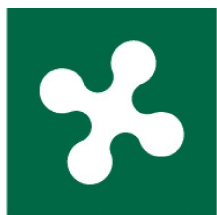




AUTORITA' DI BACINO DEL FIUME PO
PARMA



Regione Lombardia



Provincia di Sondrio

Analisi Idraulica sull'asta dell'Adda Sopralacuale
finalizzata alla redazione delle mappe di pericolosità
e del rischio alluvioni

Attuazione della direttiva 2007/60/CE a supporto del
progetto di variante generale del PAI

2.1 TABULATI DI OUTPUT DI HEC-RAS
TEMPO DI RITORNO 20 ANNI



Ing. Baggini Amos
l.go Sindelfingen n°9
Sondrio (SO)



Ing. Begnis Raffaella
via Ninguarda n°45
Morbegno (SO)

Description	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Max Chl Dpth	Crit Depth	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
337	70416.58	tr20	530	430	433.12	3.12	4.53	0.0140	9.53	55.61	21.18	1.88
335 bis - P.SS36 monte	70276.73	tr20	530	428.63	431.42	2.79	4.11	0.0122	9.34	56.72	23.48	1.86
Ponte SS38 - Tirano	70273 BR U	tr20	530	428.63	431.47	2.84	4.1	0.0125	9.17	57.82	21.75	1.73
	70273 BR D	tr20	530	428.57	431.48	2.91	4.12	0.0119	9	58.88	21.75	1.68
335 - P.SS36 valle	70261.73	tr20	530	428.57	431.49	2.92	4.13	0.0107	8.96	59.18	23.54	1.74
334bis - P.Martiri monte	70027.37	tr20	530	425.2	428.06	2.86	4.92	0.0160	9.34	56.72	24.25	1.95
Ponte via Martiri - Tirano	70024 BR U	tr20	530	425.2	428.11	2.91	4.94	0.0150	9.15	57.9	24.3	1.89
	70024 BR D	tr20	530	424.87	427.87	3	5.16	0.0158	9.27	57.15	24.06	1.92
334 - P.Martiri valle	70012.37	tr20	530	424.87	427.89	3.02	5.15	0.0154	9.2	57.63	24.08	1.9
333bis - P.via Del Commercio monte1	69554.94	tr20	530	420.43	423.52	3.09	3.94	0.0090	7.69	68.91	25.49	1.49
333bis - P.via Del Commercio monte2	69549.94	tr20	530	420.33	423.45	3.12	3.98	0.0091	7.73	68.59	25.44	1.5
Ponte via Commercio - Tirano	69545 BR U	tr20	530	420.33	423.46	3.13	3.98	0.0090	7.69	68.88	25.45	1.49
	69545 BR D	tr20	530	420.26	423.55	3.29	4.03	0.0079	7.4	71.64	25.51	1.41
333 - P.via Del Commercio valle3	69539.94	tr20	530	420.26	423.56	3.3	4.03	0.0078	7.36	71.99	25.52	1.4
333 - P.via Del Commercio valle4	69529.94	tr20	530	420.2	423.7	3.5	4.07	0.0066	6.96	76.13	25.62	1.29
332	68569.1	tr20	530	412.1	415.78	3.68	3.69	0.0036	5.56	95.33	30.37	1
331 bis - Poschiavino monte	68205.48	tr20	530	409.09	412.07	2.98	3.52	0.0065	6.57	80.68	31.84	1.32
331-Ponschavino valle	67695.08	tr20	595	404.8	408.45	3.65	3.65	0.0035	4.82	183.24	158.45	0.97
330	67222.66	tr20	595	401	404.33	3.33	4.28	0.0117	6.62	89.95	35.77	1.33
329	66719.98	tr20	595	398.2	400.97	2.77	2.77	0.0065	4.97	119.8	47.44	1
328	66357.62	tr20	595	395.3	398.49	3.19	3.2	0.0065	5.16	115.36	43	1.01
326 cambio tiles - Ponte Stazzona	65890.16	tr20	595	392.55	396.57	4.02	3.13	0.0029	3.92	151.98	42.86	0.66
326 - Ponte Stazzona monte	65880.16	tr20	595	392.5	396.52	4.02	3.19	0.0030	3.96	150.11	42.82	0.68
Ponte Stazzona	65875 BR U	tr20	595	392.5	395.85	3.35	3.35	0.0088	5.25	113.42	40.27	1
	65875 BR D	tr20	595	392.45	395.41	2.96	3.24	0.0119	5.83	102.04	40.04	1.17
326 - Ponte Stazzona valle	65870.16	tr20	595	392.45	394.97	2.52	3.07	0.0138	6.45	92.25	41.68	1.38
326 - Ponte Stazzona valle	65850.16	tr20	595	392.35	395.72	3.37	3.13	0.0053	4.77	124.65	42.33	0.89
325	65183.16	tr20	595	388.2	391.8	3.6	3.6	0.0066	4.75	125.13	54.05	1
324	64666.12	tr20	595	384.5	388.4	3.9	2.98	0.0021	2.41	247.31	127.33	0.55
323	64275.72	tr20	595	382.8	386.56	3.76	3.19	0.0065	3.84	154.88	68.58	0.82
322bis - inizio argini	63857.53	tr20	595	380.4	383.82	3.42	3.13	0.0067	3.73	159.3	75.63	0.82
322	63538.97	tr20	595	379	382.46	3.46	2.95	0.0040	2.61	228.21	125.72	0.62
321	62946.09	tr20	595	375.6	378.44	2.84	2.83	0.0115	3.42	174.17	142.14	0.99
320	62395.7	tr20	595	372.8	376.09	3.29	2.6	0.0026	1.95	304.59	189.07	0.49
319	62195.97	tr20	595	372.3	374.72	2.42	2.42	0.0121	3.31	179.71	159.62	1
318bis - Sbocco Belviso	61779.57	tr20	627	370.3	374.32	4.02	2.35	0.0004	0.96	652.76	297.86	0.21
318	61396	tr20	627	369.2	373.91	4.71	3.14	0.0011	2.13	369.16	173.69	0.36
317 bis - Passerella Teglio monte	61168.77	tr20	627	368.58	372.79	4.21	3.62	0.0050	3.98	157.58	52.17	0.73
Passerella Teglio	61167 BR U	tr20	627	368.58	372.76	4.18	3.62	0.0051	4.01	156.45	52.14	0.74
	61167 BR D	tr20	627	368.52	372.74	4.22	3.68	0.0052	4.03	155.51	52.1	0.74

