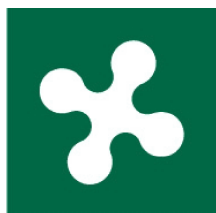




AUTORITA' DI BACINO DEL FIUME PO
PARMA



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

2.2

TABULATI DI OUTPUT DI HEC-RAS
TEMPO DI RITORNO 200 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	tr200	830	430	434.03	4.03	6.78	0.014021	11.02	75.31	22.29	1.91
335 bis - P.SS36 monte	70276.73	tr200	830	428.63	432.27	3.64	6.75	0.011561	11	75.47	24.14	1.9
Ponte SS38 - Tirano	70273 BR U	tr200	830	428.63	432.35	3.72	6.74	0.01315	10.82	76.72	21.44	1.79
	70273 BR D	tr200	830	428.57	432.36	3.79	6.85	0.012643	10.67	77.78	21.44	1.75
335 - P.SS36 valle	70261.73	tr200	830	428.57	432.34	3.77	6.8	0.010518	10.67	77.78	24.2	1.81
334bis - P.Martiri monte	70027.37	tr200	830	425.2	428.81	3.61	5.45	0.01666	11.05	75.09	51.35	2.04
Ponte via Martiri - Tirano	70024 BR U	tr200	830	425.2	428.85	3.65	5.46	0.015941	10.89	76.19	25.03	1.99
	70024 BR D	tr200	830	424.87	428.62	3.75	5.77	0.016456	10.98	75.6	24.8	2.01
334 - P.Martiri valle	70012.37	tr200	830	424.87	428.64	3.77	5.77	0.016164	10.91	76.05	30.52	1.99
333bis - P.via Del Commercio monte1	69554.94	tr200	830	420.43	424.38	3.95	5.48	0.00942	9.12	91.04	66.55	1.56
333bis - P.via Del Commercio monte2	69549.94	tr200	830	420.33	424.31	3.98	5.88	0.009518	9.14	90.81	63.86	1.56
Ponte via Commercio - Tirano	69545 BR U	tr200	830	420.33	424.32	3.99	6.19	0.009436	9.11	91.07	26.08	1.56
	69545 BR D	tr200	830	420.26	424.39	4.13	6.26	0.008738	8.89	93.35	26.13	1.5
333 - P.via Del Commercio valle3	69539.94	tr200	830	420.26	424.4	4.14	5.93	0.008657	8.86	93.63	67.42	1.49
333 - P.via Del Commercio valle4	69529.94	tr200	830	420.2	424.48	4.28	5.74	0.007926	8.61	96.43	70.17	1.43
332	68569.1	tr200	830	412.1	415.68	3.58	4.28	0.009769	8.98	92.45	30.21	1.64
331 bis - Poschiavino monte	68205.48	tr200	830	409.09	412.53	3.44	4.25	0.009512	8.68	95.6	32.78	1.62
331-Ponschavino valle	67695.08	tr200	917	404.8	408.75	3.95	4.45	0.005493	6.3	232.09	163.24	1.22
330	67222.66	tr200	917	401	405.25	4.25	4.48	0.008249	6.55	190.62	136.69	1.16
329	66719.98	tr200	917	398.2	401.79	3.59	3.64	0.006427	5.75	159.35	49.41	1.02
328	66357.62	tr200	917	395.3	399.41	4.11	4.13	0.006178	5.91	155.27	44.45	1.01
326 cambio tiles - Ponte Stazzona	65890.16	tr200	917	392.55	397.71	5.16	4.08	0.002831	4.55	201.65	43.81	0.68
326 - Ponte Stazzona monte	65880.16	tr200	917	392.5	397.66	5.16	4.12	0.002919	4.59	199.71	43.78	0.69
Ponte Stazzona	65875 BR U	tr200	917	392.5	396.8	4.3	4.3	0.008971	6.02	152.2	41.06	1
	65875 BR D	tr200	917	392.45	396.33	3.88	4.2	0.011484	6.58	139.27	40.81	1.14
