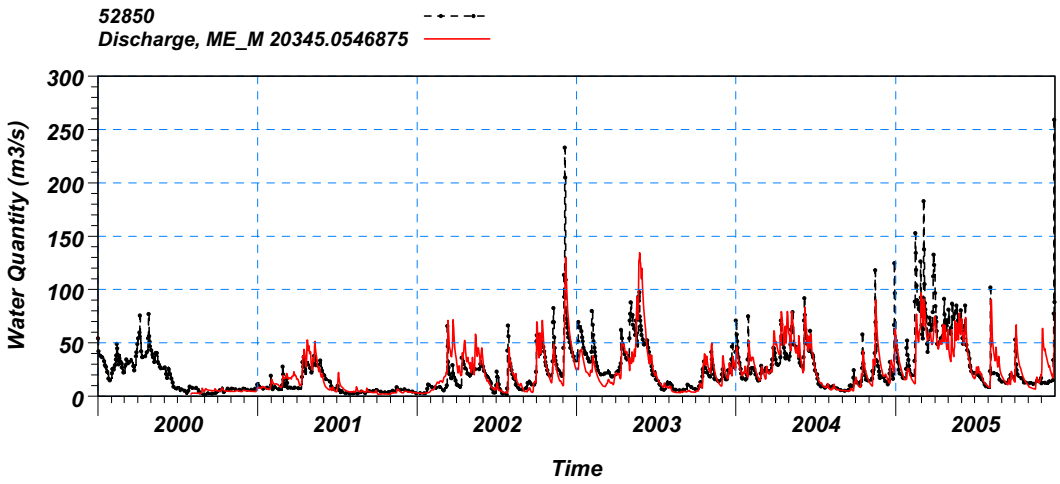
HMS 52700



HMS 52800

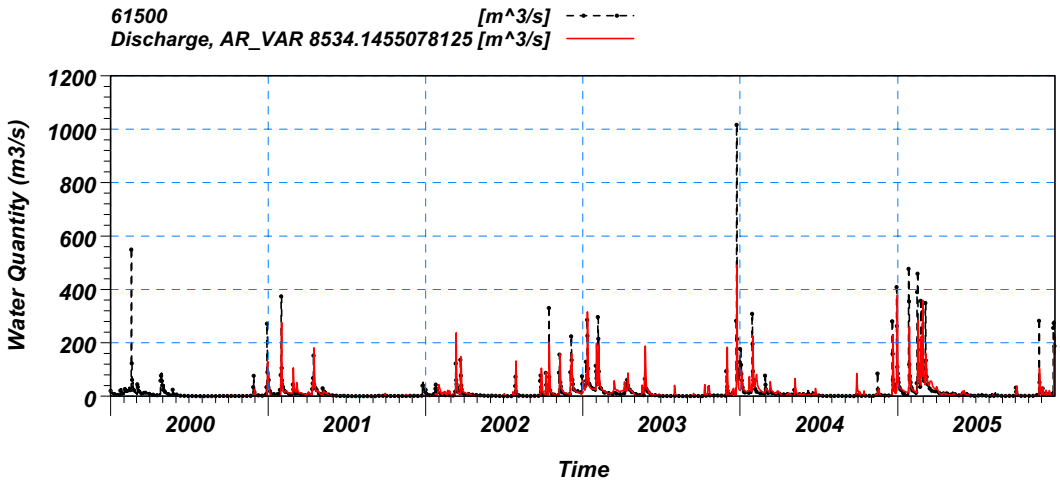


HMS 52850

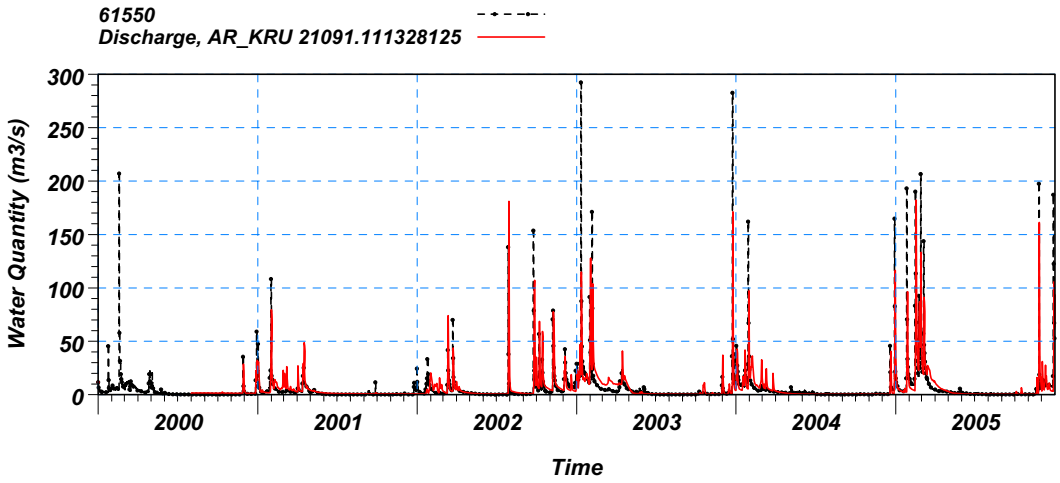

52850
Discharge, ME_M 20345.0546875
Water Quantity (m3/s)
300
250
200
150
100
50
0
2000
2001
2002
2003
2004
2005
Time

Arda & Biala Rivers

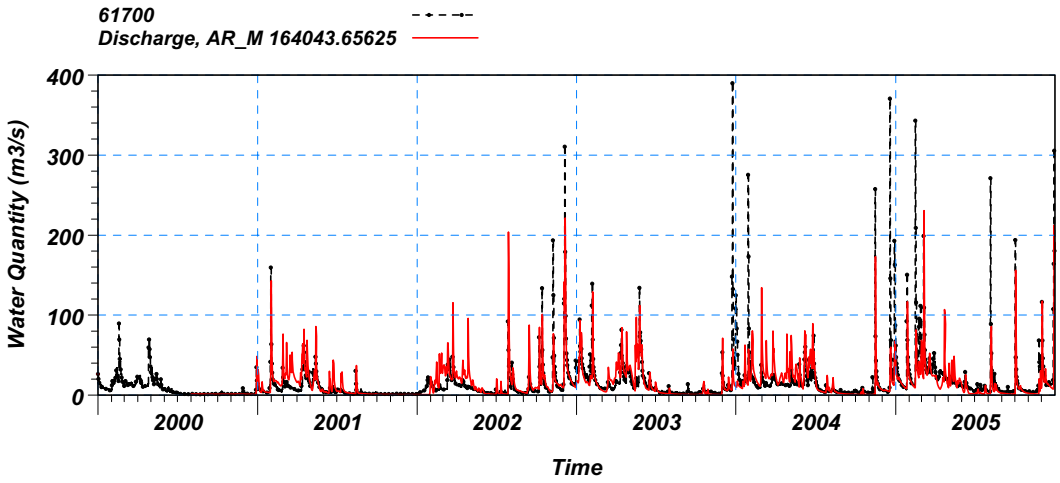
HMS 61500



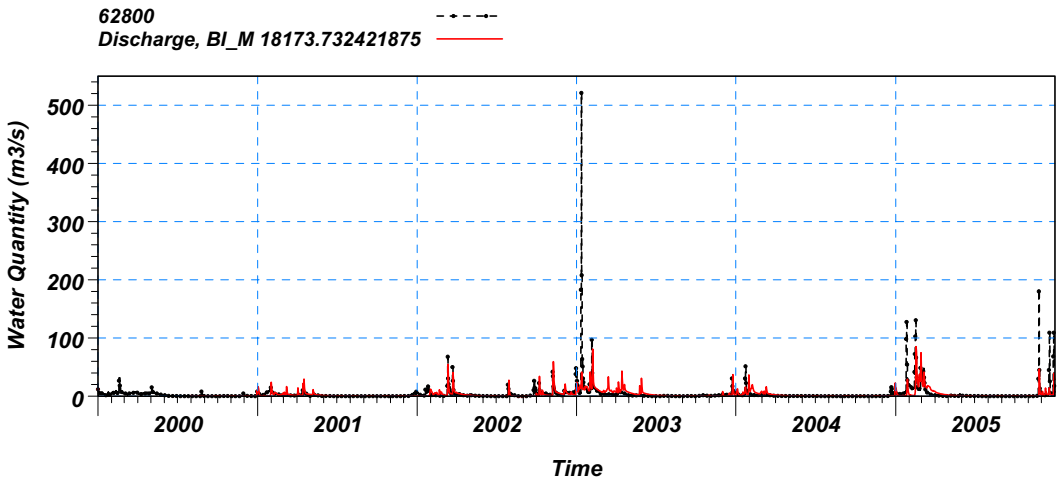
HMS 61550



HMS 61700

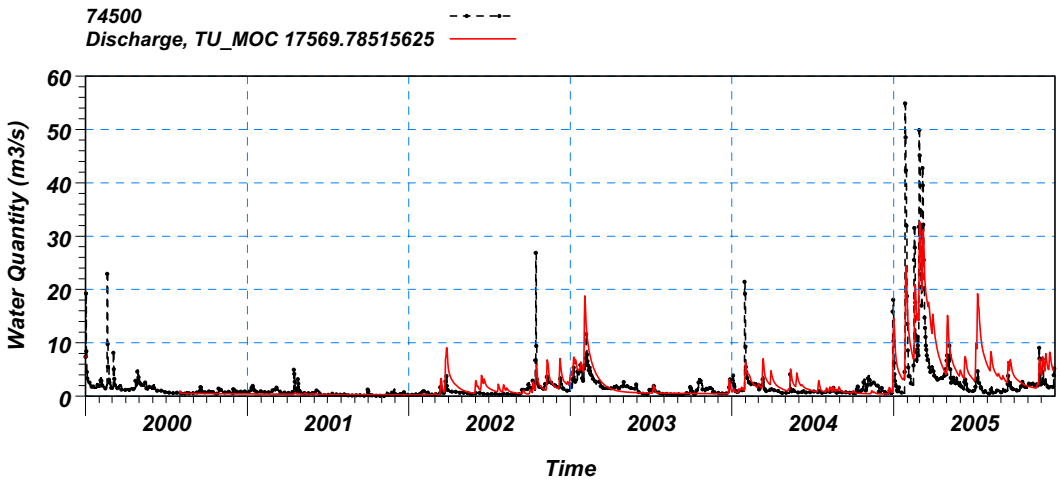


HMS 62800

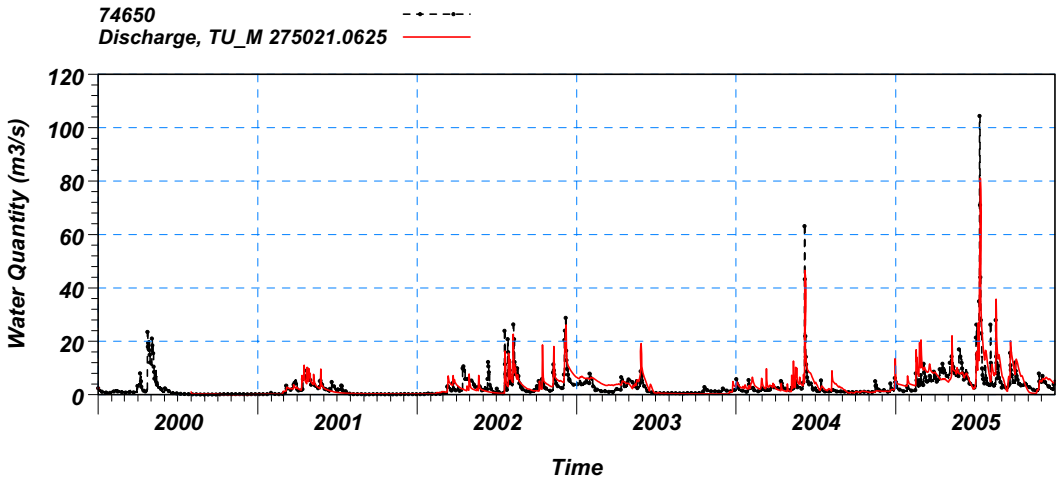

62800
Discharge, BI_M 18173.732421875
Water Quantity (m3/s)
500
400
300
200
100
0
2000
2001
2002
2003
2004
2005
Time

Tundzha River

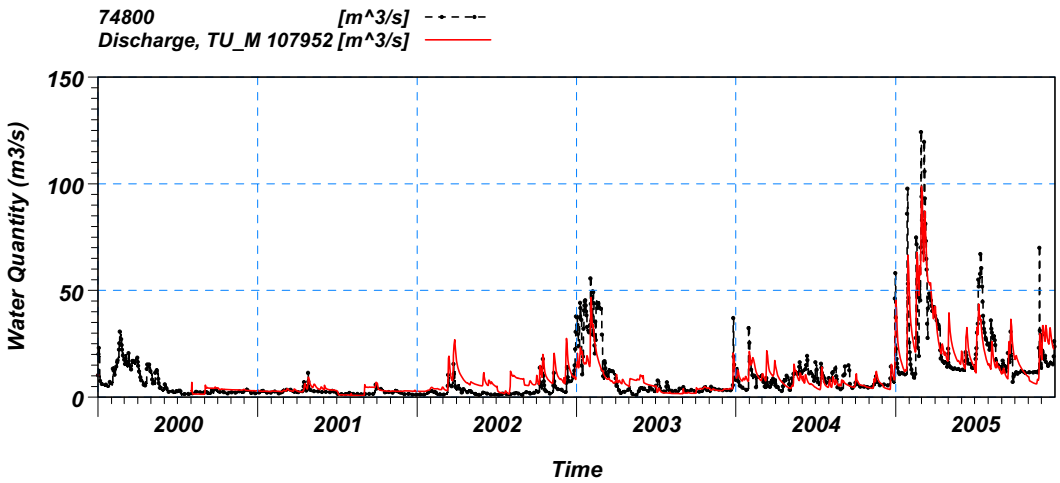
HMS 74500



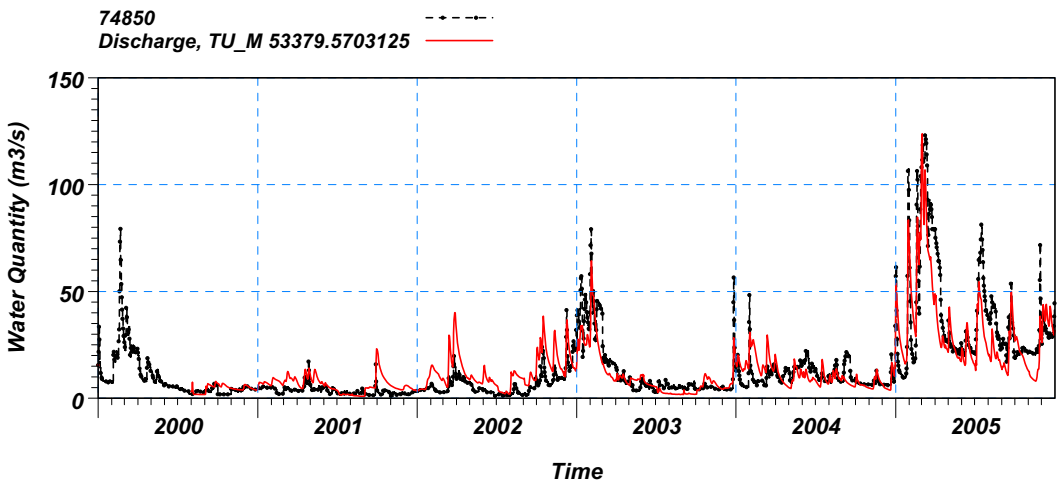
HMS 74650



HMS 74800

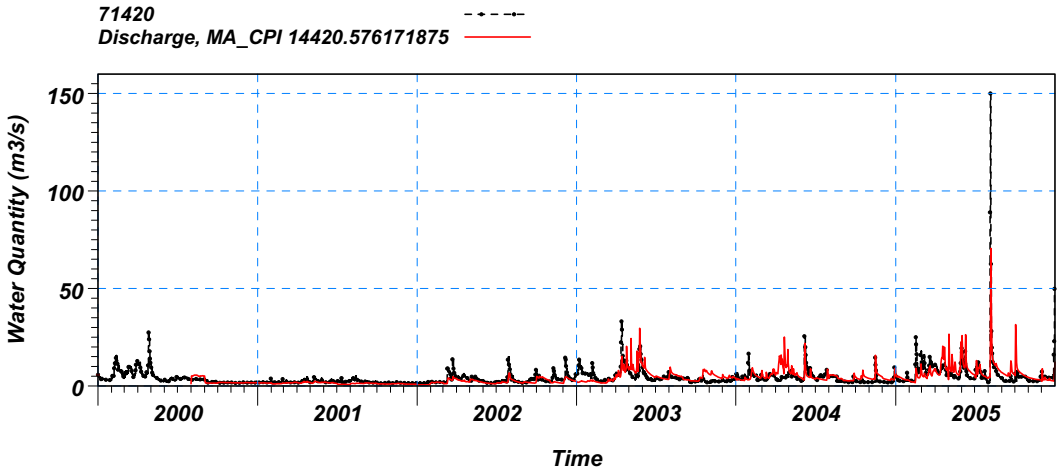


HMS 74850

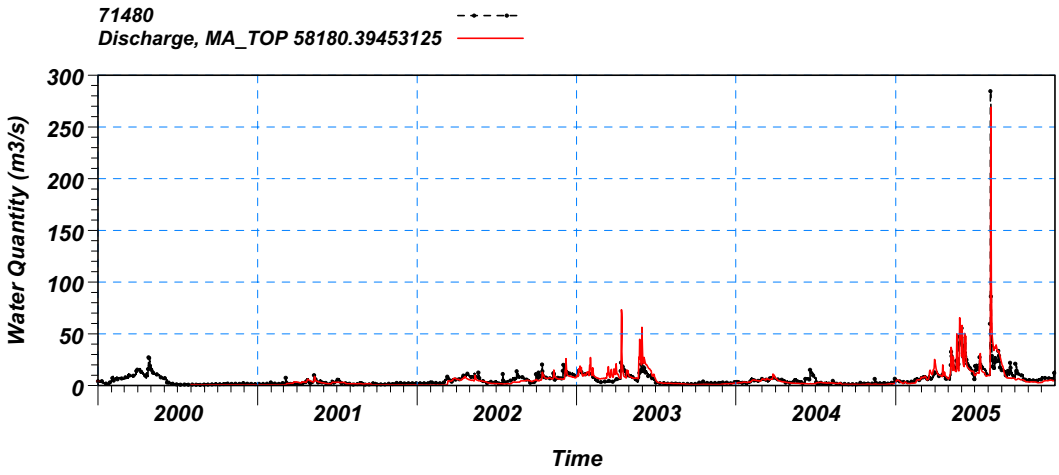

74850
Discharge, TU_M 53379.5703125
Water Quantity (m3/s)
150
100
50
0
2000
2001
2002
2003
2004
2005
Time

Maritsa River

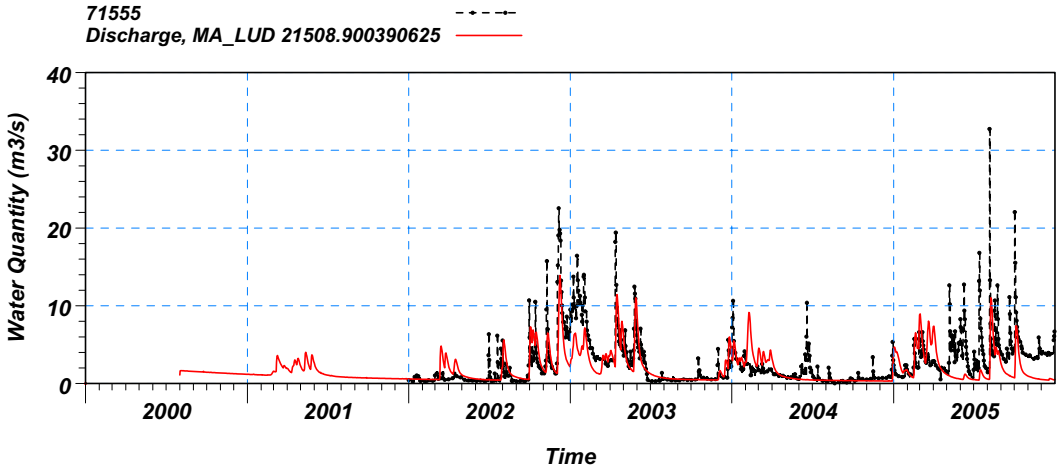
HMS 71420



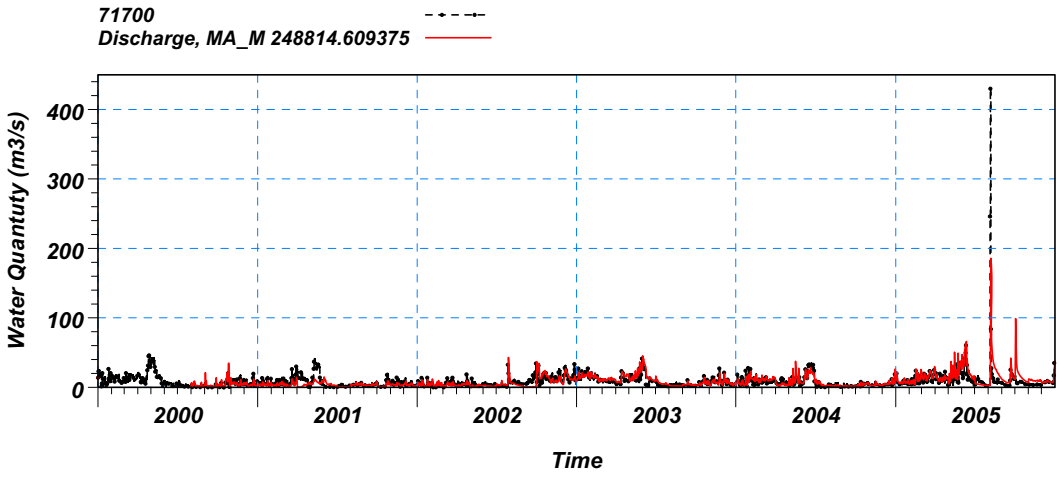
HMS 71480



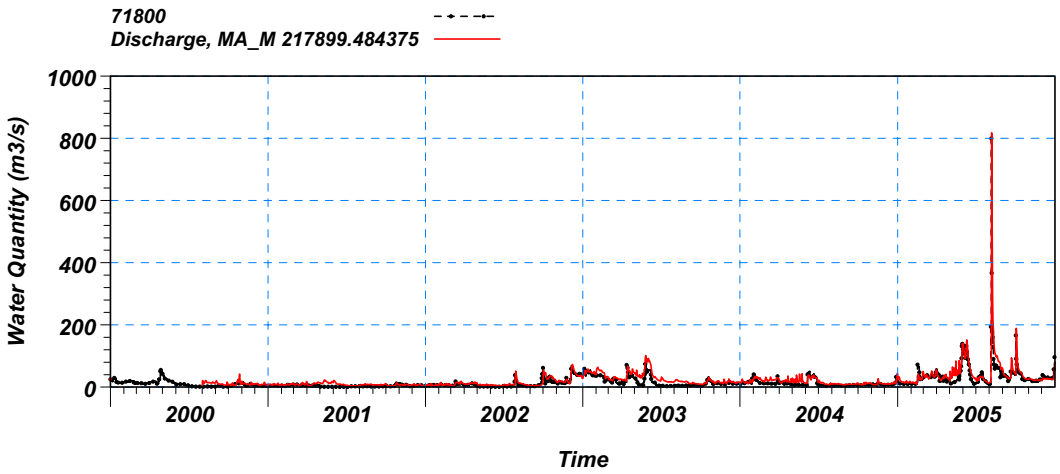
HMS 71555



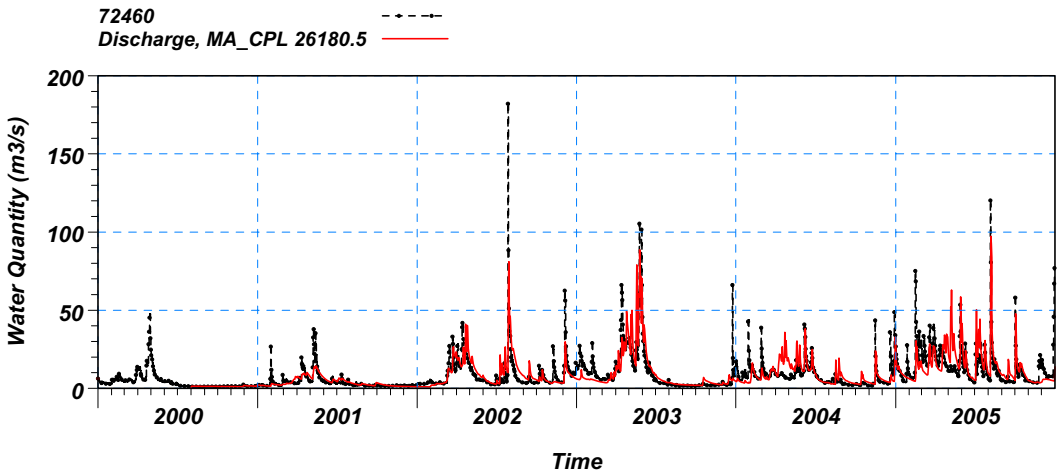
HMS 71700



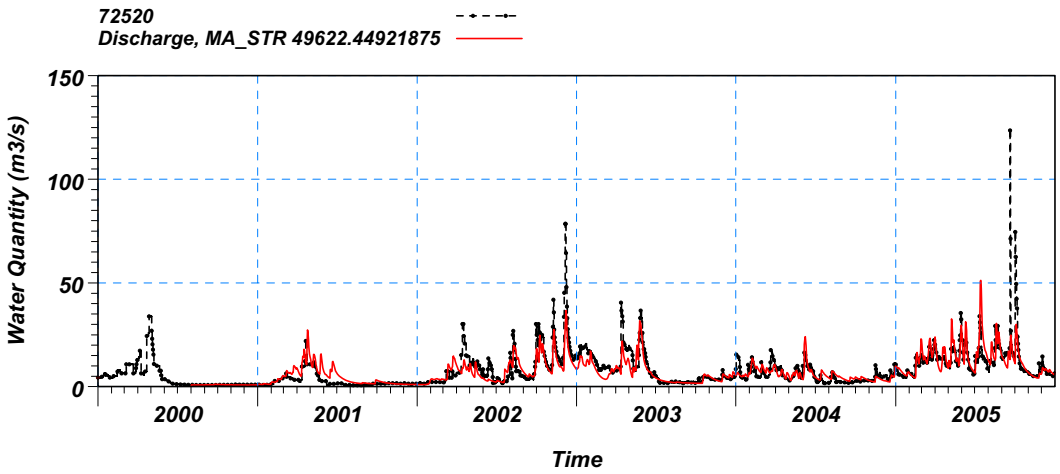
HMS 71800



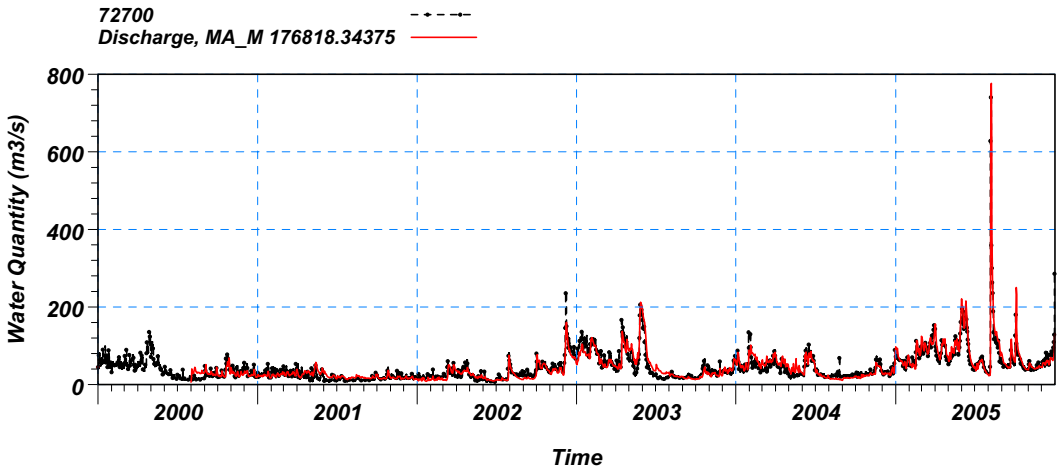
HMS 72460



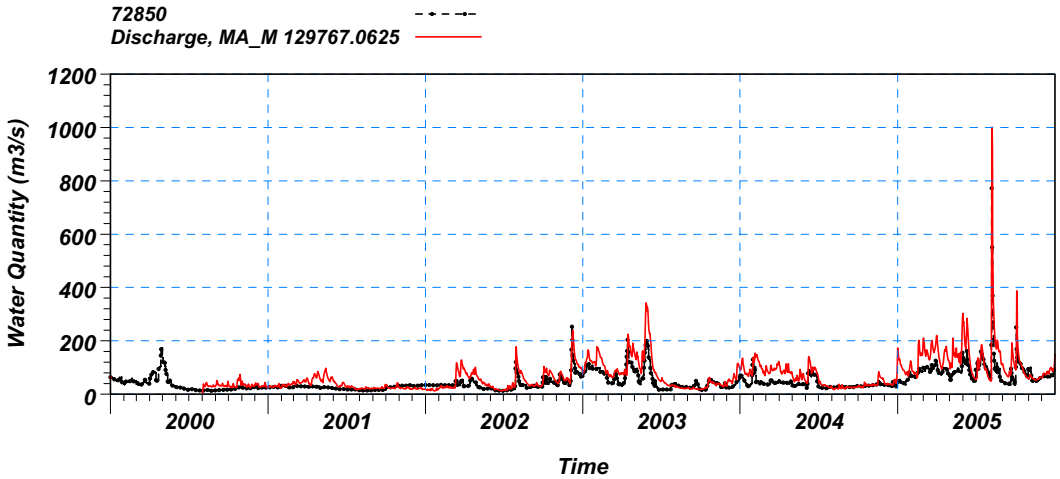
HMS 72520



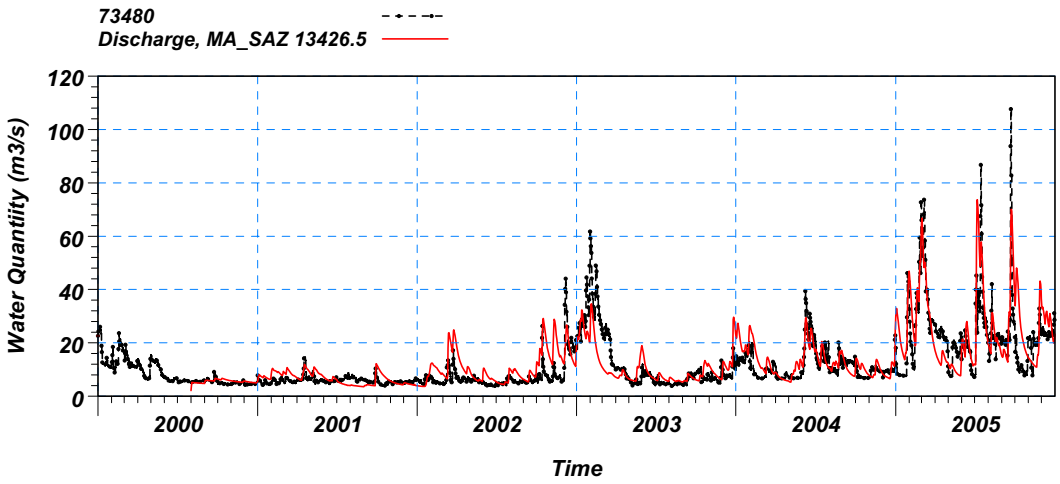
HMS 72700



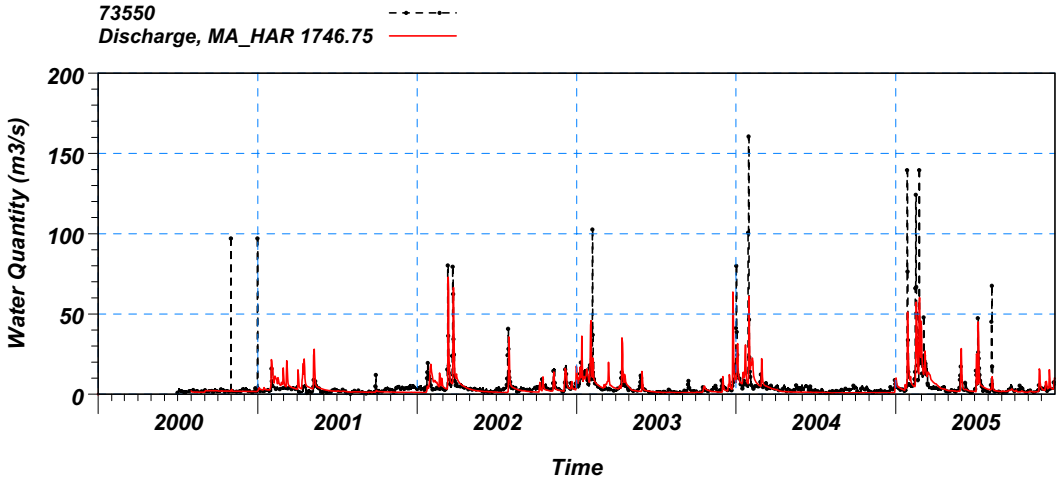
HMS 72850



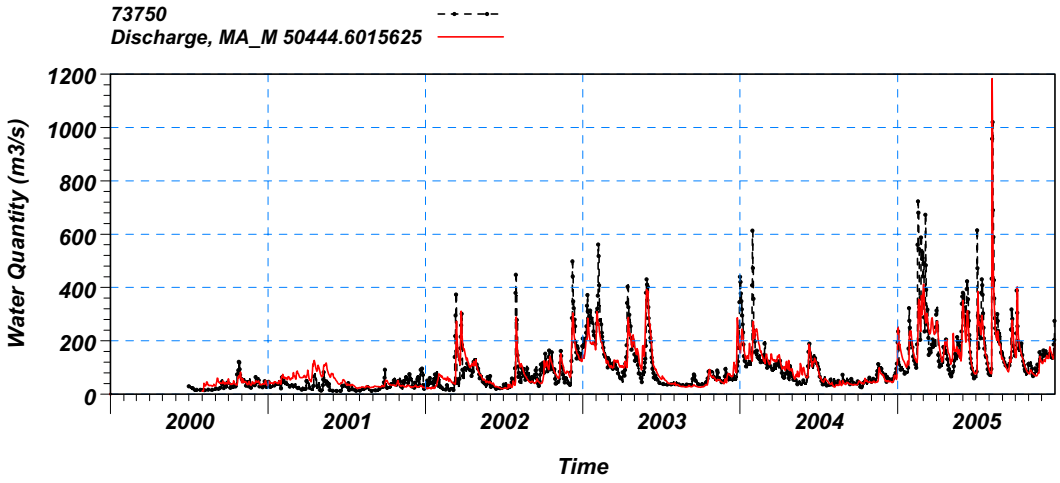
HMS 73480



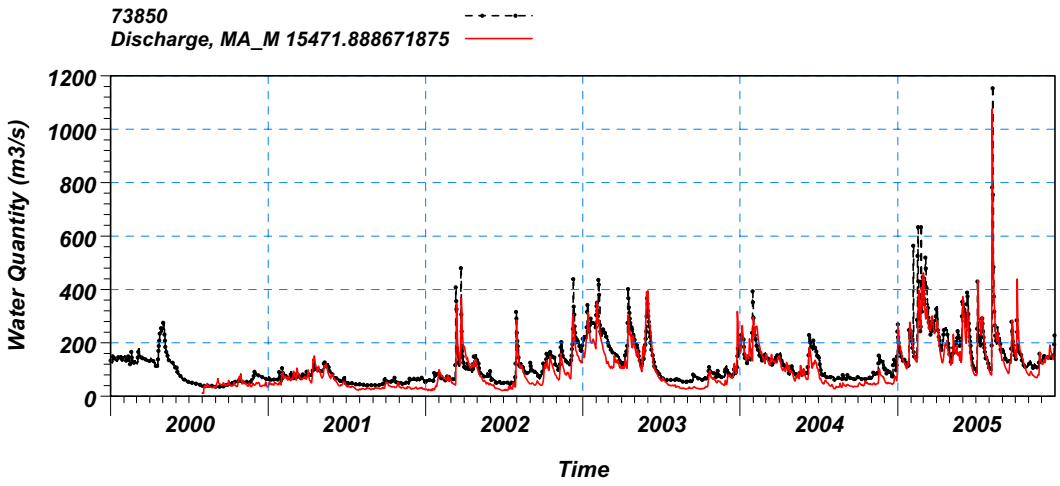
HMS 73550



HMS 73750



HMS 73850


73850
Discharge, MA_M 15471.888671875
Water Quantity (m3/s)
1200
1000
800
600
400
200
0
2000
2001
2002
2003
2004
2005
Time

Annex E.6

Pollution Load

for

MIKE 11 Water Quality Model

Domestic Point Sources (towns above 2000 P.E.)
Present situation

River	MIKE 11 ID_Name	MIKE 11 Branch	MIKE 11 Chainge	sewage reach the river (m3/s)	DO mg/l	NH4 reach the river (mg/l)	NO3-N reach the river (mg/l)	BOD reach the river (mg/l)	PO4-P reach the river (mg/l)	Part-P reach the river (mg/l)
Arda	DP001_Smolyan	AR_CHE	16852	0.077749	2.0	36	1.20	273	8.02	0.500
Arda	DP002_Krumovgrad	AR_KRU	26638.89	0.007217	2.0	37	0.81	282	8.17	0.500
Arda	DP003_Ivaylovgrad	AR_M	2945.59	0.005550	2.0	37	0.76	283	8.19	0.500