Description	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Max Chl Dpth	Crit Depth	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
317 - Passerella Teglio valle	61158.77	tr20	627	368.52	372.66	4.14	3.68	0.0056	4.14	151.42	52	0.77
316ter - Ponte SP39 monte1	61059.81	tr20	627	368.1	372.33	4.23	3.37	0.0038	3.72	168.71	50.69	0.65
316ter - Ponte SP39 monte2	61053.81	tr20	627	368.05	372.2	4.15	3.42	0.0042	3.96	158.24	50.53	0.69
Ponte SP39 - Teglio	61050 BR U	tr20	627	368.05	372.19	4.14	3.42	0.0045	3.97	157.91	47.42	0.69
	61050 BR D	tr20	627	368	372.07	4.07	3.46	0.0050	4.1	152.75	47.39	0.73
316ter - Ponte SP39 valle3	61039.81	tr20	627	368	372.06	4.06	3.46	0.0048	4.11	152.38	50.36	0.73
316ter - Ponte SP39 valle4	61029.81	tr20	627	367.95	372.04	4.09	3.5	0.0049	4.03	155.56	50.33	0.73
316bis - ponte Falk25 monte1	60991.73	tr20	627	367.43	372.13	4.7	3.38	0.0025	3.18	197.07	52.5	0.52
316bis - ponte Falk25 monte2	60981.73	tr20	627	367.4	372.08	4.68	3.38	0.0025	3.24	193.67	52.48	0.53
Ponte Falck - Teglio	60975 BR U	tr20	627	367.4	371.24	3.84	3.84	0.0145	5.04	124.41	47.67	1
	60975 BR D	tr20	627	367.38	371.24	3.86	3.86	0.0118	5.05	124.17	47.67	1
316bis - ponte Falk25 valle3	60972.73	tr20	627	367.38	370.12	2.74	3.4	0.0200	6.71	93.42	48.05	1.54
316bis - ponte Falk25 valle4	60952.73	tr20	627	367.35	370.98	3.63	3.44	0.0063	4.56	137.6	52.04	0.89
316	60769.6	tr20	627	366.7	370.51	3.81	3.18	0.0034	3.29	190.67	76.6	0.67
315	60146.31	tr20	627	365.2	368.9	3.7	2.55	0.0022	3.02	207.44	67.13	0.55
314	59495.97	tr20	627	364	367.11	3.11	2.6	0.0037	3	210.26	109.77	0.67
313bis	59083.43	tr20	627	362.8	366.7	3.9	2.49	0.0008	1.68	373.92	144.98	0.33
313	58635.73	tr20	627	361.7	365.78	4.08	2.7	0.0019	3.09	202.73	57.35	0.53
312	57987.43	tr20	627	359.8	363.87	4.07	3.72	0.0046	3.23	194.11	100.46	0.74
311 - Sbocco Margatta	57495.18	tr20	627	358	362.51	4.51	3.19	0.0021	2.74	228.45	83.13	0.53
310	56954.99	tr20	627	357.5	362.29	4.79	2.91	0.0004	1.33	611.66	345.45	0.25
309bis - S.Giacomo passerella monte	56388.31	tr20	627	356	361.43	5.43	3.88	0.0017	2.99	209.39	60.19	0.5
S.Giacomo - Passerella	56385 BR U	tr20	627	356	361.4	5.4	3.9	0.0022	3.07	203.99	55.24	0.51
	56385 BR D	tr20	627	356	361.39	5.39	3.9	0.0022	3.08	203.54	55.23	0.51
309 - S.Giacomo passerella valle	56378.31	tr20	627	356	361.4	5.4	3.88	0.0017	3.02	207.34	60.11	0.5
308bis - ponte Teglio S.giacomo 23 monte1	56223.34	tr20	627	355.87	360.58	4.71	3.93	0.0037	4.11	152.59	43.36	0.7
308bis - ponte Teglio S.giacomo 23 monte2	56216.34	tr20	627	355.82	360.53	4.71	3.98	0.0039	4.17	150.53	43.34	0.71
Ponte S.Giacomo	56210 BR U	tr20	627	355.82	359.9	4.08	4.08	0.0109	5.42	115.66	38.39	1
	56210 BR D	tr20	627	355.78	359.89	4.11	4.11	0.0109	5.42	115.59	38.38	1
308 - ponte Teglio S.giacomo 23 valle3	56203.34	tr20	627	355.78	359.34	3.56	4.01	0.0137	6.25	100.29	41.65	1.29
308 - ponte Teglio S.giacomo 23 valle4	56188.34	tr20	627	355.75	359.78	4.03	4.03	0.0080	5.27	119.05	42.04	1
307 - Sbocco Malgina	56037.03	tr20	665	353.9	359.41	5.51	4.46	0.0027	3.6	184.57	53.86	0.62
306	55582.46	tr20	665	353.2	356.74	3.54	3.54	0.0076	5.1	130.5	49.24	1
305bis	55377.56	tr20	665	352.3	356.92	4.62	3.12	0.0011	1.91	349.05	136.7	0.38
305	55103.97	tr20	665	351.2	355.47	4.27	3.83	0.0048	4.45	149.33	48.29	0.81
304	54645.56	tr20	665	349.7	353.51	3.81	3.28	0.0042	4.08	162.86	54.94	0.76
304 bis	54242.18	tr20	665	348.95	353.77	4.82	2.15	0.0003	0.92	725.31	337.7	0.2
303	53930.38	tr20	665	348.3	353.54	5.24	3.33	0.0006	1.74	522.75	301.75	0.3
302	53508.66	tr20	665	347.2	352.93	5.73	3.47	0.0017	2.51	264.43	94.1	0.48
301	53078.66	tr20	665	347.5	352.63	5.13	3.06	0.0006	1.77	568.89	364.92	0.3