326 - Ponte Stazzona valle	65870.16	tr200	917	392.45	395.77	3.32	3.99	0.012267	7.29	125.79	42.34	1.35
326 - Ponte Stazzona valle	65850.16	tr200	917	392.35	396.43	4.08	4.08	0.006436	5.93	154.64	42.91	1
325	65183.16	tr200	917	388.2	392.44	4.24	4.38	0.006828	5.05	221.72	145.05	1.03
324	64666.12	tr200	917	384.5	389.08	4.58	3.69	0.001918	2.66	363.3	174.05	0.54
323	64275.72	tr200	917	382.8	387.1	4.3	4.25	0.006008	4.68	226.59	109.28	0.83
322bis - inizio argini	63857.53	tr200	917	380.4	384.57	4.17	3.85	0.006633	4.15	220.72	87.89	0.84
322	63538.97	tr200	917	379	382.71	3.72	3.4	0.006103	3.52	260.76	126.24	0.78
321	62946.09	tr200	917	375.6	379.2	3.61	3.28	0.006049	3.12	293.96	169.97	0.76
320	62395.7	tr200	917	372.8	376.18	3.38	2.96	0.005192	2.84	322.9	191.68	0.7
319	62195.97	tr200	917	372.3	375.38	3.08	2.67	0.003993	2.42	436.93	319.79	0.61
318bis - Sbocco Belviso	61779.57	tr200	959	370.3	375.24	4.94	2.7	0.000285	0.99	1038.95	467.47	0.18
318	61396	tr200	959	369.2	374.99	5.79	4.07	0.000638	1.92	791.64	415.4	0.28
317 bis - Passerella Teglio monte	61168.77	tr200	959	368.58	374.38	5.79	4.49	0.002259	3.34	435.34	407.25	0.52
Passerella Teglio	61167 BR U	tr200	959	368.58	374.26	5.68	4.49	0.002748	3.6	385.28	396.66	0.45
	61167 BR D	tr200	959	368.52	374.2	5.68	4.54	0.002957	3.71	361.62	393.39	0.47

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
317 - Passerella Teglio valle	61158.77	tr200	959	368.52	374.18	5.66	4.54	0.002913	3.72	356.73	398.64	0.58
316ter - Ponte SP39 monte1	61059.81	tr200	959	368.1	373.7	5.6	4.22	0.003049	4.01	239.35	52.91	0.6
316ter - Ponte SP39 monte2	61053.81	tr200	959	368.05	373.52	5.47	4.28	0.003338	4.33	221.37	52.23	0.64
Ponte SP39 - Teglio	61050 BR U	tr200	959	368.05	373.19	5.14	4.28	0.013175	4.97	193.14		0.7
	61050 BR D	tr200	959	368	373.03	5.03	4.32	0.013075	4.95	193.59		0.7
316ter - Ponte SP39 valle3	61039.81	tr200	959	368	373.09	5.09	4.32	0.004527	4.76	201.35	51.67	0.74
316ter - Ponte SP39 valle4	61029.81	tr200	959	367.95	373.12	5.17	4.34	0.004469	4.55	210.62	51.7	0.72
316bis - ponte Falk25 monte1	60991.73	tr200	959	367.43	373.23	5.8	4.18	0.002645	3.75	255.86	55.26	0.56
316bis - ponte Falk25 monte2	60981.73	tr200	959	367.4	373.16	5.76	4.21	0.002605	3.84	249.56	55.16	0.57
Ponte Falck - Teglio	60975 BR U	tr200	959	367.4	372.1	4.7	4.7	0.014736	5.8	165.23	48.01	1
	60975 BR D	tr200	959	367.38	372.09	4.71	4.71	0.012002	5.81	165.16	48.01	1
316bis - ponte Falk25 valle3	60972.73	tr200	959	367.38	370.79	3.41	4.23	0.01816	7.52	127.6	51.96	1.52