Arda	DP004_Kardzhali	AR_M	98872.16	0.077947	2.0	37	0.98	278	8.11	0.500
Arda	DP005_Ardino	AR_M	141675	0.005103	2.0	38	0.66	285	8.24	0.500
Arda	DP006_Byal izvor	AR_M	156928.1	0.002428	2.0	5	10.00	75	4.50	0.500
Arda	DP007_Chepintsi	AR_CHE	3458.62	0.002850	2.0	5	10.00	75	4.50	0.500
Arda	DP008_Madan	AR_CHE	0	0.010271	2.0	35	1.79	266	7.89	0.500
Arda	DP009_Rudozem	AR_CHE	5785.27	0.010020	2.0	2	3.28	25	1.47	0.164
Arda	DP010_Smilyan	AR_CHE	16852	0.002511	2.0	5	10.00	75	4.50	0.500
Arda	DP011_Dzhebel	AR_VAR	22841.15	0.004019	2.0	37	0.95	279	8.12	0.500
Arda	DP012_Momchilgrad	AR_VAR	14035.03	0.010897	2.0	37	0.81	282	8.18	0.500
Arda	DP013_Benkovski	AR_VAR	57214.43	0.002714	2.0	5	10.00	75	4.50	0.500
Arda	DP014_Chorbadzhiysko	AR_VAR	34962.56	0.002668	2.0	5	10.00	75	4.50	0.500
Arda	DP015_Nedelino	AR_M	161118.9	0.006772	2.0	38	0.59	287	8.26	0.500
Arda	DP016_Startsevo	AR_VAR	65892	0.003611	2.0	5	10.00	75	4.50	0.500
Arda	DP017_Zlatograd	AR_VAR	65892	0.010254	2.0	40	0.10	298	8.46	0.500
Maritsa	DP001_Korten	MA_BLA	24561	0.003203	2.0	5	10.00	75	4.50	0.500
Maritsa	DP002_Nova Zagora	MA_BLA	24561	0.050256	2.0	5	12.24	53	4.50	0.500

Maritsa	DP003_Radnevo	MA_BLA	1692.57	0.028738	2.0	5	11.80	49	4.29	0.477
Maritsa	DP004_Dorkovo	MA_MAT	14628.07	0.004933	2.0	40	0.00	300	8.50	0.500
Maritsa	DP005_Draginovo	MA_CPI	35398.45	0.007923	2.0	35	1.49	266	7.90	0.500
Maritsa	DP006_Kostandovo	MA_MAT	11217.13	0.007260	2.0	40	0.00	300	8.50	0.500
Maritsa	DP007_Rakitovo	MA_MAT	9734.48	0.013840	2.0	40	0.00	300	8.50	0.500
Maritsa	DP008_Semchinovo	MA_CPI	7655.82	0.003337	2.0	5	10.00	75	4.50	0.500
Maritsa	DP009_Septemvri	MA_M	235486.2	0.014385	2.0	40	0.00	300	8.50	0.500
Maritsa	DP010_Varvara	MA_CPI	11149.76	0.005532	2.0	5	10.00	75	4.50	0.500
Maritsa	DP011_Velingrad	MA_CPI	40500	0.039933	2.0	40	0.00	300	8.50	0.500
Maritsa	DP012_Asenovgrad	MA_CPL	18443.65	0.108408	2.0	39	0.31	293	8.37	0.500
Maritsa	DP013_Katunitsa	MA_CPL	7335.13	0.004420	2.0	5	10.00	75	4.50	0.500
Maritsa	DP014_Chepelare	MA_CPL	69398.53	0.009287	2.0	32	2.23	250	7.61	0.500
Maritsa	DP015_Harmanli	MA_M	51155.37	0.039635	2.0	37	0.83	281	8.17	0.500
Maritsa	DP016_Haskovo	MA_HAS	14934.21	0.120187	2.0	40	0.00	300	8.50	0.500
Maritsa	DP017_Uzundzhovo	MA_HAR	12919	0.002998	2.0	18	6.31	158	5.98	0.500
Maritsa	DP018_Chernogorovo	MA_LUD	16383.26	0.003897	2.0	5	10.00	75	4.50	0.500