Description	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Max Chl Dpth	Crit Depth	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
300bis Sbocco Fontana	52662.35	tr20	698	347.2	352.49	5.29		0.0003	1.41	797.94	423.65	0.23
300 ponte Baghetto monte	52408.32	tr20	698	346.93	351.65	4.72	3.6	0.0024	3.66	190.61	70.34	0.6
Ponte Baghetto - Castello dell'Acqua	52405 BR U	tr20	698	346.93	351.27	4.34	3.81	0.0062	4.48	155.92	45.84	0.77
	52405 BR D	tr20	698	346.93	351.16	4.23	3.81	0.0069	4.62	150.99	45.8	0.81
300 ponte Baghetto valle	52398.32	tr20	698	346.93	351.35	4.42	3.6	0.0032	3.97	175.62	63.69	0.67
299bis traversa Baghetto monte	52235.62	tr20	698	347.12	351.42	4.3	2.28	0.0011	2.41	298.44	130.21	0.39
Traversa Baghetto	52222		Inl Struct									
299 valle traversa Baghetto 1	52216.8	tr20	698	347	351.41	4.41	2.31	0.0013	1.71	580.85	351.06	0.27
299 valle traversa Baghetto 2	52106.8	tr20	698	346.9	351.4	4.5	2.31	0.0013	1.7	582.65	350.75	0.27
298bis	52022.2	tr20	698	344.7	351.07	6.37		0.0015	2.02	434.86	206.84	0.3
298	51685.96	tr20	698	344.1	349.62	5.52	4.21	0.0063	3.65	191.27	48.23	0.58
297bis	51361.24	tr20	698	342.82	348.04	5.22		0.0046	2.96	236.84	76.48	0.5
297 - sbocco Armisa	51151.41	tr20	720	342	346.43	4.43		0.0083	3.89	199.93	93.08	0.67
296	50812.99	tr20	720	337.5	345.14	7.64		0.0027	3	240.28	40.01	0.39
295bis Ponte Sazzo monte1	50772.51	tr20	720	336.77	344.74	7.97		0.0052	3.68	195.8	37.42	0.51
295bis Ponte Sazzo monte2	50762.51	tr20	720	336.72	343.48	6.76	5.9	0.0107	5.88	122.37	33.09	0.78
Ponte Sazzo - Ponte in Valtellina	50760 BR U	tr20	720	336.72	343.45	6.73	5.9	0.0109	5.91	121.78	21.3	0.79
	50760 BR D	tr20	720	336.68	343.21	6.53	5.93	0.0201	6.17	116.78	21.3	0.84
295bis Ponte Sazzo valle3	50754.51	tr20	720	336.68	342.61	5.93	5.93	0.0295	6.92	104.04	30.45	1
295bis Ponte Sazzo valle4	50739.51	tr20	720	336.62	341.75	5.13	5.71	0.0558	7.25	99.34	29.6	1.26
295	50726.36	tr20	720	336.5	342.29	5.79	4.44	0.0140	4.42	162.83	36.69	0.67
294bis	50308.8	tr20	720	332	335.92	3.92	3.7	0.0258	4.86	148.13	50.3	0.9
294	50008.91	tr20	720	325.8	331.67	5.87		0.0103	3.57	201.54	52.89	0.58
293ter	49692.43	tr20	720	321.86	326.88	5.02		0.0189	4.62	155.91	42.14	0.77
293 - Ponte Boffetto	49378.43	tr20	720	312.64	321.35	8.71	7.33	0.0141	5.39	133.56	31.32	0.69
Ponte Boffetto - Piateda	49365 BR U	tr20	720	312.64	321.19	8.55	7.33	0.0218	5.61	128.23	18.2	0.61
	49365 BR D	tr20	720	312.64	321.07	8.43	7.33	0.0127	5.71	126.02	18.64	0.63
293bis - Boffetto Valle	49359.99	tr20	720	312.64	320.73	8.09	7.33	0.0112	5.98	120.41	22.9	0.8
292	49257.83	tr20	720	314.92	319.56	4.64	4.35	0.0153	5.6	128.48	32.01	0.89
291	49049.76	tr20	720	312.3	316.18	3.88	3.88	0.0183	5.37	134.07	45.33	1
290	48641.07	tr20	720	307	311.58	4.58	3.16	0.0044	3.15	239.13	92.06	0.52
289 - Ponte Streppona monte	48619.36	tr20	720	306.2	311.15	4.95	4	0.0067	3.92	183.68	55.38	0.64
Ponte Piateda - Streppona	48615 BR U	tr20	720	306.2	310.4	4.2	4.2	0.0260	5.46	131.9	43.41	1
	48615 BR D	tr20	720	306.2	310.4	4.2	4.2	0.0085	5.46	131.9	43.41	1
289bis - Ponte Streppona valle	48609.36	tr20	720	306.2	309.66	3.46	4	0.0118	6.5	110.8	52.43	1.38
288	48162.86	tr20	720	303	306.55	3.55	3.57	0.0060	5.15	139.93	55.23	1
287	47656.41	tr20	720	299.36	302.44	3.08	3.49	0.0089	5.85	122.98	51.15	1.21
287 bis	47597.2	tr20	720	298.93	303.14	4.21	3.97	0.0032	3.49	206.07	114.91	0.83
Attivazione esondazione Amonini	47580		Lat Struct									
286 bis	47489.4	tr20	720	298.16	301.93	3.77	3.77	0.0060	5.05	142.52	54.87	1