316bis - ponte Falk25 valle4	60952.73	tr200	959	367.35	371.61	4.26	4.26	0.007432	5.64	170.16	52.29	1
316	60769.6	tr200	959	366.7	371.2	4.5	3.84	0.003688	3.93	243.96	79.47	0.72
315	60146.31	tr200	959	365.2	369.69	4.49	3.33	0.002104	3.24	499.93	630.83	0.55
314	59495.97	tr200	959	364	367.63	3.63	3.16	0.004035	3.64	269.73	124.01	0.73
313bis	59083.43	tr200	959	362.8	366.39	3.59	2.93	0.002922	2.91	329.63	142.45	0.61
313	58635.73	tr200	959	361.7	365.3	3.6	3.6	0.002479	3.27	620.28	880.82	0.58
312	57987.43	tr200	959	359.8	363.93	4.13	3.76	0.00179	2.05	883.83	1015.36	0.46
311 - Sbocco Margatta	57495.18	tr200	959	358	363.67	5.67		0.000416	1.41	1186.63	739.98	0.24
310	56954.99	tr200	959	357.5	363.56	6.06		0.000175	1.05	1321.82	512.99	0.16
309bis - S.Giacomo passerella monte	56388.31	tr200	959	356	363.02	7.02	4.79	0.000964	2.81	494.25	207.94	0.39
S.Giacomo - Passerella	56385 BR U	tr200	959	356	363.02	7.02	4.82	0.001269	2.82	486.44	201.76	0.39
	56385 BR D	tr200	959	356	363.01	7.01	4.83	0.001273	2.82	485.5	201.72	0.39
309 - S.Giacomo passerella valle	56378.31	tr200	959	356	363	7	4.79	0.000979	2.83	490.78	207.8	0.4
308bis - ponte Teglio S.giacomo 23 monte1	56223.34	tr200	959	355.87	362.06	6.19	4.88	0.002919	4.41	217.4	43.95	0.63
308bis - ponte Teglio S.giacomo 23 monte2	56216.34	tr200	959	355.82	362.03	6.21	4.93	0.00297	4.44	216.19	43.94	0.64
Ponte S.Giacomo	56210 BR U	tr200	959	355.82	361.58	5.76	5.08	0.007719	5.27	182.04	40	0.79
	56210 BR D	tr200	959	355.78	361.06	5.28	5.12	0.010556	5.93	161.6	39.8	0.94
308 - ponte Teglio S.giacomo 23 valle3	56203.34	tr200	959	355.78	361.37	5.59	4.96	0.004599	5.11	187.61	43.67	0.79
308 - ponte Teglio S.giacomo 23 valle4	56188.34	tr200	959	355.75	360.74	4.99	4.99	0.007548	5.99	160	43.42	1
307 - Sbocco Malgina	56037.03	tr200	1009	353.9	360.41	6.51	5.37	0.002949	4.21	239.74	57.79	0.66
306	55582.46	tr200	1009	353.2	357.72	4.52	4.52	0.00718	5.48	184.05	59.65	1
305bis	55377.56	tr200	1009	352.3	358.05	5.75	3.63	0.000738	1.97	556.42	218.91	0.33
305	55103.97	tr200	1009	351.2	356.69	5.49	4.78	0.00368	4.67	261.59	181.45	0.73
304	54645.56	tr200	1009	349.7	353.83	4.13	4.13	0.007182	5.59	180.39	56.33	1
304 bis	54242.18	tr200	1009	348.95	354.46	5.51	2.65	0.000283	1.05	1017.87	482.32	0.2
303	53930.38	tr200	1009	348.3	354.21	5.91	4.02	0.000663	2.02	735.57	326.04	0.32
302	53508.66	tr200	1009	347.2	353.69	6.49	5.2	0.001474	2.36	426.95	148.41	0.44
301	53078.66	tr200	1009	347.5	353.45	5.95	3.77	0.000504	1.82	1000.69	515.26	0.28