Maritsa	DP019_Panagyurishte	MA_LUD	54942.45	0.031985	2.0	40	0.12	297	8.45	0.500
Maritsa	DP020_Popintsi	MA_LUD	38795.28	0.003692	2.0	5	10.00	75	4.50	0.500
Maritsa	DP021_Strelcha	MA_SLU	16106.49	0.007525	2.0	39	0.33	293	8.37	0.500
Maritsa	DP022_Lyubimets	MA_M	30889.69	0.013072	2.0	39	0.27	294	8.39	0.500
Maritsa	DP023_Svilengrad	MA_M	16967.6	0.038958	2.0	5	10.00	75	4.50	0.500
Maritsa	DP024_Dimitrovgrad	MA_M	94734.36	0.075544	2.0	39	0.33	293	8.37	0.500
Maritsa	DP025_Iskra	MA_M	131583.2	0.002827	2.0	5	10.00	75	4.50	0.500
Maritsa	DP026_Krepost	MA_M	90962	0.002798	2.0	5	10.00	75	4.50	0.500

Maritsa	DP027_Merichleri	MA_M	106551.8	0.003352	2.0	5	10.00	75	4.50	0.500
Maritsa	DP028_Simeonovgrad	MA_M	69129.95	0.012245	2.0	38	0.46	290	8.31	0.500
Maritsa	DP029_Yabalkovo	MA_M	108473.5	0.002792	2.0	5	10.00	75	4.50	0.500
Maritsa	DP030_Belozem	MA_M	146922	0.006973	2.0	5	10.00	75	4.50	0.500
Maritsa	DP031_Bolyartsi	MA_M	148770	0.004653	2.0	5	10.00	75	4.50	0.500
Maritsa	DP032_Brezovo	MA_M	145675.1	0.003187	2.0	5	10.00	75	4.50	0.500
Maritsa	DP033_Chalakovi	MA_M	153866.7	0.003350	2.0	5	10.00	75	4.50	0.500
Maritsa	DP034_Cherna gora	MA_M	138483	0.002965	2.0	5	10.00	75	4.50	0.500
Maritsa	DP035_Cheshnegirovo	MA_M	157234.1	0.003435	2.0	5	10.00	75	4.50	0.500
Maritsa	DP036_Chirpan	MA_M	121372.1	0.035296	2.0	37	0.82	282	8.17	0.500
Maritsa	DP037_Dalbok izvor	MA_M	132869.7	0.002893	2.0	5	10.00	75	4.50	0.500
Maritsa	DP038_Gradina	MA_M	127818.5	0.004412	2.0	5	10.00	75	4.50	0.500
Maritsa	DP039_Manole	MA_M	160215	0.004993	2.0	5	10.00	75	4.50	0.500
Maritsa	DP040_Orizovo	MA_M	139239.5	0.002848	2.0	5	10.00	75	4.50	0.500
Maritsa	DP041_Parvomay	MA_M	129938.6	0.030833	2.0	36	1.07	276	8.07	0.500
Maritsa	DP042_Rakovski	MA_M	142336	0.032573	2.0	5	10.00	75	4.50	0.500
Maritsa	DP043_Sadovo	MA_M	160714.2	0.004252	2.0	5	10.00	75	4.50	0.500
Maritsa	DP044_Stryama	MA_M	160215	0.005650	2.0	5	10.00	75	4.50	0.500
Maritsa	DP045_Topolovo	MA_M	124203	0.004893	2.0	5	10.00	75	4.50	0.500
Maritsa	DP046_Belashtitsa	MA_M	173999	0.003007	2.0	5	10.00	75	4.50	0.500
Maritsa	DP047_Branipole	MA_M	173999	0.004262	2.0	5	10.00	75	4.50	0.500
Maritsa	DP048_Brestnik	MA_M	173999	0.003010	2.0	5	10.00	75	4.50	0.500
Maritsa	DP049_Dalgo pole	MA_M	173999	0.003667	2.0	5	10.00	75	4.50	0.500
Maritsa	DP050_Graf Ignatievo	MA_M	173999	0.003358	2.0	5	10.00	75	4.50	0.500