Description	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Max Chl Dpth	Crit Depth	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
286	47142.3	tr20	720.01	296.38	300.08	3.7	3.09	0.0028	3.27	220.16	91.12	0.67
285bis - Ponte Piaveda Amonini monte1	46860.92	tr20	720.01	294.15	299.3	5.15	4.33	0.0024	3.42	210.31	72.01	0.64
285bis - Ponte Piaveda Amonini monte2	46855.92	tr20	720.01	294.09	299.28	5.19	4.38	0.0024	3.44	209.28	71.99	0.64
Ponte Piaveda - Amonini	46850 BR U	tr20	720.01	294.09	299.05	4.96	4.54	0.0046	4	180.03	68.8	0.79
	46850 BR D	tr20	720.01	294.05	298.7	4.65	4.57	0.0067	4.6	156.37	65.78	0.95
285 - Ponte Piaveda Amonini valle3	46842.92	tr20	720.01	294.05	298.88	4.83	4.42	0.0039	3.99	180.47	71.53	0.8
285 - Ponte Piaveda Amonini valle4	46832.92	tr20	720.01	294	298.46	4.46	4.46	0.0063	4.73	152.09	66.73	1
284	46726.23	tr20	720.01	294	297.86	3.86	2.74	0.0014	2.65	271.5	94.87	0.5
283bis	46528.25	tr20	720.01	293.09	296.47	3.38	3.24	0.0054	4.3	167.36	75.09	0.92
283	46007.19	tr20	720.01	290.5	294.76	4.26	3.88	0.0027	3.42	210.38	98.79	0.75
282	45505.73	tr20	720.01	289.1	292.41	3.31	3.31	0.0047	4.69	153.47	68.23	1
281 bis	45158.45	tr20	720.01	287.8	292.36	4.56	3.13	0.0009	2.12	339.62	146.61	0.44
281 monte confluenza	44950	tr20	720.01	286.5	291.97	5.47	3.52	0.0008	2.84	253.43	64.02	0.46
281	44900.92	tr20	720	286.5	291.92	5.42	3.52	0.0009	2.88	249.92	63.56	0.46
280bis Ponte Montagna - Busteggia monte	44700.7	tr20	720	286.29	291.7	5.41	4.05	0.0011	2.95	244.31	70.4	0.5
Ponte di Busteggia - Montagna	44690 BR U	tr20	720	286.29	291.52	5.23	4.31	0.0020	3.44	209.31	66.23	0.62
	44690 BR D	tr20	720	286.29	291.51	5.22	4.31	0.0021	3.45	208.7	66.2	0.62
280bis Ponte Montagna - Busteggia valle	44685.7	tr20	720	286.29	291.59	5.3	4.05	0.0012	3.04	236.56	70.05	0.53
280	44639.55	tr20	720	286	291.63	5.63	4.18	0.0010	2.59	280.2	103.65	0.47
279 ter	44425.15	tr20	720	285.8	291.59	5.79	3.77	0.0005	1.99	361.07	105.71	0.34
279bis - Passerella pedonale Faedo monte Venina	44170.02	tr20	815	285.57	290.8	5.23	4.19	0.0018	3.71	219.41	66.28	0.65
Passerella Faedo	44165 BR U	tr20	815	285.57	290.79	5.22	4.18	0.0018	3.72	218.87	66.26	0.65
	44165 BR D	tr20	815	285.57	290.79	5.22	4.18	0.0019	3.73	218.48	66.25	0.66
279 - Passerella pedonale Faedo valle	44160.02	tr20	815	285.57	290.77	5.2	4.19	0.0019	3.75	217.49	66.22	0.66
278	43733.09	tr20	815	284.8	290.62	5.82	3.85	0.0007	2.28	357.7	98.52	0.38
277bis	43319.65	tr20	815	284.5	289.96	5.46	4.08	0.0014	3.17	257.39	71.1	0.53
277	42871.19	tr20	815	284.3	289.99	5.69	2.44	0.0003	1.57	537.13	202.28	0.24
276 bis	42490.98	tr20	815	284.1	289.81	5.71	3.55	0.0008	1.63	501.28	262.62	0.38
276	42401.2	tr20	815	284	289.45	5.45	4.18	0.0039	2.57	316.8	268.22	0.76
275bis	42335.6	tr20	815	283.95	289.52	5.57	2.96	0.0007	1.51	539.52	276.08	0.34
275	41783.62	tr20	815	283.5	288.82	5.32	3.81	0.0014	2.28	356.92	167.27	0.5
274 - Ponte Albosaggia monte	41445.61	tr20	815	281.05	288.37	7.32	4.77	0.0009	2.55	319.77	89.22	0.43
Ponte Albosaggia	41440 BR U #1	tr20	815	281.05	288.31	7.26	4.92	0.0014	2.74	297.82	85.94	0.47
	41440 BR D #1	tr20	815	281.05	288.3	7.25	4.92	0.0014	2.75	296.46	85.92	0.47
274 bis - Ponte Albosaggia valle	41430.61	tr20	815	281.05	288.33	7.28	4.77	0.0009	2.58	315.66	89.16	0.44
273	41390.1	tr20	815	281.9	288.28	6.38	4.11	0.0011	2.61	311.97	98.9	0.47
Attivazione colarote	41370		Lat Struct									
273 bis - sbocco fosso colatore	41265.23	tr20	815	282.25	288.21	5.96	3.92	0.0008	2.31	352.08	105.25	0.4
272 ter Passerella Albosaggia monte	40821.2	tr20	815	281.71	286.56	4.85	4.39	0.0032	4.81	169.27	51.91	0.85
Passerella Albosaggia	40818 BR U	tr20	815	281.71	286.52	4.81	4.39	0.0033	4.87	167.21	51.67	0.86