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	tr200	1054	347.2	353.31	6.11		0.000329	1.57	1164.05	474.54	0.23
300 ponte Baghetto monte	52408.32	tr200	1054	346.93	352.52	5.59	5.13	0.002149	3.88	448.77	324.24	0.58
Ponte Baghetto - Castello dell'Acqua	52405 BR U #1	tr200	498.43	346.93	352.89	5.96	3.23	0.003119	2.33	212.79	16.37	0.3
	52405 BR D #1	tr200	498.43	346.93	352.87	5.94	3.23	0.003119	2.33	212.53	16	0.31
300 ponte Baghetto valle	52398.32	tr200	1054	346.93	352.06	5.13	5.13	0.003505	4.67	320.72	285.23	0.72
299bis traversa Baghetto monte	52235.62	tr200	1054	347.12	352.25	5.13	2.81	0.000535	1.97	993.21	454.48	0.28
Traversa Baghetto	52222		Inl Struct									
299 valle traversa Baghetto 1	52216.8	tr200	1054	347	352.25	5.25		0.001005	1.7	893.52	386.76	0.24
298bis	52022.2	tr200	1054	344.7	351.88	7.18		0.001526	2.28	604.21	214.39	0.31
298	51685.96	tr200	1054	344.1	350.52	6.42		0.005649	3.83	343.57	154.03	0.57
297bis	51361.24	tr200	1054	342.82	349.01	6.19		0.004407	3.4	339.57	127.36	0.51
297 - sbocco Armisa	51151.41	tr200	1083	342	348.45	6.45		0.002639	2.98	467.27	164.81	0.41
296	50812.99	tr200	1083	337.5	347.41	9.91		0.002511	3.22	336.28	46.07	0.38
295bis Ponte Sazzo monte1	50772.51	tr200	1083	336.77	347.08	10.31		0.003866	3.74	289.26	41.95	0.46
295bis Ponte Sazzo monte2	50762.51	tr200	1083	336.72	345.22	8.5	7.44	0.010029	6.79	159.45	38.7	0.79
Ponte Sazzo - Ponte in Valtellina	50760 BR U	tr200	1083	336.72	344.99	8.27	7.39	0.013824	7.08	153.04	18.57	0.79
	50760 BR D	tr200	1083	336.68	344.68	8	7.41	0.023867	7.35	147.45	19.38	0.83
295bis Ponte Sazzo valle3	50754.51	tr200	1083	336.68	344.14	7.46	7.46	0.026909	7.92	136.66	35.31	1
295bis Ponte Sazzo valle4	50739.51	tr200	1083	336.62	342.42	5.8	7.05	0.072528	9.08	119.33	30.23	1.46
295	50726.36	tr200	1083	336.5	340.76	4.26	5.81	0.084404	9.68	111.88	30.44	1.61
294bis	50308.8	tr200	1083	332	337.12	5.12	4.71	0.023145	5.03	215.11	63.24	0.87
294	50008.91	tr200	1083	325.8	332.69	6.89		0.011295	4.22	256.33	55.55	0.63
293ter	49692.43	tr200	1083	321.86	328.77	6.91		0.013109	4.38	246.98	54.68	0.66
293 - Ponte Boffetto	49378.43	tr200	1083	312.64	323.23	10.59	8.86	0.015292	6.23	173.72	32.3	0.7
Ponte Boffetto - Piateda	49365 BR U	tr200	1083	312.64	322.27	9.63	8.61	0.040243	7.45	145.34	13.07	0.77
	49365 BR D	tr200	1083	312.64	322.06	9.42	8.61	0.023022	7.58	144.6	21.07	0.79
293bis - Boffetto Valle	49359.99	tr200	1083	312.64	321.52	8.88	8.85	0.01641	7.89	137.34	31.41	0.99
292	49257.83	tr200	1083	314.92	320.71	5.79	5.79	0.015093	6.4	179.35	53.35	0.9