Maritsa	DP051_Kalekovets	MA_M	173999	0.004167	2.0	5	10.00	75	4.50	0.500
Maritsa	DP052_Kaloyanovo	MA_M	173999	0.004010	2.0	5	10.00	75	4.50	0.500
Maritsa	DP053_Kostievo	MA_M	188251.8	0.002978	2.0	5	10.00	75	4.50	0.500
Maritsa	DP054_Krumovo	MA_M	173999	0.005630	2.0	5	10.00	75	4.50	0.500
Maritsa	DP055_Kuklen	MA_M	173999	0.009855	2.0	5	10.00	75	4.50	0.500
Maritsa	DP056_Markovo	MA_M	182104.1	0.003880	2.0	5	10.00	75	4.50	0.500
Maritsa	DP057_Parvenets	MA_M	182515.7	0.006008	2.0	5	10.00	75	4.50	0.500
Maritsa	DP058_Plovdiv	MA_M	177574.2	0.925906	2.0	9	11.25	75	4.90	0.500
Maritsa	DP059_Rogosh	MA_M	173999	0.005213	2.0	5	10.00	75	4.50	0.500
Maritsa	DP060_Saedinenie	MA_M	187642	0.010503	2.0	5	10.00	75	4.50	0.500
Maritsa	DP061_Skutare	MA_M	168728.5	0.003823	2.0	5	10.00	75	4.50	0.500
Maritsa	DP062_Stamboliyski	MA_M	197403.3	0.025094	2.0	37	0.88	280	8.15	0.500
Maritsa	DP063_Stroevo	MA_M	181881	0.003017	2.0	5	10.00	75	4.50	0.500
Maritsa	DP064_Tsalapitsa	MA_M	195162.4	0.007460	2.0	16	6.72	149	5.81	0.500
Maritsa	DP065_Tsaratsovo	MA_M	181881	0.003692	2.0	5	10.00	75	4.50	0.500
Maritsa	DP066_Voyvodinovo	MA_M	173999	0.003363	2.0	5	10.00	75	4.50	0.500
Maritsa	DP067_Yagodovo	MA_M	173999	0.005505	2.0	5	10.00	75	4.50	0.500
Maritsa	DP068_Aleko	MA_M	220343.3	0.004990	2.0	5	10.00	75	4.50	0.500
Maritsa	DP069_Bratanitsa	MA_M	220877	0.003728	2.0	5	10.00	75	4.50	0.500
Maritsa	DP070_Glavinitsa	MA_M	219847.3	0.004363	2.0	5	10.00	75	4.50	0.500
Maritsa	DP071_Ivaylo	MA_M	220877	0.005332	2.0	5	10.00	75	4.50	0.500
Maritsa	DP072_Kovachevo	MA_M	229606	0.004005	2.0	5	10.00	75	4.50	0.500
Maritsa	DP073_Malo Konare	MA_M	209155	0.007795	2.0	5	10.00	75	4.50	0.500
Maritsa	DP074_Mokrishte	MA_M	220513.2	0.003483	2.0	5	10.00	75	4.50	0.500

Maritsa	DP075_Ognyanovo	MA_M	208539.6	0.004340	2.0	5	10.00	75	4.50	0.500
Maritsa	DP076_Pazardzhik	MA_M	218611.6	0.288777	2.0	33	1.90	257	7.74	0.500
Maritsa	DP077_Sinitovo	MA_M	213088.7	0.003595	2.0	5	10.00	75	4.50	0.500
Maritsa	DP078_Vinogradets	MA_M	230704	0.002925	2.0	5	10.00	75	4.50	0.500
Maritsa	DP079_Zvanichevo	MA_M	224913.3	0.003407	2.0	5	10.00	75	4.50	0.500
Maritsa	DP080_Belovo	MA_M	248077.7	0.006825	2.0	40	0.07	298	8.47	0.500
Maritsa	DP081_Dolna banya	MA_M	277079.1	0.007763	2.0	40	0.00	300	8.50	0.500
Maritsa	DP082_Kostenets /town/	MA_M	268595.2	0.006785	2.0	5	10.00	75	4.50	0.500
Maritsa	DP083_Kostenets /village/	MA_M	270896.7	0.015345	2.0	40	0.10	298	8.46	0.500
Maritsa	DP084_Vetren	MA_M	241550.6	0.005937	2.0	8	9.20	93	4.82	0.500
Maritsa	DP085_Trud	MA_PYA	9968.16	0.006603	2.0	5	10.00	75	4.50	0.500
Maritsa	DP086_Galabovo	MA_SAZ	14217.57	0.014358	2.0	39	0.18	296	8.43	0.500
Maritsa	DP087_Obruchishte	MA_SAZ	21357.83	0.003360	2.0	5	10.00	75	4.50	0.500
Maritsa	DP088_Hrishteni	MA_BED	11264.99	0.002992	2.0	5	10.00	75	4.50	0.500
Maritsa	DP089_Stara Zagora	MA_BED	12665	0.314400	2.0	39	0.33	292	8.37	0.500
Maritsa	DP090_Isperihovo	MA_STA	14574.45	0.003263	2.0	31	2.48	244	7.51	0.500
Maritsa	DP091_Kurtovo konare	MA_STA	5500	0.004633	2.0	5	10.00	75	4.50	0.500
Maritsa	DP092_Novo selo	MA_STA	4276.56	0.003967	2.0	5	10.00	75	4.50	0.500
Maritsa	DP093_Batak	MA_STA	21500	0.006303	2.0	40	0.00	300	8.50	0.500
Maritsa	DP094_Bratsigovo	MA_STA	21500	0.007628	2.0	40	0.00	300	8.50	0.500
Maritsa	DP095_Nova mahala	MA_STA	21500	0.003555	2.0	40	0.00	300	8.50	0.500
Maritsa	DP096_Peshtera	MA_STA	21500	0.039848	2.0	40	0.00	300	8.50	0.500
Maritsa	DP097_Hisarya	MA_STR	38455.44	0.012998	2.0	44	0.29	172	8.38	0.500
Maritsa	DP098_Razhevo Konare	MA_STR	24496.92	0.002852	2.0	5	10.00	75	4.50	0.500

Maritsa	DP099_Banya	MA_STR	46000	0.006202	2.0	17	6.60	152	5.86	0.500
Maritsa	DP100_Dabene	MA_STR	53531	0.002922	2.0	5	10.00	75	4.50	0.500
Maritsa	DP101_Hristo Danovo	MA_STR	53531	0.002835	2.0	5	10.00	75	4.50	0.500
Maritsa	DP102_Karavelovo	MA_STR	53531	0.002877	2.0	5	10.00	75	4.50	0.500
Maritsa	DP103_Karlovo	MA_SST	9410.44	0.051640	2.0	35	1.50	266	7.90	0.500
Maritsa	DP104_Rozino	MA_STR	53531	0.006630	2.0	17	6.60	152	5.86	0.500
Maritsa	DP105_Sopot	MA_STR	53531	0.015925	2.0	40	0.00	300	8.50	0.500
Maritsa	DP106_Vasil Levski	MA_STR	50436.47	0.003003	2.0	5	10.00	75	4.50	0.500
Maritsa	DP107_Ihtiman	MA_TOP	49699	0.028102	2.0	6	12.05	59	4.64	0.500
Maritsa	DP108_Vakarel	MA_TOP	65003.92	0.003618	2.0	38	0.54	288	8.29	0.500
Maritsa	DP109_Chelopech	MA_TOP	86212.52	0.002900	2.0	40	0.00	300	8.50	0.500
Maritsa	DP110_Mirkovo	MA_TOP	79043.15	0.002988	2.0	40	0.00	300	8.50	0.500
Maritsa	DP111_Pirdop	MA_TOP	92700	0.013398	2.0	40	0.00	300	8.50	0.500
Maritsa	DP112_Zlatitsa	MA_TOP	91696.99	0.008885	2.0	39	0.22	295	8.41	0.500
Maritsa	DP113_Anton	MA_TOP	92700	0.002913	2.0	40	0.00	300	8.50	0.500
Maritsa	DP114_Koprivshtitsa	MA_TOP	92700	0.004212	2.0	40	0.00	300	8.50	0.500
Maritsa	DP115_Brestovitsa	MA_VAC	4006.45	0.006277	2.0	5	10.00	75	4.50	0.500
Maritsa	DP116_Krichim	MA_VAC	18580.52	0.014448	2.0	40	0.00	300	8.50	0.500
Maritsa	DP117_Perushtitsa	MA_VAC	14114.25	0.008907	2.0	40	0.00	300	8.50	0.500
Maritsa	DP118_Ustina	MA_VAC	16434.3	0.003935	2.0	5	10.00	75	4.50	0.500
Maritsa	DP119_Yoakim Gruevo	MA_VAC	5126.2	0.004952	2.0	5	10.00	75	4.50	0.500
Maritsa	DP120_Borino	MA_VAC	24800	0.004347	2.0	39	0.31	293	8.38	0.500
Maritsa	DP121_Devin	MA_VAC	24800	0.011943	2.0	40	0.00	300	8.50	0.500
Maritsa	DP122_Laki	MA_VAC	24800	0.004358	2.0	38	0.55	288	8.28	0.500

Tundzha	DP001_Sliven	TU_ASE	11358.99	0.139297	2.0	5	12.50	50	4.50	0.500
Tundzha	DP002_Sborishte	TU_M	171250	0.003225	2.0	5	10.00	75	4.50	0.500
Tundzha	DP003_Shivachevo	TU_M	171250	0.006613	2.0	5	10.00	75	4.50	0.500
Tundzha	DP004_Kermen	TU_SIN	628	0.003403	2.0	5	10.00	75	4.50	0.500
Tundzha	DP005_Elhovo	TU_M	54324.26	0.023344	2.0	36	1.06	276	8.08	0.500
Tundzha	DP006_Kukorevo	TU_M	101816	0.002882	2.0	5	10.00	75	4.50	0.500
Tundzha	DP007_Tenevo	TU_M	91307.25	0.002995	2.0	5	10.00	75	4.50	0.500
Tundzha	DP008_Yambol	TU_M	109065.4	0.165238	2.0	7	9.51	86	4.69	0.500
Tundzha	DP009_Krushare	TU_M	136258.6	0.003508	2.0	5	10.00	75	4.50	0.500
Tundzha	DP010_Samuilovo	TU_M	145516	0.003618	2.0	5	10.00	75	4.50	0.500
Tundzha	DP011_Sotirya	TU_M	124427	0.002887	2.0	5	10.00	75	4.50	0.500
Tundzha	DP012_Topolchane	TU_M	124427	0.004983	2.0	5	11.35	61	4.50	0.500
Tundzha	DP013_Zhelyu voyvoda	TU_M	124427	0.004443	2.0	5	10.00	75	4.50	0.500
Tundzha	DP014_Panicherevo	TU_M	199935.7	0.002827	2.0	5	10.00	75	4.50	0.500
Tundzha	DP015_Tvarditsa	TU_M	203866.9	0.009630	2.0	5	10.00	75	4.50	0.500
Tundzha	DP016_Gurkovo	TU_M	206335.7	0.004807	2.0	5	10.00	75	4.50	0.500
Tundzha	DP017_Maglizh	TU_M	237028.8	0.005800	2.0	5	10.00	75	4.50	0.500
Tundzha	DP018_Nikolaevo	TU_M	211195.3	0.004735	2.0	5	10.00	75	4.50	0.500
Tundzha	DP019_Ovoshtnik	TU_M	251391.5	0.002970	2.0	5	10.00	75	4.50	0.500
Tundzha	DP020_Yagoda	TU_M	238223.8	0.004677	2.0	5	10.00	75	4.50	0.500
Tundzha	DP021_Buzovgrad	TU_M	257692.9	0.004155	2.0	5	10.00	75	4.50	0.500
Tundzha	DP022_Enina	TU_M	258567.7	0.004517	2.0	5	10.00	75	4.50	0.500
Tundzha	DP023_Kazanlak	TU_M	258421	0.105995	2.0	5	12.33	52	4.50	0.500
Tundzha	DP024_Koprinka	TU_M	264063.6	0.004778	2.0	5	10.00	75	4.50	0.500

Tundzha	DP025_Kran	TU_M	260241.6	0.006092	2.0	5	10.00	75	4.50	0.500
Tundzha	DP026_Sheynovo	TU_M	264938.7	0.003487	2.0	5	10.00	75	4.50	0.500
Tundzha	DP027_Aleksandrovo	TU_M	284332.9	0.002897	2.0	5	10.00	75	4.50	0.500
Tundzha	DP028_Kalofer	TU_M	295000	0.005873	2.0	30	3.00	233	7.30	0.500
Tundzha	DP029_Pavel banya	TU_M	274077.2	0.006121	2.0	5	12.07	54	4.50	0.500
Tundzha	DP030_Straldzha	TU_MOC	19519.69	0.010008	2.0	5	10.00	75	4.50	0.500
Tundzha	DP031_Zimnitsa	TU_MOC	10909.2	0.003145	2.0	5	10.00	75	4.50	0.500
Tundzha	DP032_Karnobat	TU_MOC	45890	0.040160	2.0	33	1.89	257	7.74	0.500
Tundzha	DP033_Sungurlare	TU_MOC	45890	0.006090	2.0	5	10.00	75	4.50	0.500
Tundzha	DP034_Topolovgrad	TU_SIN	628	0.010238	2.0	39	0.32	293	8.37	0.500
River	**MIKE 11 ID_Name**	**MIKE 11**	**MIKE 11**	**sewage**	**DO**	**NH4-N**	**N03-N**	**BOD**	**PO4-P**	**Part-P**
Dospat	DP006_Pletena	ME_M	14800	0.00179	2	20.70	7.80	185	7.08	0.60
Dospat	DP007_Satovcha	ME_M	14800	0.00209	2	20.70	7.80	185	7.08	0.60
Dospat	DP022_Barutin	DO_M	23472	0.00182	2	48.00	0.00	360	10.20	0.60
Dospat	DP023_Dospat	DO_M	28850	0.00248	2	48.00	0.00	360	10.20	0.60
Dospat	DP024_Kochan	DO_M	9046	0.00283	2	20.70	7.80	185	7.08	0.60
Dospat	DP025_Zmeitsa	DO_M	26019	0.00156	2	25.32	6.48	214	7.61	0.60
Dospat	DP026_Sarnitsa	DO_M	27621	0.00334	2	48.00	0.00	360	10.20	0.60
Mesta	DP001_Bansko	ME_IST	6745	0.00819	2	52.00	0.00	390	11.05	0.65
Mesta	DP002_Banya	ME_IST	4089	0.00267	2	48.00	0.00	360	10.20	0.60
Mesta	DP003_Bachevo	ME_IST	6745	0.00155	2	48.00	0.00	360	10.20	0.60
Mesta	DP004_Razlog	ME_IST	6745	0.01161	2	60.61	0.00	455	12.88	0.76
Mesta	DP005_Ablanitsa	ME_M	16033	0.00242	2	37.50	3.00	293	9.00	0.60
Mesta	DP008_Slashten	ME_M	5443	0.00185	2	20.70	7.80	185	7.08	0.60

Mesta	DP009_Valkosel	ME_M	11464	0.00233	2	20.70	7.80	185	7.08	0.60
Mesta	DP010_Dabnitsa	ME_M	28677	0.00155	2	24.90	6.60	212	7.56	0.60
Mesta	DP011_Debren	ME_M	30113	0.00209	2	25.74	6.36	217	7.66	0.60
Mesta	DP012_Garmen	ME_M	35239	0.00161	2	24.90	6.60	212	7.56	0.60
Mesta	DP013_Hadzhidimovo	ME_M	24157	0.00253	2	37.50	3.00	293	9.00	0.60
Mesta	DP014_Musomishta	ME_M	33041	0.00210	2	48.00	0.00	360	10.20	0.60
Mesta	DP015_Breznitsa	ME_M	49891	0.00303	2	48.00	0.00	360	10.20	0.60
Mesta	DP016_Ribnovo	ME_M	48113	0.00228	2	24.90	6.60	212	7.56	0.60
Mesta	DP017_Dobrinishte	ME_M	76628	0.00260	2	48.00	0.00	360	10.20	0.60
Mesta	DP018_Belitsa	ME_M	89693	0.00293	2	48.00	0.00	360	10.20	0.60
Mesta	DP019_Kraishte	ME_M	85724	0.00210	2	48.00	0.00	360	10.20	0.60
Mesta	DP020_Yakoruda	ME_M	100979	0.00542	2	44.79	0.92	339	9.83	0.60
Mesta	DP021_Gotse Delchev	ME_M	34103	0.01863	2	60.00	0.00	450	12.75	0.75
Struma	DP001_Blagoevgrad	ST_M	91252	0.06585	2	49.22	0.00	369	10.46	0.62
Struma	DP002_Bistritsa	ST_DZH	14644	0.00156	2	6.00	12.00	90	5.40	0.60
Struma	DP003_Bobov dol	ST_DZH	14644	0.00588	2	46.12	0.54	348	9.99	0.60
Struma	DP004_Dupnitsa	ST_DZH	14644	0.03409	2	7.50	18.54	77	6.75	0.75
Struma	DP005_Kraynitsi	ST_DZH	14644	0.00199	2	6.00	12.00	90	5.40	0.60
Struma	DP006_Samoranovo	ST_DZH	14644	0.00171	2	6.00	12.00	90	5.40	0.60
Struma	DP007_Sapareva banya	ST_DZH	14644	0.00389	2	6.00	12.00	90	5.40	0.60
Struma	DP008_Yahinovo	ST_DZH	14644	0.00213	2	6.00	12.00	90	5.40	0.60
Struma	DP009_Breznik	ST_M	220290	0.00369	2	44.52	0.99	338	9.80	0.60
Struma	DP010_Kresna	ST_M	49049	0.00335	2	48.00	0.00	360	10.20	0.60
Struma	DP011_Mikrevo	ST_M	37033	0.00205	2	48.00	0.00	360	10.20	0.60