Description	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Max Chl Dpth	Crit Depth	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
	40818 BR D	tr20	815	281.71	286.44	4.73	4.39	0.0036	5	162.88	51.17	0.9
272 bis Passerella Albosaggia valle	40811.2	tr20	815	281.71	286.1	4.39	4.39	0.0045	5.55	146.72	46.68	1
Sottopassi tangenziale	40800		Lat Struct									
272	40738.76	tr20	815	281.9	285.34	3.44	3.81	0.0068	6.11	133.28	51.67	1.22
271 BIS - Sottopasso sentiero valtellina	40570.34	tr20	815	281.56	285.27	3.71	3.43	0.0033	4.8	169.79	55.01	0.87
271	40459.23	tr20	815	281.34	285.09	3.75	3.22	0.0026	4.36	186.91	57.6	0.77
270 - Mallero	40041.4	tr20	980	280.9	284.73	3.83	2.8	0.0013	2.89	338.59	118.47	0.55
269bis	39652.09	tr20	980	279.35	284.34	4.99	2.82	0.0013	2.28	440.22	138.44	0.36
269ter - fine rilevato tangenziale	39650	tr20	980	279.35	284.34	4.99	2.82	0.0013	2.29	439.75	138.33	0.36
269	39204.96	tr20	980	277.8	282.86	5.06	4.36	0.0053	3.66	267.81	92.87	0.69
268bis	38813.32	tr20	980	277.1	281.5	4.4	3.33	0.0031	2.8	350.23	120.24	0.52
268	38446.99	tr20	980	276.2	280.42	4.22	3.19	0.0030	2.71	447.17	270.54	0.51
267	37978.62	tr20	980	274.1	279.44	5.34	3.75	0.0018	2.15	455.35	152.33	0.4
266 - Liro	37597.5	tr20	980	272.95	278.73	5.78	3.55	0.0019	2.25	443.14	168.1	0.41
265 bis - Ponte Caiolo monte	37328.05	tr20	980	271.79	277.9	6.11	4.85	0.0030	2.9	337.48	107.61	0.52
Ponte Caiolo SP	37318 BR U	tr20	980	271.79	277.87	6.08	4.84	0.0033	2.97	330.44	104.21	0.53
	37318 BR D	tr20	980	271.79	277.82	6.03	4.84	0.0034	3.01	325.31	104.21	0.54
265 - Ponte Caiolo valle	37308.05	tr20	980	271.79	277.8	6.01	4.85	0.0034	3	326.79	107.61	0.55
264+ valle ponte caiolo	37256.1	tr20	980	271.7	277.51	5.81	4.25	0.0014	3.51	278.91	66.86	0.55
236ter	36838.79	tr20	980	272.1	277.07	4.97	3.47	0.0012	3.04	321.93	86.85	0.5
263 bis fine argine dx	36436.18	tr20	980	271.2	276.16	4.96	3.77	0.0018	3.85	254.51	64.79	0.62
263	36426.18	tr20	980	270.7	276.21	5.51	3.96	0.0014	3.57	274.56	65.02	0.55
262 bis	36232.3	tr20	980	270.6	276.02	5.42	3.78	0.0015	3.21	304.87	88.53	0.55
262	35958.49	tr20	980	270.3	275.58	5.28	3.72	0.0014	3.33	294.48	75.84	0.54
261	35461.65	tr20	980	270.3	274.87	4.57	3.35	0.0017	3.14	312.25	104	0.58
260	34974.6	tr20	980	269.7	274.74	5.04	3.12	0.0005	1.7	702.27	365.68	0.3
259	34623.62	tr20	980	268.2	274.63	6.43	4.26	0.0003	1.44	715.4	274.75	0.25
258bis	34181.11	tr20	980	267.8	274.34	6.54	4.07	0.0005	2.16	560.47	283.43	0.32
258	33776.56	tr20	980	267.3	273.59	6.29	4.74	0.0016	3.5	317.9	172.37	0.58
257 - sbocco cervio	33116.71	tr20	998	266.5	272.36	5.86	4.72	0.0019	3.7	269.56	74.19	0.62
256	32535.45	tr20	998	266.5	271.88	5.38	3.36	0.0009	2.67	374.46	95.58	0.43
255	31891.96	tr20	998	265.8	271.3	5.5	3.58	0.0011	2.46	405.36	139.77	0.46
254	31455.8	tr20	998	265.5	271.13	5.63	2.91	0.0004	1.85	677.84	320.72	0.3
253 ter Ponte Berbenno monte	31375.66	tr20	998	264.06	270.95	6.9	4.6	0.0006	2.31	431.41	109.33	0.37
Ponte Berbenno - Colorina	31370 BR U	tr20	998	264.06	270.9	6.84	4.69	0.0012	2.5	399.96	103.68	0.41
	31370 BR D	tr20	998	264.06	270.89	6.84	4.69	0.0012	2.5	399.12	103.66	0.41
253 bis Ponte Berbenno valle	31360.66	tr20	998	264.06	270.92	6.86	4.6	0.0007	2.33	427.42	109.22	0.38
253	31304.81	tr20	998	265.3	270.89	5.59	3.25	0.0006	2.28	437.82	113.53	0.37
252 - sbocco madrasco	30999.98	tr20	1006	266.2	270.54	4.34	2.67	0.0011	2.65	400.68	168.94	0.47
251	30634.42	tr20	1006	265.2	270.37	5.17	3.38	0.0006	1.85	542.4	185.97	0.35

Description	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Max Chl Dpth (m)	Crit Depth (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
250bis	30200.8	tr20	1006	264.8	269.89	5.09	3.79	0.0009	2.75	523.66	317.22	0.44
250 - sbocco presio	29847.31	tr20	1006	264.3	269.67	5.37	3.64	0.0007	2.25	566.88	305.54	0.38
249bis	29472.36	tr20	1006	264	269.41	5.47	3.63	0.0007	2.41	623.11	367.77	0.38
249	28871.36	tr20	1006	264.1	269.19	5.35	2.57	0.0003	1.87	680.99	257.71	0.28
248	28421.39	tr20	1006	263.8	268.99	5.19	2.72	0.0003	1.98	508.64	139.4	0.33
247	27928.68	tr20	1006	263.7	268.75	5.96	2.91	0.0004	2.24	476.87	136	0.36
246	27513.04	tr20	1006	263.85	268.46	6.01	3.08	0.0006	2.54	396.45	117.79	0.44
245ter - Ponte SELVETTA monte	27108.14	tr20	1006	263.25	268.13	5.61	3.36	0.0007	2.74	367.41	114.75	0.46
Ponte Forcola Selvetta	27103 BR U #1	tr20	1006	263.25	268.1	4.85	3.41	0.0009	2.84	353.99	97.7	0.48
	27103 BR D #1	tr20	1006	263.25	268.1	4.84	3.41	0.0009	2.85	353.42	97.7	0.48
245bis - Ponte SELVETTA valle	27098.14	tr20	1006	263.25	268.11	5.59	3.36	0.0007	2.76	365.05	114.67	0.46
245	27076.49	tr20	1006	263.25	268.18	5.44	2.78	0.0005	2.34	430.63	114.45	0.38
244	26388.33	tr20	1006	263	268.05	6.15	2.51	0.0002	1.64	612.58	172.08	0.28
243	25791.38	tr20	1006	262.8	267.57	6.15	3.18	0.0007	2.65	379.35	108.76	0.45
242bis - Ponte sirta monte	25198.79	tr20	1006	262.45	266.82	5.97	3.16	0.0011	3.4	296.3	99.58	0.59
Ponte Forcola - Sirta	25195 BR U #1	tr20	1006	262.45	266.69	4.24	3.27	0.0022	3.72	270.63	82.76	0.66
	25195 BR D #1	tr20	1006	262.45	266.66	4.21	3.27	0.0023	3.75	268.47	82.76	0.66
242bis - Ponte sirta valle	25188.79	tr20	1006	262.45	266.73	5.88	3.16	0.0012	3.49	288.46	99.2	0.61
242	25122.85	tr20	1006	262.2	266.73	6.2	3.18	0.0011	3.16	318.32	100.9	0.57
241	24108.9	tr20	1006	261.2	265.7	6.54	2.86	0.0010	2.82	357.36	128.5	0.54
240bis traversa ardenno monte	23536.71	tr20	1006	258.73	265.64	6.91	2.82	0.0002	2.01	499.3	87.14	0.25
Traversa Ardenno	23530		Inl Struct									
240ter traversa ardenno valle	23520	tr20	1006	258.73	262.17	3.44	2.82	0.0018	4.15	242.59	77.38	0.73
240	23084.77	tr20	1006	256.8	261.75	4.95	3.64	0.0014	3.14	323.6	91.19	0.52
239ter Sbocco Masino	22818.45	tr20	1050	256.5	261.45	4.95	3.33	0.0012	2.91	360.88	94.92	0.48
239bis - Ponte Ardenno SS38 monte	22791.13	tr20	1050	256.17	261.51	5.34	3.23	0.0008	2.45	428.16	104.38	0.39
Ponte Ardenno SS38	22781 BR U	tr20	1050	256.17	261.46	5.29	3.34	0.0011	2.63	399.37	99.42	0.42
	22781 BR D	tr20	1050	256.17	261.44	5.27	3.34	0.0012	2.64	397.62	99.36	0.42
239bis - Ponte Ardenno SS38 valle	22771.13	tr20	1050	256.17	261.46	5.29	3.23	0.0008	2.48	423.41	104.24	0.39
239	22706.4	tr20	1050	255.9	261.49	5.59	3.37	0.0006	2.08	504.51	127.13	0.33
238bis	22385.85	tr20	1050	255.5	261.07	5.57	3.71	0.0010	2.76	380.98	94.74	0.44
238	21992.21	tr20	1050	255.2	260.06	4.86	4.01	0.0025	3.88	270.59	79.63	0.67
237 bis	21694.56	tr20	1050	254.3	258.36	4.06	4.06	0.0061	5.19	208.68	80.17	1.01
237 - ponte ferrovia monte Tartano	21405.31	tr20	1055	250.99	256.23	5.24	3.88	0.0018	3.82	275.96	63.22	0.58
Ponte ferrovia - Talamona	21400 BR U #1	tr20	976.76	250.99	255.21	4.22	3.74	0.0062	5.78	169.12	34.96	0.9
	21400 BR D #1	tr20	976.76	250.99	254.73	3.74	3.74	0.0085	6.41	152.35	36.31	1.06
237 - ponte ferrovia valle	21395.31	tr20	1055	250.99	254.87	3.88	3.88	0.0058	5.52	191.07	61.27	1
236	20967.54	tr20	1055	246.2	249.36	3.16	4.02	0.0185	7.49	140.81	70.41	1.69
235ter - Ponte PANIGA monte1	20370.15	tr20	1055	240.48	244.73	4.25	3.76	0.0034	4.25	248.22	81.61	0.78
235ter - Ponte PANIGA monte2	20365.14	tr20	1055	240.43	244.68	4.25	3.79	0.0035	4.31	244.83	81.38	0.79