Struma	DP012_Krupnik	ST_M	69633	0.00212	2	48.00	0.00	360	10.20	0.60
Struma	DP013_Simitli	ST_M	75334	0.00636	2	48.00	0.00	360	10.20	0.60
Struma	DP014_Kyustendil	ST_BAN	7588	0.04363	2	7.50	18.48	78	6.75	0.75
Struma	DP015_Slokoshtitsa	ST_BAN	6881	0.00170	2	6.00	12.00	90	5.40	0.60
Struma	DP016_Zemen	ST_M	181557	0.00184	2	7.50	18.17	81	6.75	0.75
Struma	DP017_Batanovtsi	ST_M	220781	0.00230	2	6.00	12.00	90	5.40	0.60
Struma	DP018_Divotino	ST_M	229634	0.00182	2	6.00	12.00	90	5.40	0.60
Struma	DP019_Dragichevo	ST_M	236509	0.00190	2	6.00	12.00	90	5.40	0.60
Struma	DP020_Pernik	ST_M	228379	0.07491	2	7.50	18.71	75	6.75	0.75
Struma	DP021_Radomir	ST_M	211161	0.01335	2	7.50	18.36	79	6.75	0.75
Struma	DP022_Studena	ST_M	242834	0.00173	2	6.00	12.00	90	5.40	0.60
Struma	DP023_Kocherinovo	ST_M	104477	0.00245	2	6.00	12.00	90	5.40	0.60
Struma	DP024_Rila	ST_M	107010	0.00284	2	6.00	12.00	90	5.40	0.60
Struma	DP025_Sandanski	ST_M	27283	0.02491	2	60.00	0.00	450	12.75	0.75
Struma	DP026_Karnalovo	ST_STR	5510	0.00169	2	48.00	0.00	360	10.20	0.60
Struma	DP027_Kolarovo	ST_STR	18716	0.00192	2	48.00	0.00	360	10.20	0.60
Struma	DP028_Parvomay	ST_STR	15115	0.00314	2	48.00	0.00	360	10.20	0.60
Struma	DP029_Petrich	ST_STR	8576	0.02779	2	60.00	0.00	450	12.75	0.75

Distributed Domestic Pollution input to MIKE 11
Present Situatio

Struma River Basin					
NAM name	Q (m3/s)	NH4 (mgN/l)	NO3 (mgN/l)	BOD (mg/l)	PO4-P (mgP/l)
ST_ARK	0.0179	2.0000	4.6356	23.6442	1.8000
ST_BRA	0.0009	15.6640	0.0960	117.8400	3.3616
ST_DRA	0.0031	2.0000	4.7140	22.8600	1.8000
ST_DZH1	0.0211	5.9049	3.0886	53.0599	2.2463
ST_DZH2	0.0177	2.0000	4.2570	27.4299	1.8000
ST_ELE	0.0045	2.0000	4.0120	29.8800	1.8000
ST_GRA	0.0046	13.9840	0.5760	107.0400	3.1696
ST_KON	0.0178	4.8177	3.6951	43.1125	2.1220
ST_M1	0.0382	14.0988	0.5432	107.7782	3.1827
ST_M10	0.0007	2.0000	4.8440	21.5600	1.8000
ST_M2	0.0216	13.2514	0.7853	102.3306	3.0859
ST_M3	0.0004	15.5380	0.1320	117.0300	3.3472
ST_M4	0.0118	13.9840	0.5760	107.0400	3.1696
ST_M5	0.0098	10.9486	1.4433	87.5266	2.8227
ST_M6	0.0378	2.1802	4.5578	25.0653	1.8206
ST_M7	0.0050	3.1489	4.0372	29.6285	1.9149
ST_M8	0.0060	5.7049	3.0807	48.3485	2.2071
ST_M9	0.0249	2.0000	4.8403	21.5968	1.8000
ST_PIR	0.0097	13.2840	0.7760	102.5400	3.0896
ST_RIL	0.0152	2.0000	4.0000	30.0000	1.8000
ST_SAN	0.0039	13.2840	0.7760	102.5400	3.0896
ST_SOV	0.0077	2.0000	4.7140	22.8600	1.8000
ST_STR1	0.0268	15.2860	0.2040	115.4100	3.3184
ST_STR2	0.0094	15.2860	0.2040	115.4100	3.3184
ST_TRE	0.0056	3.2035	3.8734	35.5646	1.9375

Mesta/Dospat River Basin					
NAM name	**Q (m3/s)**	**NH4-N (mgN/l)**	**NO3-N (mgN/l)**	**BOD (mg/l)**	**PO4- P (mgP/l)**
ME_GLA	0	0	0	0	0
ME_IST1	0.0085	15.566	0.124	117.21	3.3504
ME_IST2	0	0	0	0	0
ME_KAN	0.008	5.612	2.968	53.22	2.2128
ME_M1	0.0174	6.0623	2.8393	56.1148	2.2643
ME_M2	0.0112	6.9918	2.5738	62.0902	2.3705
ME_M3	0.0199	13.8106	0.6255	105.9255	3.1498
ME_M4	0.0037	15.874	0.036	119.19	3.3856
ME_M5	0.0112	9.9189	1.7375	80.9072	2.705
ME_M6	0.0078	9.728	1.792	79.68	2.6832
ME_NEV	0.0003	15.118	0.252	114.33	3.2992
ME_ZLA	0.0066	13.3302	0.7628	102.837	3.0949
DO_M1	0.0157	8.0968	2.2581	69.1936	2.4968
DO_M2	0.0039	12.808	0.912	99.48	3.0352

Arda / Byala River Basin					
NAM	**Q (m3/s)**	**NH4-N mg/l**	**NO3-N mg/l**	**BOD mg/l**	**PO4-P mg/l**
AR_CHE	0.01222	17.340	1.629	136	4.245
AR_KRU1	0.02412	9.091	3.985	83	3.302
AR_KRU2	0.01585	6.402	4.754	66	2.994
AR_M0	0.00124	13.827	2.632	114	3.843
AR_M1	0.01270	6.165	4.821	64	2.967
AR_M2	0.06340	12.918	2.892	108	3.739
AR_M3	0.01582	10.671	3.534	93	3.482
AR_M4	0.04124	8.642	4.114	80	3.250
AR_M5	0.02311	12.772	2.934	107	3.723
AR_VAR1	0.02637	10.775	3.504	94	3.494
AR_VAR2	0.05659	6.365	4.764	66	2.990
BI_M	0.00733	12.607	2.981	106	3.704

Tundza River Basin					
NAM name	**Q (m3/s)**	**NH4-N mg/l**	**NO3-N mg/l**	**BOD mg/l**	**PO4-P mg/l**
TU_ARA	0.00378	12.996	2.870	108	3.748
TU_ASE1	0.00000	0.000	0.000	0	0.000
TU_ASE2	0.00025	2.880	6.816	33	2.592
TU_BEL	0.01507	2.880	6.326	38	2.592
TU_KAL	0.02734	4.082	5.463	50	2.729
TU_M1	0.01974	13.646	2.684	112	3.822
TU_M2	0.02731	6.350	4.769	66	2.989
TU_M3	0.02685	2.880	6.418	37	2.592
TU_M4	0.02611	2.880	6.734	33	2.592
TU_M5	0.01761	2.880	5.760	43	2.592
TU_M6	0.03502	2.948	6.048	41	2.600
TU_M7	0.01245	2.880	6.696	34	2.592
TU_M8	0.01972	2.880	6.367	37	2.592
TU_M9	0.00967	2.880	6.039	40	2.592
TU_MOC1	0.02340	6.407	4.828	65	2.995
TU_MOC2	0.02691	7.674	4.390	74	3.140
TU_POP1	0.01000	10.988	3.444	95	3.519
TU_POP2	0.00130	10.359	3.623	91	3.447
TU_SIN	0.00589	10.615	3.550	93	3.476

Maritsa River Basin					
NAM name	**Q (m3/s)**	**NH4-N mg/l**	**NO3-N mg/l**	**BOD mg/l**	**PO4-P mg/l**
MA_BLA	0.03590	2.880	6.586	35	2.592
MA_CPI1	0.00261	9.049	3.997	83	3.297
MA_CPI2	0.02290	18.078	1.418	141	4.329
MA_CPL1	0.00192	11.467	3.307	98	3.573
MA_CPL2	0.01061	19.743	0.942	152	4.519
MA_HAR1	0.04926	15.196	2.241	122	4.000
MA_HAR2	0.01972	4.449	5.312	53	2.771
MA_LUD1	0.00977	15.908	2.038	127	4.081
MA_LUD2	0.00622	16.528	1.860	131	4.152
MA_M1	0.04612	15.842	2.057	127	4.073
MA_M2	0.08043	15.055	2.282	121	3.983
MA_M3	0.09760	8.817	4.064	81	3.270
MA_M4	0.04789	4.430	5.317	53	2.769
MA_M5	0.06582	14.897	2.327	120	3.965
MA_M6	0.02015	11.404	3.325	98	3.566
MA_M7	0.00588	3.243	6.620	36	2.633
MA_PYA1	0.00274	2.880	5.760	43	2.592
MA_PYA2	0.00983	15.665	2.523	80	3.887
MA_RBA	0.00000	0.000	0.000	0	0.000
MA_RDO	0.00087	7.345	4.484	72	3.102
MA_ROV	0.00988	3.414	5.873	44	2.653
MA_SAZ1	0.04693	8.289	4.595	74	3.210
MA_SAZ2	0.06493	17.566	1.695	136	4.270
MA_STA1	0.00764	14.190	2.529	116	3.885
MA_STA2	0.00416	14.190	2.529	116	3.885
MA_STR1	0.01559	8.787	4.283	58	3.183
MA_STR2	0.04036	13.621	2.697	112	3.817
MA_TOP1	0.02289	5.779	4.947	62	2.923
MA_TOP2	0.00733	5.340	6.132	48	2.873
MA_TOP3	0.01941	20.589	0.700	157	4.616
MA_TOP4	0.00340	21.371	0.477	162	4.705
MA_VAC1	0.00030	2.880	5.760	43	2.592
MA_VAC2	0.02740	16.945	1.741	134	4.199
MA_YUG	0.00272	17.527	1.575	137	4.266

Industrial Point Sources in MIKE 11 setup

NAME OF polluter	SETTLEMENT	M11 Branch	M11 Chainage	Discharge m3/s	NH4-N (mg(l)	NO3-N (mg/l)	BOD (mg/l)	P04-P (mg/l)	Particulate-P (mg/l)
Rosi Ltd	Dospat	DO_M	28851	0.000143	5	2	50	1	0.1
Ekoengineering - PM SPLTD	v. Pobit kamak	DO_M	64784	0.007060	3.00	2.00	25	0.17	0.10
Strazhite SPLTD	Bansko	ME_IST	12659	0.000800	1.99	2.00	3	0.22	0.10
Zavod za telephonna aparatura JSCo	Bansko	ME_IST	12659	0.008000	2.14	1.65	10	0.56	0.10
East South SPLTD / Korfi Ltd	Bansko	ME_IST	12659	0.000381	5	2	25	5	1
Incoms Telecom Holding JSCo	v.Banya	ME_IST	4089	0.063125	0.48	0.99	12	0.54	0.03
Pirin Story SPLTD	v.Banya	ME_IST	4089	0.000951	0.50	2.00	18	0.70	0.10
Magnetic hand technology JSCo	Razlog	ME_IST	10330	0.047500	2.14	0.64	2	0.98	0.10
Hemefa Bulgaria SPLTD	Razlog	ME_IST	10330	0.000240	1	2	25	1	0.1
EM OIL SPLTD	Razlog	ME_IST	10330	0.000016	4.00	2.00	25	1.40	0.10
Pirinhard JSCo	Razlog	ME_IST	10330	0.180556	2	2	10	0.4	0.1
Ahmed Dzhildzhov-Rodopi	v.Satovcha	ME_M	12480	0.000159	4.00	2.00	25	1.40	0.10
Inkes SPLTD	Hadzhidimovo	ME_M	24157	0.001585	1	2	10	0.1	0.1
ilya Ivanov Dimitrov	v.Dabnitsa	ME_M	28677	0.000061	4.00	2.00	25	1.40	0.10
Venta Ltd	v.Koprivlen	ME_M	27740		0.85	0.04	13	0.43	0.10
G.T.H Pirinplast Ltd	v.Borovo	ME_M	36252	0.001767	1.70	0.11	4	1.00	0.10
Neftotrans-2001 Ltd	Belitsa	ME_M	89693	0.000063	4.00	2.00	25	1.40	0.10
Mebelplast JSCo	Belitsa	ME_M	89693	0.000022	1	2	25	1	0.1
V M S Pirin Ltd	Semkovo	ME_M	96109	0.000127	5	2	25	5	1
Complex Mesta-Baroto	Gotse Delchev	ME_M	34102	0.060000	1.28	0.09	6	0.14	0.10
Kolida JSCo	Gotse Delchev	ME_M	96000	0.28	2.00	3	0.17	0.10	

Belasitsa 2002 SPLTD	Gotse Delchev	ME_M	34102	0.004875	6.00	2.00	72	0.17	0.10
Bistritsa-2002 Ltd TMSI	Gotse Delchev	ME_M	34102	0.001712	1.00	2.00	10	0.33	0.10
Zortev-MD-Mihail Zortev	Gotse Delchev	ME_M	34102	0.000174	5	2	25	5	1
Ekoengineering - PM SPLTD	v.Eleshnitsa	ME_M	78992	0.005486	5	2	25	5	1
SOS Child settlement	v.Dren	ST_M	251659	0.00200	0.56	2.00	17	1.44	0.00
BTM+ LTD	Blagoevgrad	ST_M	91252						
ZPP SPLTD	Blagoevgrad	ST_M	91252	0.00433	2.26	2.30	12	0.98	0.10
Visokogovoriteli SA	Blagoevgrad	ST_M	91252	0.00700	1.33	2.00	8	0.98	0.10
Mlechen Kombinat Rila-S.T.H	Blagoevgrad	ST_M	91252	0.00775	2.00	1.12	4	1.00	0.10
Saobshtitelan Tehnika JSCo	Blagoevgrad	ST_M	91252	0.00010	0.50	2.00	74	0.10	0.17
ZIIU Standart JSCo	Blagoevgrad	ST_M	91252	0.00800	0.50	2.00	40	0.17	0.10
Pirin Mramor JSCo	Blagoevgrad	ST_M	91252	0.00700	0.10	2.00	45	14.52	29.00
Strumateks JSCo	Blagoevgrad	ST_M	91252	0.00500	0.85	2.00	6	0.43	0.10
Danailov-Georgi Lazarov	Blagoevgrad	ST_M	91252	0.00016	4.00	2.00	25	1.40	0.10
KD Kauflang Bulgaria SPLTD & Co	Blagoevgrad	ST_M	91252	0.00023	1	2	25	0.1	0.1
Mishel SPLTD	Blagoevgrad	ST_M	91252	0.00001	4.00	2.00	25	1.40	0.10
KZ Keramengineering JSCo	v.Dragovishtitsa	ST_DRA	6276	0.00011	0.50	1.00	5	0.10	0.10
Thermal Power Plant Bobov Dol SPJSC	Bobov Dol	ST_M	138490	2.31750	1.00	2.00	9	0.57	0.10
Mines Bobov Dol JSCo	Bobov Dol	ST_M	138490	0.09891	2.72	1.42	57	17.93	0.00
Highway Hemus S.A.	Dupnitsa	ST_DZH	17123	0.00200	0.50	2.00	3	0.13	0.10
Benet Ltd	Breznik	ST_M	220633	0.00300	2.00	2.00	164	1.00	0.10
Arm Invest JSCo	v.Meshtitsa	ST_M	228789	0.00014	5	2	50	50	0.1
Damianitza JSCo.	v.Damyanitsa	ST_M	19697	0.02317	0.13	1.00	3	1.00	0.00
PSK Spartak	v.Sklave	ST_M	21703	0.50000	6.30	1.53	20	0.36	0.00