Description	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Max Chl Dpth	Crit Depth	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Ponte di Paniga - Morbegno	20360 BR U	tr20	1055	240.43	244.68	4.25	3.8	0.0036	4.32	244.33	81.35	0.8
	20360 BR D	tr20	1055	240.38	244.63	4.25	3.85	0.0037	4.38	240.76	81.12	0.81
235bis - Ponte PANIGA valle3	20358.14	tr20	1055	240.38	244.62	4.24	3.84	0.0038	4.39	240.19	81.09	0.81
235bis - Ponte PANIGA valle4	20348.14	tr20	1055	240.33	244.22	3.89	3.89	0.0059	5.06	208.48	79.57	1
235 - valle paniga	20280.79	tr20	1055	238.9	241.86	2.96	3.86	0.0189	7.49	140.84	72.26	1.71
234	19774.77	tr20	1055	235.1	238.49	3.39	3.39	0.0062	4.64	227.44	103.64	1
233	19088.84	tr20	1055	229.3	233.03	3.73	4.01	0.0088	5.41	194.93	90.75	1.18
232bis	18588.35	tr20	1055	227.16	230.03	2.87	2.87	0.0061	4.83	218.61	92.13	1
232	18116.05	tr20	1055	223.88	228.09	4.21	3.89	0.0042	3.21	328.25	192.65	0.79
231 bis - nostra 23	17746.89	tr20	1055	223	227.95	4.95	3.11	0.0005	1.39	760.56	345.49	0.3
231 - nostra 16	17382.55	tr20	1055	221.9	227.43	5.53	4.93	0.0019	2.26	466.91	261.86	0.54
230 quater - nostra 10	17182.01	tr20	1055	221.04	227.06	6.02	3.92	0.0009	2.7	391.18	91.94	0.42
230 ter - nostra 6	17012.94	tr20	1055	220.7	226.42	5.72	4.04	0.0016	3.9	276.17	65.66	0.55
230bis ponte di Ganda monte	16858.19	tr20	1055	220.72	226.31	5.59	3.58	0.0011	3.51	300.18	66.26	0.49
Ponte di Ganda - Morbegno	16855 BR U	tr20	1055	220.72	225.93	5.2	3.93	0.0033	4.38	240.86	49.31	0.61
	16855 BR D	tr20	1055	220.61	225.94	5.33	3.99	0.0018	4.3	245.55	49.62	0.59
230 ponte di Ganda valle	16848.19	tr20	1055	220.61	226.14	5.53	3.65	0.0008	3.58	294.85	57.43	0.5
229	16797.43	tr20	1055	220	225.23	5.23	4.64	0.0022	5.27	200.08	47.04	0.82
229 bis	16606.63	tr20	1055	219.2	224.75	5.55	5.01	0.0023	5.37	196.36	46.62	0.84
229 ter	16411.55	tr20	1055	218.8	224.69	5.89	4.77	0.0015	4.54	233.49	57.63	0.68
228quater - Ponte Morbegno via Forestale monte	16321.78	tr20	1055	218.43	224.82	6.39	4.52	0.0009	3.76	281.55	59.63	0.54
Ponte Morbegno via Forestale	16315 BR U	tr20	1055	218.43	224.61	6.18	4.77	0.0016	4.21	251.22	56.54	0.62
	16315 BR D	tr20	1055	218.43	224.58	6.15	4.77	0.0016	4.23	249.64	56.42	0.63
228ter - Ponte Morbegno via Forestale valle	16303.78	tr20	1055	218.43	224.69	6.26	4.52	0.0010	3.86	273.77	59.07	0.56
228bis - Monte soglia	16264.77	tr20	1055	219.77	223.61	3.84	3.84	0.0034	5.74	183.84	54.89	1
228 - Valle soglia	16243.28	tr20	1055	219.22	222.56	3.34	3.96	0.0062	7.07	149.3	51.57	1.33
227bis - Bitto monte	15788.23	tr20	1055	216.86	221.06	4.2	4.21	0.0035	5.84	180.67	52.74	1.01
227 - Bitto valle	15669.61	tr20	1065	216.2	220.13	3.93	4.34	0.0051	6.47	164.66	55.54	1.2
226 BIS	15153.21	tr20	1065	214.8	218.66	3.86	3.68	0.0059	4.64	229.37	85.69	0.91
226	14885.8	tr20	1065	213.2	217.87	4.67	3.86	0.0030	3.6	296.12	96.73	0.66
225bis	14623.84	tr20	1065	212.6	217.12	4.52	3.37	0.0024	3.68	289.16	79.11	0.61
225	14219.59	tr20	1065	211.5	215.13	3.63	3.35	0.0052	4.94	215.69	67.27	0.88
224	13835.8	tr20	1065	210.3	214.49	4.19	2.91	0.0021	2.93	363.16	126.31	0.55
223	13389.61	tr20	1065	208.3	213.76	5.46	4.14	0.0015	2.64	403.18	128.02	0.48
222ter - ponte TRAONA monte	13199.27	tr20	1065	208.83	213.17	4.34	3.47	0.0026	3.31	321.91	108.66	0.61
Ponte Cosio - Traona SP	13190 BR U	tr20	1065	208.83	212.98	4.15	3.57	0.0047	3.77	282.79	102.05	0.72
	13190 BR D	tr20	1065	208.83	212.84	4.01	3.57	0.0055	3.96	268.96	101.59	0.78
222bis - ponte TRAONA valle	13181.27	tr20	1065	208.83	212.92	4.09	3.47	0.0034	3.62	294.11	107.84	0.7
222	12521.41	tr20	1065	207	210.99	3.99	3.4	0.0031	2.99	356.41	159.61	0.64
221	11957.52	tr20	1065	204.2	210.25	6.05	3.9	0.0010	2.16	492.43	150.25	0.38