BULS Ltd	v.Topolnitsa			0.00750	1.00	2.00	8	1.00	0.00
Energoremont-Kresna JSCo	Kresna	ST_M	49049	0.00233	3.68	2.00	5	0.15	0.10
Stroykomtrans SPLTD	v. Ploski	ST_M	35859	0.00010	5	2	45	25	1
Ilindenski mramor JSCo	v.ilindentsi	ST_M	36274	0.00787	1.99	2.76	6	0.10	0.10
Ilindenski mramor JSCo	v.ilindentsi	ST_M	36274	0.10984	0.50	2.00	522	0.10	0.10
Bumar S.A.	v.Strumyani	ST_M	37840	0.00450	0.50	2.00	51	0.10	1.11
Elka VID-D.Dimanka	v.Strumyani	ST_M	37840	0.00170	0.03	2.31	1	0.11	0.10
"Cherkezov" Ltd	v.Strumyani	ST_M	37840	0.00034	0.75	2.00	25	0.10	0.35
Dimankov SPLTD	v.Strumyani	ST_M	37840	0.00016	0.75	2.00	25	0.10	0.35
Stoun 2002 Ltd - TMSI	v.Valkovo	ST_M	30055	0.00200	1.60	2.00	18	2.09	0.10
Ekoengineering - PM SPLTD	v. Senokos	ST_M	64208	0.00800	3.00	2.00	25	0.17	0.10
Georesurs SPLTD	Simitli	ST_M	75334	0.01150	0.11	2.00	18	0.20	0.10
Rosela Ltd	Simitli	ST_M	75334	0.00540	0.08	8.62	6	0.11	2.20
PK Macedonia	Simitli	ST_M	75334	0.00008	5	2	50	50	1
Blagoevgrad BT S.A.	v. Izgrev	ST_M	87452	0.00633	0.17	2.00	13	0.27	0.00
Blagoustroystveni Stroezhi Ltd	v. Izgrev	ST_M	87452	0.00016	4.00	2.00	25	1.40	0.10
J P Dilars Lld	v.Krupnik	ST_M	69633	0.00200	1.00	0.08	10	0.98	0.10
ONIX Ltd	v.Krupnik	ST_M	69633	0.00342	1	2	10	0.1	0.1
Bistritsa Ltd TMSI	v.Pokrovnik	ST_M	89473	0.00600	0.21	2.00	27	0.11	0.10
Yugostroy Ltd	v.Pokrovnik	ST_M	89473	0.00003	4.00	2.00	10	0.06	0.10
Montsa-Vasil novoselski	v.Tserovo	ST_M	85151	0.00001	4.00	2.00	25	1.40	0.10
Lesko Ltd	v.Belo pole	ST_M	95181	0.00002	2	2	25	25	0.1
D B V Ltd-YMSI	Boboshevo	ST_M	112825	0.00571	0.50	2.00	3	0.13	0.10
Vitren SA	Kyustendil	ST_BAN	7588	0.00620	3.00	2.00	25	0.33	0.10

Gausto-gold JSCo	Kyustendil	ST_BAN	7588	0.08450	3.00	2.00	25	0.17	0.10
Gausto-gold JSCo	Kyustendil	ST_BAN	7588	0.00218	0.16	2.00	123	0.01	0.32
Velbazhd JSCo	Kyustendil	ST_BAN	7588	0.00000	0.85	0.24	8	0.43	0.10
TPK Stremon-3	v. Zhilentsi	ST_BAN	11854		5.00	2.00	156	2.00	0.10
Bugarkoop SPLTD-Frukta	v.Kopilovtsi	ST_M	154027	0.01288	1.00	2.00	25	1.00	0.00
Granit 97 SA	v.Nevestino	ST_M	140428	0.00350	0.10	2.00	3	0.03	0.10
Okeania-P.Stoilov, M.Stoilova	Pernik	ST_M	228379	0.01500	2.00	2.00	3	0.33	0.10
Toploficatsia - Pernik EAD	Pernik	ST_M	228379	0.27813	7.00	4.43	6	0.57	0.00
Mesokombinat Pernik JSCo	Pernik	ST_M	228379	0.00400	0.09	2.00	1	1.00	0.10
Mines Otkrit Vagledobiv JSCo	Pernik	ST_M	228379	0.01039	3.99	1.17	36	0.16	50.00
Mines Otkrit Vagledobiv JSCo	Pernik	ST_M	228379	0.00620	3.00	2.00	25	0.17	0.10
Mines Otkrit Vagledobiv JSCo	Pernik	ST_M	228379	0.00202	3.00	2.00	25	0.17	0.10
Stomana industry JSCo	Pernik	ST_M	228379	0.05065	39.30	2.00	39	13.10	37.00
Demo Bulgaria Ltd	Pernik	ST_M	228379	0.00000	0.85	0.76	6	0.43	0.10
Feromagnit JSCo	Pernik	ST_M	228379	0.00001	2	2	25	25	1
Rekoul JSCo	Pernik	ST_M	228379	0.00010	3.00	2.00	25	0.33	0.10
Feromagnit JSCo	Pernik	ST_M	228379	0.00015	1.50	2.00	10	0.10	0.10
Alpha komers Ltd	Radomir	ST_M	211161	0.00300	4.00	1.84	19	1.37	0.10
Elektrik JSCo	Radomir	ST_M	211161	0.00120	2.17	2.00	117	2.25	0.50
WWTP Leko Co SPLTD	Radomir	ST_M	211161	0.48917	3.02	2.18	22	1.34	0.00
Radomir Metali JSCo	Radomir	ST_M	211161	0.00200	2.00	2.00	25	0.17	0.10
Delta Imoti Ltd	v.Kladnitsa	ST_M	245470	0.00254	5	2	25	25	1
Hydrostroy - Yug 97 JSCo	v.Katuntsi	ST_PIR	12113	0.00117	4.00	2.00	25	1.40	0.10
Bistritsa Ltd TMSI	Kocherinovo	ST_M	104477	0.00600	0.01	2.00	8	0.28	0.10

SD Etikom-Nakov & Co	Rila	ST_M	107010	0.00003	4.00	2.00	10	0.06	0.10
Nikolay Davidkov	Rila	ST_M	107010	0.00013	5	2	25	25	1
Struma - BON JSCo	Sandanski	ST_M	27283		3.95	2.00	5	0.06	0.10
Bodzhinov & Co Ltd	Sandanski	ST_M	27283	0.50000	4.00	1.84	19	1.37	0.10
Mesokombinat - Sandanski SPLTD	Sandanski	ST_M	27283	0.01000	0.48	2.00	2	1.00	0.10
Sanel JSCo	Sandanski	ST_M	27283	0.01000	0.50	2.00	39	0.17	0.10
Sanel JSCo	Sandanski	ST_M	27283	0.00200	0.50	2.00	39	0.17	0.10
Bumar JSCo	Sandanski	ST_M	27283	0.00016	0.85	0.76	9	0.43	0.10
Bozhinov and Co	Sandanski	ST_M	27283	0.00020	4.00	2.00	25	1.40	0.10
Dimitar Kermidarski	Sandanski	ST_M	27283	0.00002	4.00	2.00	25	1.40	0.10
Stroyuniversal SPLTD	Sandanski	ST_M	27283	0.00002	4.00	2.00	10	0.06	0.10
Beton SPLTD	Sandanski	ST_M	27283	0.00001	4.00	2.00	10	0.06	0.10
TD Edelvays	Sandanski	ST_M	27283	0.00011	5	2	25	25	1
FGPP "Gyueshevo" -Ministry of Finance	v.Gyueshevo	ST_BAN	17628	0.00070	5	2	25	25	1
Tri Bora - Valentin Manev	Petrich	ST_STR	8576	0.002	3.51	0.09	5	0.14	0.10
Mes-Co SPLTD	Petrich	ST_STR	8576	0.01200	2.00	0.95	2	1.00	0.10
V&VGD Orandzherii-Petrich Ltd	Petrich	ST_STR	8576	0.01242	23.99	0.00	135	3.15	15.00
Belasitsa S.A.	Petrich	ST_STR	8576	0.00700	3.00	2.00	136	0.17	0.10
Versay Ltd	Petrich	ST_STR	8576	0.33300	1.00	2.00	10	0.33	0.10
Eko Elda Bulgaria EAD	Petrich	ST_STR	8576	0.00013	4.00	2.00	25	1.40	0.10
Betonstroy SPLTD	Petrich	ST_STR	8576	0.00032	4.00	2.00	10	0.06	0.10
Penak Nikova-Express mode	v. Karnalovo	ST_STR	5510	0.00028	4.00	2.00	25	1.40	0.10
Hadzhievi-Stoychevi Ltd	v.Parvomay	ST_STR	15115		0.05	2.00	11	0.14	0.10
Radko Bozhinov	v.Parvomay	ST_STR	15115	0.00002	4.00	2.00	25	1.40	0.10

Mike 11 ID	M11 branch	M11 chainage	MUNICIPALITY	Discharge m3/s	NH4-N (mg(l)	NO2+NO3-N (mg/l)	BOD5 mg/l	PO 4 -P(mg/l)	Partic. P (mg/l)
IP001_Gorupso Zlatograd, Tailing pond "Erma river"	AR_VAR	65892	Zlatograd	0.057300	2	2	25	0.1	0.1
IP002_Gorubso Madan - JSCo Mining "Krushev dol"	AR_M	178278	Madan	0.002901	2	2	25	0.1	0.1
IP003_Gorubso Rudozem EAD - in porcess of closing	AR_M	178278	Rudozem	0.050000	2	2	25	0.1	0.1
IP004_Progresstroy	AR_M	178278	Rudozem	0.000514	2	2	25	0.1	0.1
IP005_Betonstroy Ltd	AR_M	178278	Madan	0.000289	2	2	25	0.1	0.1
IP006_TMSI SPLTD /Nova Orlitsa-Prim Ltd/	AR_CHE	16852	Madan	0.000062	2	2	25	0.1	0.1
IP007_Gorubso Kardzhali JSCo, Orc-dressing	AR_M	98872	Kardzhli	0.005195	2	2	25	0.1	0.1
IP008_Betonit JSCo /IW/	AR_M	98872	Kardzhli	0.000095	2	2	25	0.1	0.1
IP009_Betonit JSCo /SS/	AR_M	98872	Kardzhli	0.000037	2	2	25	0.1	0.1
IP011_Baydano mladost 95 Ltd	AR_VAR	14035	Momchilgrad	0.001990	14.5	2	200	5	0.1
IP012_Mines"Madzharevor" EAD in process of closing	AR_M	45171	Haskovo	0.111079	2	2	25	0.1	0.1
IP013_Gorubso-Kardzhali JSCo, Kardzhali, Mine "Enyovche" /MW/	AR_M	161201	Ardino	0.025000	2	2	25	0.1	0.1
IP014_Gorubso-Kardzhali JSCo, Kardzhali, Mine "Enyovche"/SS/	AR_M	161201	Ardino	0.000100	2	2	25	0.1	0.1
IP015_Gorubso-Kardzhali JSCo, Kardzhali, Mine "Pcheloyad" /MW/	AR_M	98872	Kardzhali	0.009969	2	2	25	0.1	0.1
IP016_Gorubso-Kardzhali JSCo, Kardzhali, Mine "Pcheloyad" /SS/	AR_M	98872	Kardzhali	0.000072	2	2	25	0.1	0.1

IP001_Paper Mill JSC - Belovo	MA_M	248078	Belovo	0.013900	0.333	0.049	33.076	0.4	0.1
IP002_Kaomet	MA_STA	21500	Bratsigovo	0.000410	0.985	58.54	20	0.3	0.1
IP003_Kristal JSCo /SS/	MA_CPI	40500	Velingrad	0.000242	0.885	0.79	25	1	1
IP004_Kristal JSCo /IW/	MA_CPI	40500	Velingrad	0.006018	1	0.8	30	1	1
IP005_VSK Kentavar	MA_CPI	40500	Velingrad	0.000304	0.5	0.1285	2.69	0.09	0.1
IP006_Boni Oborot 2	MA_CPI	40500	Velingrad	0.001268	2.84	0.084	65	0.32	0.1
IP007_Elhim-Iskra JSCo /IW/	MA_M	218612	Pazardzhik	0.011416	0.3825	0.0346	2.71	0.0275	0.1
IP008_Elhim-Iskra JSCo /SS/	MA_M	218612	Pazardzhik	0.001268	0.4	0.03	15	0.1	0.1
IP009_Trakya Paper JSCo /IW/	MA_M	218612	Pazardzhik	0.074120	2	1	25	0.1	0.1
IP010_Trakya Paper JSCo /SS/	MA_M	218612	Pazardzhik	0.001852	2	1	25	0.1	0.1
IP011_Kauchuk JSCo /SS/	MA_M	218612	Pazardzhik	0.000027	1	1	25	0.1	0.1
IP012_Kauchuk JSCo /IW/	MA_M	218612	Pazardzhik	0.000060	1	1	25	0.1	0.1
IP013_Ognyanovo-K EAD	MA_M	218612	Pazardzhik	0.007927	0.43	0.868	4.55	0.2567	1.75
IP014_Asarel-Medet JSCo /IW/	MA_LUD	54942	Panagyurishte	0.029395	0.5	0.1	25	0.1	0.1
IP015_Asarel-Medet JSCo /SS/	MA_LUD	54942	Panagyurishte	0.000983	0.5	0.1	25	0.1	0.1
IP016_Optikoelektron SPLTD /IW/	MA_LUD	54942	Panagyurishte	0.000038	1.23	0.76	9.01	0.374	0.1
IP017_Optikoelektron SPLTD /SS/	MA_LUD	54942	Panagyurishte	0.000983	1	0.8	15	0.4	0.1
IP018_Biovet JSCo	MA_STA	21500	Peshtera	0.020000	1.85	25.64	80.13	3.57	0.1
IP019_BDZ EAD -Engine-shed /IW/	MA_M	235486	Septemvri	0.001903	1	0.5	25	0.1	0.1
IP020_BDZ EAD - Engine-shed /SS/	MA_M	235486	Septemvri	0.000634	1	0.5	25	0.1	0.1
IP022_Yulit - AS Ltd, Plovdiv town	MA_M	145675	Brezovo	0.000539	0.5	0.1	25	0.1	0.1