Description	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Max Chl Dpth (m)	Crit Depth (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
220	11521.38	tr20	1065	203.9	209.97	6.07	3.77	0.0006	1.9	559.31	142.47	0.31
219BIS	11099.21	tr20	1065	203.2	209.65	6.45	3.78	0.0007	2.1	507.2	131.64	0.34
219	10649.09	tr20	1065	202.51	209.12	6.61	3.81	0.0011	2.61	409.58	119.7	0.41
218	10291.24	tr20	1065	202.7	208.9	6.2	3.18	0.0008	2	532.65	154.27	0.34
218 bis	10143.44	tr20	1065	202.8	208.61	5.81	3.83	0.0012	2.58	413.48	117.56	0.44
218 ter	10033.29	tr20	1065	202.6	208.25	5.65	4.24	0.0019	3.17	335.76	93.81	0.54
217bis-PONTE MANTELLO monte	9490.41	tr20	1065	202.3	206.89	4.59	3.37	0.0024	3.74	284.95	74.57	0.61
Ponte Mantello SP	9480 BR U	tr20	1065	202.3	206.8	4.5	3.43	0.0031	3.92	271.47	72.32	0.65
	9480 BR D	tr20	1065	202.3	206.73	4.43	3.5	0.0026	4.02	265.16	70.72	0.66
217 - Valle ponte Mantello	9472.41	tr20	1065	202.3	206.76	4.46	3.45	0.0020	3.89	273.7	72.75	0.64
217 quater - monte soglia	9412.848	tr20	1065	202.3	206.34	4.04	3.42	0.0031	4.47	238.51	69.75	0.77
217 quater - valle soglia	9402.848	tr20	1065	201.7	206.49	4.79	3.61	0.0020	3.88	274.41	70.17	0.63
216bis - monte soglia	8934.211	tr20	1065	201.52	206.03	4.51	2.99	0.0012	2.89	368.48	101.65	0.48
216 - valle soglia	8914.211	tr20	1065	200.92	206.07	5.15	3.15	0.0008	2.61	407.6	101.8	0.42
215bis	8664.441	tr20	1065	200.9	205.59	4.69	3.13	0.0013	3.27	325.83	79.87	0.52
215 - monte soglia	8457.907	tr20	1065	199.8	205.68	5.88	2.8	0.0004	2.13	499.7	95.88	0.3
215 ter - valle soglia	8437.907	tr20	1065	198.4	205.72	7.32	2.88	0.0002	1.76	603.56	96.04	0.22
214 bis	8242.791	tr20	1065	197.82	205.58	7.76	3.98	0.0004	2.18	489.41	82.72	0.29
214 Sbocco Lesina	7985.181	tr20	1065	197.38	205.35	7.97	4.87	0.0006	2.6	410.19	76.5	0.36
213 quater	7625.771	tr20	1065	198.29	205.34	7.05	2.97	0.0002	1.79	595.24	99.38	0.23
213ter- PONTE DUBINO monte	7277.9	tr20	1065	197.07	204.99	7.92	4.83	0.0007	2.65	401.25	78.9	0.38
Ponte di DUBINO	7270 BR U #1	tr20	1064.81	197.07	204.99	7.92	4.83	0.0006	2.66	400.17	74.81	0.37
	7270 BR D #1	tr20	1064.81	197.07	204.98	7.91	4.83	0.0006	2.66	399.66	74.8	0.37
213bis- PONTE DUBINO valle	7259.903	tr20	1065	197.07	204.98	7.91	4.83	0.0006	2.66	400.22	76.48	0.37
213	7219.728	tr20	1065	196.69	204.88	8.19	5.31	0.0008	2.88	375.74	87.47	0.4
212BIS	6738.565	tr20	1065	197.7	204.08	6.38	4.48	0.0014	3.65	291.57	62.61	0.54
212	6291.535	tr20	1065	197.37	203.56	6.19	4.35	0.0012	3.26	326.88	74.54	0.5
211	5997.712	tr20	1065	194.13	203.38	9.25	6.53	0.0008	2.83	376.59	73.56	0.4
210bis	5814.535	tr20	1065	196.1	203.01	6.91	5.16	0.0013	3.37	316.37	72.87	0.52
210	5385.365	tr20	1065	196.95	202.6	5.65	3.86	0.0009	3.19	339.02	95.61	0.5
209	4774.593	tr20	1065	192.7	202.49	9.79	5.1	0.0003	2.04	521.5	94.85	0.28
208BIS	4418.204	tr20	1065	193.2	202.36	9.16	5.08	0.0003	2.19	486.63	83.87	0.29
208	4012.063	tr20	1065	193.19	202.23	9.04	5.35	0.0003	2.23	477.77	92.64	0.31
207	3662.496	tr20	1065	195.86	201.97	6.11	3.56	0.0005	2.62	406.17	86.41	0.39
206	3063.023	tr20	1065	196.58	201.66	5.08	2.75	0.0006	2.45	435.35	117.44	0.41
205	2479.214	tr20	1065	195.82	201.45	5.63	2.87	0.0004	2.03	524.66	123.04	0.31
204ter - PONTE GERA SS.36 monte	2204.82	tr20	1065	196.1	201.08	4.98	3.42	0.0008	2.88	370.15	98.77	0.47
Ponte GERA LARIO - SS36	2200 BR U	tr20	1065	196.1	200.64	4.54	3.93	0.0031	4.01	265.77	86.41	0.73
	2200 BR D	tr20	1065	196.1	200.57	4.47	3.93	0.0033	4.09	260.16	86.25	0.75
204bis - PONTE GERA SS.36 valle	2189.821	tr20	1065	196.1	200.82	4.72	3.42	0.0010	3.09	345.19	97.92	0.52

Description	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Max Chl Dpth	Crit Depth	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
monte soglia - int 2	2162.2	tr20	1065	196.25	200.9	4.64	2.92	0.0007	2.61	408.47	111.11	0.43
monte soglia - int 1 - STAZIONE ARPA	2140.11	tr20	1065	196.38	200.93	4.55	2.55	0.0006	2.35	453.74	121.7	0.39
monte soglia	2118.02	tr20	1065	197.46	200.63	3.17	2.43	0.0016	3.25	327.84	119.87	0.63
monte soglia	2108	tr20	1065	197.69	200.34	2.65	2.37	0.0029	3.91	272.06	119.08	0.83
monte soglia	2100	tr20	1065	197.69	200.06	2.37	2.37	0.0045	4.46	238.86	118.33	1
valle soglia	2094.44	tr20	1065	194.18	199.93	5.75	3.48	0.0004	2.19	486.4	118.12	0.34
204V_interpolata	2081.94	tr20	1065	194.17	199.92	5.75	3.51	0.0004	2.21	481.96	118.16	0.35
204quater_interpolata	2059.93	tr20	1065	194.16	199.9	5.75	3.57	0.0005	2.24	474.78	118.28	0.36
204ter_interpolata	2020.93	tr20	1065	194.13	199.87	5.74	3.67	0.0005	2.3	462.26	119.92	0.37
204bis_interpolata	1808.93	tr20	1065	193.98	199.67	5.68	3.67	0.0007	2.58	412.05	114.13	0.43
204	1636.65	tr20	1065	193.86	199.57	5.71	3.14	0.0005	2.58	413.39	85.74	0.37
203	1072.397	tr20	1065	194.42	199.38	4.96	2.53	0.0004	2.18	488.3	112.26	0.33
202	476.853	tr20	1065	194.92	199.01	4.09	2.37	0.0006	2.47	431.88	118.06	0.41
201	0	tr20	1065	195.08	198.62	3.54	2.16	0.0008	2.63	405.44	121.04	0.46