IP023_Konex tiva Ltd, v.Orizovo, a Canning factory	MA_M	145284	Bratya Daskalovi	0.006099	2	1	50	1	0.1
IP024_Brezovo - Ltd, Gasheklanitsa	MA_M	145344	Brezovo	0.000036	3	2	15	1	1
IP025_Rikom - Ltd, Brezovo	MA_M	145344	Brezovo	0.000096	16.15	2	2050	1	0.1
IP026_Delikates-2 Ltd, v.Zhitnitsa, workshop meat production	MA_STA	21500	Brezovo	0.000263	4	4	50	5	5
IP028_Bulgarian Rose JSCo, Karlovo	MA_SST	9410	Karlovo	0.001046	2	1	25	0.1	0.1
IP029_Bulgarian Rose JSCo, Karlovo	MA_STR	53531	Karlovo	0.000457	0.33	0.48	50	0.02	0.1
IP030_SKF Bearings Bulgaria, Sofia	MA_STR	53531	Karlovo	0.000100	0.5	0.1	25	1	1
IP031_SKF Bearings Bulgaria, Sofia	MA_STR	53531	Karlovo	0.001442	0.5	0.1	25	0.1	0.1
IP032_SKF Bearings Bulgaria, Sofia	MA_STR	53531	Karlovo	0.003173	0.5	0.1	25	0.1	0.1
IP033_VMZ JSCo /SS/	MA_STR	53531	Karlovo	0.000690	0.5	0.1	25	0.1	0.1
IP034_VMZ JSCo /IW/	MA_STR	53531	Karlovo	0.000345	0.5	0.1	25	0.1	0.1
IP035_Polidey 2 Ltd, Karlovo, workshop for milk production	MA_SVE	3062	Karlovo	0.000449	3.3	0.1	80	1	0.1
IP036_Liebherr - Hausgerate Maritsa, Factory for refrigerator	MA_BLA	1693	Maritsa	0.000181	1	0.5	25	0.1	0.1
IP037_Terem - Georgi Benkovski SPLTD - Plovdiv	MA_PYA	14114	Maritsa	0.006025	1	0.1	15	0.1	0.1
IP038_Agri Bulgaria SPLTD	MA_M	187560	Maritsa	0.002326	2	0.1	15	0.1	0.1
IP039_Bratya Krastevi Ltd, workshop for meat production	MA_M	187478	Maritsa	0.000247	2	2	15	5	0.1

IP040_Sokotab Bulgaria, Sofia, workshop for /SS/	MA_BLA	1693	Maritsa	0.000411	2	2	15	1	0.1
IP041_Sokotab Bulgaria, Sofia, workshop for /IW/	MA_BLA	1693	Maritsa	0.000083	2	2	15	1	0.1
IP042_Rafan - Ltd, Plovdiv,workshop for tobacco	MA_PYA	9968	Maritsa	0.000266	2	2	25	1	0.1
IP043_Bulsafil Ltd, Plovdiv,Spinning workshop.	MA_M	168729	Maritsa	0.000222	2	2	25	1	0.1
IP044_Bulborg - JSCo, Plovdiv, Workshop for beer	MA_PYA	9968	Maritsa	0.000058	2	2	25	5	0.1
IP045_Vinarska izba Paldin JSCo	MA_VAC	14114	Perushtitsa	0.000042	2	2	15	5	0.1
IP046_TER-M Ltd, Plovdiv, bird slaughterhouse	MA_M	129939	Parvamay	0.000649	2	10.04	15	2	0.1
IP047_Chugunoleene JSCo /SS/	MA_M	129939	Parvamay	0.000174	0.5	0.5	15	0.1	0.1
IP048_Chugunoleene JSCo /IW/	MA_M	129939	Parvamay	0.004150	0.5	0.5	15	0.1	0.1
IP049_Bor Chvor - D.Minev, v.Dalbok izvor, Dairy	MA_M	134116	Parvamay	0.000084	9.92	5.13	280	0.02	0.1
IP050_Elit 95 Ltd, vDalbok izvor, Dairy	MA_M	134116	Parvamay	0.000463	23	10	1438	1	0.1
IP051_Kadans-2 Ltd, Rakovski, workshop for meat production	MA_M	15888	Rakovski	0.000108	4	5	50	5	0.1
IP052_Insa Oil Ltd, Rakovski/Storm water/	MA_M	146922	Rakovski	0.000106	1	1	15	0.1	0.1
IP053_Insa Oil Ltd, Rakovski /SS/	MA_M	146922	Rakovski	0.000039	1	1	30	0.1	0.1
IP054_Insa Oil Ltd, Rakovski /IW/	MA_M	146922	Rakovski	0.001397	1	1	25	0.1	0.1

IP055_Agrya JSCo, Plovdiv	MA_CPL	14891	Kuklen	0.011600	2	1	25	5	0.1
IP056_KCM-S.A., Plovdiv	MA_CPL	14891	Kuklen	0.097220	0.5	0.1	15	0.1	0.1
IP057_Herku Ltd, Plovdiv, Workshop for motor truck	MA_CPL	6538	Rodopi	0.000286	0.5	0.1	25	0.1	0.1
IP058_Interdeo JSCo /SS/	MA_CPL	6538	Rodopi	0.000017	0.5	0.5	15	1	0.1
IP059_Interdeo JSCo /IW/	MA_CPL	6538	Rodopi	0.000047	0.5	0.5	15	1	0.1
IP060_Roza Impex /SS/	MA_CPL	6538	Rodopi	0.000052	2	2	15	1	0.1
IP061_Roza Impex /IW/	MA_CPL	6538	Rodopi	0.000064	2	2	25	1	0.1
IP063_Elit 95 Ltd, v.Krumovo	MA_CPL	9531	Rodopi	0.000000	200	1	1000	5	1
IP064_Volex Ltd,/Glaus-2004 SPLTD/ Sofia, bird slaughterhouse	MA_M	144372	Rodopi	0.001110	200	1	25	5	1
IP065_Paper Faktory AD, Stambolyski	MA_M	197403	Rodopi	0.000666	200	1	15	5	1
IP066_Ioka Ltd, Plovdiv, a canning factory	MA_STA	5500	Stamboliyski	0.029000	2	1	25	1	0.1
IP067_"A.Dolev", Plovdiv, Factory for Soft drink/SS/	MA_VAC	5126	Stamboliyski	0.001655	2	1	15	1	0.1
IP068_"A.Dolev", Plovdiv, Factory for Soft drink/IW/	MA_VAC	5126	Stamboliyski	0.000034	2	2	25	5	0.1
IP069_Fulmax Ltd, v.Kalugerovo, Bottling oil factory	MA_M	203728	Stamboliyski	0.000079	3	2	40	5	0.1
IP070_Vinarska izba, bought from Vinprom Peshtera /SS/	MA_M	187642	Stamboliyski	0.000113	1	2	15	5	0.1
IP071_Vinarska izba, bought from Vinprom Peshtera /IW/	MA_M	187642	Saedinenie	0.000011	1	2	15	5	0.1
IP072_Vinela Ltd, Plovdiv, Dairy	MA_M	173999	Saedinenie	0.000016	1	2	15	5	0.1
IP073_Gorups ELaki - Mining "Druzhba"	MA_CPL	35259	Saedinenie	0.000174	8	2	15	2	0.1
IP074_Gorups ELaki - Mining "Dzhurkovo"	MA_CPL	35259	Laki	0.012002	0.5	0.1	25	0.1	0.1

IP075_Gorups ELaki - Orc-dressing with tailing pond "Laki-2-complex"	MA_CPL	35259	Laki	0.032002	0.5	0.1	25	0.1	0.1
IP076_P.A.L. BG - SPLTD	MA_VAC	24800	Laki	0.034838	0.5	0.1	25	0.1	0.1
IP077_Hydro - SPLTD	MA_VAC	24800	Devin	0.000539	8	2	45	1	1
IP080_Kostenets HHI JSCo /IW/	MA_M	268595	Devin	0.002264	0.5	0.5	25	0.1	0.1
IP081_Kostenets HHI JSCo /SS/	MA_M	268595	Kostenets	0.000495	1.22	1.14	29.8	0.1	0.05
IP082_Kostenets HHI JSCo /Storm water/	MA_M	268595	Kostenets	0.000634	1	1	25	0.1	0.1
IP083_Elatsite - Med JSCo	MA_TOP	79043	Kostenets	0.000060	2	2	15	0.5	0.1
IP084_Swedish match - Plam Bulgaria JSCo	MA_M	268595	Sofia	0.030124	2	10.04	15	0.1	0.1
IP085_Bimak JSCo/Chelopech Maining EAD/-/SS/	MA_TOP	86213	Kostenets	0.000095	5	5	25	1	1
IP086_Bimak JSCo/Chelopech Maining EAD/ - /IW/	MA_TOP	86213	Chelopech	0.002025	5	5	25	1	1
IP087_Bimak JSCo/Chelopech Maining EAD/ - /After tailing pond/	MA_TOP	86213	Chelopech	0.002431	5	5.05	120	1	1
IP088_Terem JSCo - /SS/	MA_M	268595	Chelopech	0.020255	5	20.06	25	1	1
IP089_Terem JSCo - /IW/	MA_M	268595	Kostenets	0.000295	1	0.1	25	0.5	0.1
IP090_Yumikom-MED JSCo	MA_TOP	92700	Kostenets	0.000048	1	0.1	25	0.5	0.1
IP091_Mine "Trayanovo 3", v.Mednikarovo	MA_SAZ	12988	Galabovo	0.003355	2	2	25	1	0.1
IP092_Remotex Radnevo EAD	MA_BLA	1693	Radnevo	0.003298	2	2	25	1	0.1
IP093_Svinekomplex Vereya JSCo	MA_SAZ	57506	Radnevo	0.004630	10	1	15	5	1

IP094_Mines"Trayanovo sever" and "Trayanovo 1"	MA_OVC	5578	Radnevo	0.004150	2	1	25	1	0.1
IP095_Konex tiva Ltd, v.Orizovo	MA_M	139240	Brezovo	0.003401	2	2	15	0.1	0.1
IP096_Vulkan JSCo	MA_M	94734	Dimitrovgrad	0.009989	3	0.1	25	0.49	0.1
IP097_NEOHIM JSCo/SS/	MA_M	94734	Dimitrovgrad	0.008000	10	10	25	1	0.1
IP098_NEOHIM JSCo /IW/	MA_M	94734	Dimitrovgrad	0.128000	15	8.81	38.94	0.22	0.1
IP099_NEOHIM JSCo /IW/	MA_M	94734	Dimitrovgrad	0.116000	10	7	30	1	0.1
IP100_Kamenitsa JSCo, Plovdiv, brewery Haskovo	MA_HAS	14934	Haskovo	0.018000	4	0.09	90	6.52	1
IP101_TTP "Maritsa 3" Dimitrovgrad /SS/	MA_M	94734	Dimitrovgrad	0.012525	0.5	0	25	0.1	0.1
IP102_TTP "Maritsa 3" Dimitrovgrad /IW/	MA_M	94734	Dimitrovgrad	0.018011	0.5	0	25	0.1	0.1
IP103_TTP "Maritsa 3" Dimitrovgrad /Drain water/	MA_M	94734	Dimitrovgrad	0.007610	0.5	0	25	0.1	0.1
IP001_VIN.S.Industries Ltd	TU_MOC	39988	Karnobat	0.005486	5	20.06	25	2	0.1
IP002_SIS Industries Ltd	TU_MOC	45890	Karnobat	0.001903	2	0.04	25	1	0.1
IP003_Vinex Slaviantsi JSCo	TU_MOC	45890	Sungulare	0.000616	2	10.04	25	1	0.1
IP004_Sunimeks SPLTD; "Ptitseklanitsa Chubra"	TU_MOC	45890	Sungulare	0.000964	2	10.04	15	2	1
IP005_Vinex Slaviantsi JSCo	TU_MOC	45890	Sungulare	0.000247	2	10.05	1200	1	0.1
IP006_Intendansko obsluzhvane, factori "Hr.Botev"	TU_M	295000	Karlovo	0.000074	1	1	15	1	0.1
IP007_SKF Bearings Bulgaria, Sofia /SS/	TU_M	295000	Karlovo	0.000175	4	1	25	0.5	0.1

IP008_SKF Bearings Bulgaria, Sofia /IW/	TU_M	295000	Karlovo	0.001034	4	1	25	0.5	0.1
IP009_Viganlex Ltd Sofia	TU_M	206336	Gurkovo	0.000793	2	2	30	1	0.1
IP010_Bulgaria - K JSCo	TU_M	256999	Kazanlak	0.001444	2	2	20	1	0.1
IP011_Arsenal JSCo /after WWTP/	TU_M	256999	Kazanlak	0.022831	2	0.1	7.6	0.5	0.1
IP012_Arsenal JSCo /Outlet sewer f2000/	TU_M	256999	Kazanlak	0.067954	2	0.1	25	0.5	0.1
IP013_Arsenal JSCo /general sewer-outlet/	TU_M	237029	Maglizh	0.009132	2	0.1	25	0.5	0.1
IP014_Mirolio-Bulgaria JSCo Sliven	TU_ASE	11359	Sliven	0.020000	2	2	50	1	0.1
IP015_Reproduction to Svinevadstvo	TU_M	109065	Yambol	0.001042	200	2	75	4	1
IP016_Yambolen JSCo	TU_M	109065	Yambol	0.011000	10	2	37.1	5	0.1

Livestock Farms Include in the MIKE 11 as Point Sources

M11Branch	Chainage	M11 Boundary ID	Discharge	BOD	NH4-N	PO4-P
Struma Basin			**m3/s**	**mg/l**	**mg/l**	**mg/l**
ST_M	144575	SLSP01 "Atanas "Yosifov" cattels	0.0025	315	108.22	1.918
ST_M	156203	SLSP02 Poultry farm "Valdis"	0.1987	10	5.48	1.644
ST_M	104477	SLSP03 "Boris Kiroychev" cattels	0.0027	315	108.22	1.918
ST_DZH	6526	SLSP04 "Nikola Malinov" Cattels	0.0031	315	108.22	1.918
ST_M	92720	SLSP05 "Kembarou MM 5" JSCo - Pigs	0.0023	109	55.21	10.116
Mesta Basin						
ME_M	34456	MeLSP01 "GHT - Pirin plast" -Pigs	0.0028	109	55.21	10.116
Arda Basin						
AR_VAR	14035	ALS01 "Furazhi 2000" PLC - Poultry	0.2778	1	0.41	0.027
AR_CHE	18724	ALS02 "Kokoimpex" PLC - Hens	0.2083	10	5.48	1.644
Tundzha Basin						
TU_MOC	37270	TLSP01 "Todor Uzunov" ST - Cattels	0.0069	315	108.22	1.918
TU_MOC	42845	TLSP02 "Svinekomplex " JSCo - Pigs	0.0041	109	55.21	10.116
TU_MOC	19520	TLSP03 "Bulmaks - DM" - pigs	0.0030	109	55.21	10.116
TU_SIN	1255	TLSP04 "Gradus - Ivan Angelov" - poultry	2.7778	1	0.41	0.027
TU_M	102245	TLSP05 "Reproduktor po svinevadstvo" JSCo -pigs	0.0278	109	55.21	10.116
TU_M	109065	TLSP06 "Geomeks" - pigs	0.0098	109	55.21	10.116
TU_M	145516	TLSP07 "MCD -02" Ltd. .- cattels	0.0000			
TU_M	145516	TLSP08 "Eko Farm 2005" Ltd. - hens	0.1389	10	5.48	1.644
TU_M	150250	TLSP09 "ZK Eko asorti" ST - pigs	0.0043	109	55.21	10.116
TU_M	203867	TLSP10 "SELEKT - Iliya Mihaylov" ST - cattels	0.0000			
TU_M	203867	TLSP11 "ASKENT - Plamen Penchev" ST - cattels	0.0000			
TU_MOC	46835	TLSP12 "Lyubomir Lyubenov" ST - cattels	0.0035	315	108.22	1.918
Maritsa Basin						
MA_BLA	24561	MLSP01 "DIANA MI" ST - cattels	0.0118	315	108.22	1.918
MA_BLA	24561	MLSP02 "VZhK - Rodopa" PLC - pigs	0.0116	109	55.21	10.116
MA_BLA	24561	MLSP03 "Zhuliv"PLC - poultry	0.9491	1	0.41	0.027
MA_HAR	25630	MLSP04 "Deniker - Milk" JSCo - cattelds	0.0046	315	108.22	1.918
MA_HAS	14934	MLSP05 "Galus" JSCo - ducks	0.2130	3	1.37	0.082
MA_STR	50436	MLSP06 "Vasil Levski" Cooperation - cattels	0.0028	315	108.22	1.918
MA_M	90962	MLSP07 "Emil Mihaylov" ST - cattels	0.0023	315	108.22	1.918
MA_LUD	16383	MLSP08 PK "Agromax" ST - pigs	0.0035	109	55.21	10.116
MA_M	96275	MLSP09 "Elis" PLC - pigs	0.0028	109	55.21	10.116
MA_M	142336	MLSP10 "Ucheben tsentar" - cattels	0.0220	315	108.22	1.918
MA_M	142336	MLSP11 "ZhK Gendov" - cattels	0.0058	315	108.22	1.918

MA_M	146922	MLSP12 "Stomar Invest" JSCo pigs	0.0227	109	55.21	10.116
MA_M	148770	MLSP13 "Reya - 96" ST -pigs	0.0104	109	55.21	10.116
MA_M	160215	MLSP14 "Bratya Kartevi 2003" ST - pigs	0.0162	109	55.21	10.116
MA_M	160215	MLSP15 "Reya - 96" ST - pigs	0.0231	109	55.21	10.116
MA_M	121372	MLSP16"Gradus" PLC - poultry	1.2963	1	0.41	0.027
MA_M	19516	MLSP17 "KOMSO" - cattels	0.0269	315	108.22	1.918
MA_M	197403	MLSP18 "Dimitar Madzharov - svinevadstvo - pigs	0.0023	109	55.21	10.116
MA_M	173999	MLSP19 "Elit - 95" ST - pigs	0.0056	109	55.21	10.116
MA_M	177574	MLSP20 "Andip 92" ST - hens	0.3588	10	5.48	1.644
MA_M	195162	MLSP21 "Kalmitsa" JSCo hens	0.1852	10	5.48	1.644
MA_M	218611	MLSP22 ZK "Maritsa - 95"- Catttels	0.0035	315	108.22	1.918
MA_M	220343	MLSP23 "DANIELA 90" - cattels	0.0025	315	108.22	1.918
MA_M	218610	MLSP24 "SVIKOM" JSCo - pigs	0.0278	109	55.21	10.116
MA_M	218612	MLSP25 "Ilma - Il" Ltd - hens	0.1528	10	5.48	1.644
MA_SAZ	56130	MLSP26 "Ayaks - 95" - pigs	0.0648	109	55.21	10.116
MA_SAZ	38795	MLSP27 "Mihaela - Vasilka Zhelyazkova" ST -pigs	0.0134	109	55.21	10.116
MA_BED	9453	MLSP28 "Agroslavyanin" PLC pigs	0.0090	109	55.21	10.116
MA_SAZ	38795	MLSP29 "TEDDI - COM" - pigs	0.0074	109	55.21	10.116
MA_SAZ	56900	MLSP30 "Apetit" PLC - poultry	0.2315	1	0.41	0.027
MA_STA	21623	MLSP31 "GRMI - H. Hiusein" ST pigs	0.0083	109	55.21	10.116
MA_STA	21624	MLSP32 "Angelov" ST hens	0.2778	10	5.48	1.644
MA_M	171718	MLSP33 "Oskar - Kiril Nikolov" ST - pigs	0.0261	109	55.21	10.116
MA_STA	7375	MLSP34 "Aerkok" PLC hens	0.1620	10	5.48	1.644
MA_M	148770	MLSP35 "Elit - 95", "Elit - Milk - 2000" - cattels	0.0506	315	108.22	1.918

Fertilizers use in districts 1999-2005. Non-point load in MIKE 11

	UTILIZED MINERAL FERTILIZERS BY DISTRICTS - IN TONS OF ACTIVE INGREDIENTS AND KG/DECARE (= kg/1000m2)						
No.	**District - 1999**						
		Nitrogen			**P_2O_5**		
		(tons)	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	2432.00	246200	9.88	360.00	18000	20.00
2	**Burgas**	3925.20	510650	7.69	117.75	12650	9.31
3	**Veliko Tarnovo**	5275.77	713343	7.40	200.20	28600	7.00
4	**Gabrovo**	942.66	123260	7.65	0.00	0	0.00
5	**Kardzhali**	623.30	103594	6.02	0.00	0	0.00
6	**Kyustendil**	1065.42	151316	7.04	58.74	4250	13.82
7	**Pazardzhik**	2388.90	333900	7.15	305.00	30500	10.00
8	**Pernik**	765.44	141621	5.40	1.85	225	8.22
9	**Plovdiv**	5529.95	639340	8.65	408.85	34568	11.83
10	**Sliven**	4121.84	551120	7.48	1.66	170	9.76
11	**Smolyan**	914.00	189000	4.84	9.44	1180	8.00
12	**Sofia - District**	1950.71	270932	7.20	270.90	31200	8.68
13	**Stara Zagora**	5138.02	794902	6.46	50.16	6510	7.71
14	**Haskovo**	3529.83	463070	7.62	0.00	0	0.00
15	**Yambol**	5399.39	656199	8.23	13.30	2600	5.12
Note: 1 hectar = 10 decars							
Remark: For "decars of of used agricultural land in 1999" the data from 2000 were applied, because information on 1999 was unavailable							

No.	**District 2000**						
		Nitrogen			**P_2O_5**		
		(tons)	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	1157.18	149700	7.73	156.75	27500	5.70
2	**Burgas**	6089.71	739043	8.24	120.00	15000	8.00
3	**Veliko Tarnovo**	4957.35	659222	7.52	315.00	45000	7.00
4	**Gabrovo**	873.65	117584	7.43	0.00	0	0.00
5	**Kardzhali**	571.55	94160	6.07	0.00	0	0.00
6	**Kyustendil**	1093.06	128143	8.53	61.77	4350	14.20
7	**Pazardzhik**	2756.60	308000	8.95	365.00	36500	10.00
8	**Pernik**	892.83	107700	8.29	5.16	540	9.56
9	**Plovdiv**	6731.03	745408	9.03	225.87	20875	10.82
10	**Sliven**	3844.46	484800	7.93	8.13	820	9.92
11	**Smolyan**	1046.15	203136	5.15	8.80	1100	8.00
12	**Sofia - District**	1890.90	231444	8.17	198.51	15400	12.89
13	**Stara Zagora**	8017.78	938850	8.54	14.40	1800	8.00
14	**Haskovo**	3697.40	505800	7.31	142.46	14747	9.66
15	**Yambol**	5014.80	611561	8.20	59.74	6016	9.93

No.	District 2001						
		Nitrogen			**P_2O_5**		
		(tons)	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	1587.09	171392	9.26	259.20	35900	7.22
2	**Burgas**	8425.13	1016300	8.29	465.56	45200	10.30
3	**Veliko Tarnovo**	6677.71	657902	10.15	0.00	0	0.00
4	**Gabrovo**	1155.79	76950	15.02	290.27	38600	7.52
5	**Kardzhali**	529.62	94744	5.59	0.00	0	0.00
6	**Kyustendil**	886.56	104179	8.51	36.16	2630	13.75
7	**Pazardzhik**	3308.76	289480	11.43	405.00	40500	10.00
8	**Pernik**	55.74	5670	9.83	8.41	970	8.67
9	**Plovdiv**	7044.06	764827	9.21	391.01	46660	8.38
10	**Sliven**	4281.31	540570	7.92	37.18	5100	7.29
11	**Smolyan**	1141.89	223900	5.10	255.10	32250	7.91
12	**Sofia - District**	2379.95	283327	8.40	180.42	14550	12.40
13	**Stara Zagora**	6472.71	700510	9.24	833.85	100950	8.26
14	**Haskovo**	4640.06	604175	7.68	83.64	8200	10.20
15	**Yambol**	5128.49	611262	8.39	28.95	3260	8.88

No.	District 2002						
		Nitrogen			**P_2O_5**		
		(tons)	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	2059.77	212786	9.68	317.28	34300	9.25
2	**Burgas**	10576.24	1126330	9.39	324.72	39600	8.20
3	**Veliko Tarnovo**	4800.93	948800	5.06	0.00	0	0.00
4	**Gabrovo**	907.57	122150	7.43	0.00	0	0.00
5	**Kardzhali**	845.07	144952	5.83	0.00	0	0.00
6	**Kyustendil**	653.07	92241	7.08	49.03	3470	14.13
7	**Pazardzhik**	2001.17	269700	7.42	0.00	0	0.00
8	**Pernik**	782.94	113800	6.88	0.90	94	9.56
9	**Plovdiv**	6975.41	785519	8.88	303.73	32141	9.45
10	**Sliven**	4464.47	593680	7.52	50.45	5550	9.09
11	**Smolyan**	1868.21	199382	9.37	815.33	123535	6.60
12	**Sofia - District**	2058.81	276722	7.44	111.50	11150	10.00
13	**Stara Zagora**	9170.86	1004475	9.13	139.01	18030	7.71
14	**Haskovo**	3560.28	456446	7.80	503.15	58100	8.66
15	**Yambol**	7776.37	978160	7.95	175.91	21690	8.11

No.	District 2003						
		Nitrogen			**P_2O_5**		
		(tons)	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	1750.91	182197	9.61	321.10	38000	8.45
2	**Burgas**	9133.26	1029680	8.87	131.10	16680	7.86
3	**Veliko Tarnovo**	11081.80	827000	13.40	18.40	2000	9.20
4	**Gabrovo**	1290.41	103150	12.51	0.00	0	0.00
5	**Kardzhali**	620.16	144897	4.28	9.40	470	20.00
6	**Kyustendil**	520.63	68594	7.59	47.00	3900	12.05
7	**Pazardzhik**	1855.07	199900	9.28	630.90	70100	9.00
8	**Pernik**	789.93	113823	6.94	7.33	856	8.56
9	**Plovdiv**	5668.67	713040	7.95	772.15	81279	9.50
10	**Sliven**	3348.83	461271	7.26	124.26	17187	7.23
11	**Smolyan**	641.30	53665	11.95	812.76	124275	6.54
12	**Sofia - District**	1774.76	252814.5	7.02	252.69	34240	7.38
13	**Stara Zagora**	7565.36	786420	9.62	0.00	0	0.00
14	**Haskovo**	4449.49	517383	8.60	420.93	58220	7.23
15	**Yambol**	5115.07	600360	8.52	160.84	19170	8.39
Remark: For "decars of of used agricultural land in 2003" the data from 2002 were applied, because information on 2003 was unavailable							

No.	District 2004						
		Nitrogen			**P_2O_5**		
		(tons)	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	1692.46	154000	10.99	195.70	25750	7.60
2	**Burgas**	8609.28	1014050	8.49	131.02	16950	7.73
3	**Veliko Tarnovo**	8918.91	1143450	7.80	654.50	81710	8.01
4	**Gabrovo**	574.57	88942	6.46	8.54	890	9.60
5	**Kardzhali**	666.98	135566	4.92	9.40	470	20.00
6	**Kyustendil**	535.98	72332	7.41	52.18	4330	12.05
7	**Pazardzhik**	1859.84	253040	7.35	648.06	72490	8.94
8	**Pernik**	957.89	141281	6.78	18.00	2000	9.00
9	**Plovdiv**	10090.96	924928	10.91	1008.32	102057	9.88
10	**Sliven**	4553.21	632390	7.20	77.34	8700	8.89
11	**Smolyan**	2879.09	201476	14.29	830.00	128483	6.46
12	**Sofia - District**	2672.42	327503	8.16	506.29	44256	11.44
13	**Stara Zagora**	9659.02	1095127	8.82	707.64	93480	7.57
14	**Haskovo**	6608.64	651098	10.15	0.00	0	0.00
15	**Yambol**	7202.80	896986	8.03	187.47	20970	8.94

No.	District 2005						
		Nitrogen			**P_2O_5**		
		(tons)	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	1524.01	141900	10.74	207.10	28300	7.32
2	**Burgas**	10569.44	1221900	8.65	128.13	25450	5.03
3	**Veliko Tarnovo**	5936.00	848000	7.00	182.00	26000	7.00
4	**Gabrovo**	579.70	105400	5.50	0.00	0	0.00
5	**Kardzhali**	575.83	129691	4.44	5.10	300	17.00
6	**Kyustendil**	568.35	79157	7.18	58.71	4830	12.16
7	**Pazardzhik**	2286.40	313635	7.29	517.90	74700	6.93
8	**Pernik**	726.20	123504	5.88	20.15	1850	10.89
9	**Plovdiv**	9528.90	918891	10.37	990.99	99253	9.98
10	**Sliven**	4672.83	640114	7.30	193.65	27064	7.16
11	**Smolyan**	3046.61	204333	14.91	929.96	136538	6.81
12	**Sofia - District**	1929.98	252615	7.64	136.32	12593	10.83
13	**Stara Zagora**	8976.24	1123434	7.99	735.21	100310	7.33
14	**Haskovo**	6695.85	595716	11.24	179.09	16053	11.16
15	**Yambol**	7920.31	979025	8.09	884.69	107613	8.22

No.	Average 1995-2005						
		Nitrogen			**P_2O_5**		
	Districts	*(tons)*	*(decars)*	*(kg/decar)*	*(tons)*	*(decars)*	*(kg/decar)*
1	**Blagoevgrad**	1743	179739	9.70	259.59	29679	9.36
2	**Burgas**	8189.75	951136	8.52	202.61	24504	8.06
3	**Veliko Tarnovo**	6806.92	828245	8.33	195.73	26187	5.46
4	**Gabrovo**	903.48	105348	8.86	42.69	5641	2.45
5	**Kardzhali**	633.22	121086	5.31	3.41	177	8.14
6	**Kyustendil**	760.44	99423	7.62	51.94	3966	13.17
7	**Pazardzhik**	2350.96	281094	8.41	410.27	46399	7.84
8	**Pernik**	710.14	106771	7.14	8.83	934	9.21
9	**Plovdiv**	7367.00	784565	9.29	585.85	59548	9.98
10	**Sliven**	4183.85	557706	7.52	70.38	9227	8.48
11	**Smolyan**	1648.18	182127	9.37	523.06	78194	7.19
12	**Sofia - District**	2093.93	270765	7.72	236.66	23341	10.52
13	**Stara Zagora**	7857.14	920531	8.54	354.32	45869	6.65
14	**Haskovo**	4740.22	541955	8.63	189.89	22189	6.70
15	**Yambol**	6222.46	761936	8.20	215.84	25903	8.23

Fertilizer used as an average for the period 1999-2005							
No.	**District**	**TN**	**TN**	**TP**	**TP**		
		kgN/year	**kgN/km2/y**	**kgP/year**	**kgP/km2/y**		
1	**Blagoevgrad**	1743345.5	9699.30142	103835.6	577.70119		
2	**Burgas**	8189751.6	8610.49351	81044.76	85.20837		
3	**Veliko Tarnovo**	6806923.4	8218.48734	78291.26	94.526663		
4	**Gabrovo**	903477.78	8576.12652	17075.2	162.08376		
5	**Kardzhali**	633215.75	5229.45885	1365.714	11.278852		
6	**Kyustendil**	760438.4	7648.50495	20776.29	208.96836		
7	**Pazardzhik**	2350963.7	8363.63364	164106.3	583.81385		
8	**Pernik**	710138.35	6651.02364	3531.331	33.073793		
9	**Plovdiv**	7366998	9389.91755	234338.8	298.68644		
10	**Sliven**	4183851.4	7501.88839	28152.91	50.4798		
11	**Smolyan**	1648177.7	9049.58503	209222.1	1148.7678		
12	**Sofia - District**	2093932.5	7733.38393	94664.51	349.61823		
13	**Stara Zagora**	7857140.9	8535.44279	141729.9	153.96539		
14	**Haskovo**	4740221.7	8746.51583	75957.81	140.15508		
15	**Yambol**	6222461.3	8166.64415	86336.55	113.31206		