291	49049.76	tr200	1083	312.3	316.87	4.57	4.84	0.021483	6.5	166.5	47.29	1.11
290	48641.07	tr200	1083	307	313.05	6.04	4.07	0.002759	3.1	405.16	132.63	0.43
289 - Ponte Streppona monte	48619.36	tr200	1083	306.2	312.31	6.11	4.88	0.006213	4.51	240.19	57.11	0.65
Ponte Piateda - Streppona	48615 BR U	tr200	1083	306.2	311.3	5.1	5.1	0.028363	6.34	170.7	41.68	0.9
	48615 BR D	tr200	1083	306.2	311.3	5.1	5.1	0.00928	6.34	170.7	41.68	0.9
289bis - Ponte Streppona valle	48609.36	tr200	1083	306.2	310.34	4.14	4.88	0.011225	7.53	143.86	53.56	1.4
288	48162.86	tr200	1083	303	307.23	4.23	4.54	0.006673	6.13	182.81	70.23	1.09
287	47656.41	tr200	1083	299.36	303.22	3.86	4.55	0.008364	6.49	180.85	111.69	1.2
287 bis	47597.2	tr200	1083	298.93	304.29	5.36	4.54	0.001992	3.08	381.23	182.53	0.59
Attivazione esondazione Amonini	47580		Lat Struct									
286 bis	47489.4	tr200	1056.66	298.16	302.75	4.59	4.59	0.005663	5.55	190.4	60.61	1
286	47142.3	tr200	1068.56	296.38	300.98	4.6	3.7	0.002293	3.48	306.84	100.44	0.64

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)	
285bis - Ponte Piaveda Amonini monte1	46860.92	tr200	1068.56	294.15	300.13	5.98	5.05	0.002364	3.96	270.05	72.95	0.66
285bis - Ponte Piaveda Amonini monte2	46855.92	tr200	1068.56	294.09	300.1	6.01	5.1	0.00235	3.98	268.39	72.92	0.66
Ponte Piaveda - Amonini	46850 BR U	tr200	1068.56	294.09	299.8	5.71	5.25	0.004655	4.6	232.15	69.37	0.8
	46850 BR D	tr200	1068.56	294.05	299.38	5.33	5.29	0.006983	5.26	203.03	69.05	0.98
285 - Ponte Piaveda Amonini valle3	46842.92	tr200	1068.56	294.05	299.6	5.55	5.14	0.003747	4.59	232.57	72.36	0.82
285 - Ponte Piaveda Amonini valle4	46832.92	tr200	1068.56	294	299.19	5.19	5.19	0.005873	5.26	203.22	71.89	1
284	46726.23	tr200	1068.56	294	298.43	4.43	3.32	0.001879	3.26	327.53	102.47	0.58
283bis	46528.25	tr200	1068.56	293.09	297.31	4.22	4.22	0.006585	4.39	243.43	123.51	1
283	46007.19	tr200	1068.56	290.5	295.44	4.94	4.42	0.002542	3.83	278.76	104.09	0.75
282	45505.73	tr200	1068.56	289.1	293.18	4.08	4.01	0.004051	5.17	206.88	70.45	0.96
281 bis	45158.45	tr200	1068.56	287.8	293.57	5.77	3.9	0.000561	2.04	524.82	163.02	0.36
281 monte confluenza	44950	tr200	1068.56	286.5	293.07	6.57	4.4	0.001059	3.2	334.06	84.31	0.51
281	44900.92	tr200	1083	286.5	292.97	6.47	4.44	0.001181	3.33	325.36	83.98	0.54
280bis Ponte Montagna - Busteggia monte	44700.7	tr200	1083	286.29	292.74	6.45	4.8	0.001231	3.27	331.34	91.25	0.55
Ponte di Busteggia - Montagna	44690 BR U	tr200	1083	286.29	292.54	6.24	5.07	0.002326	3.78	286.86	87.13	0.66
	44690 BR D	tr200	1083	286.29	292.52	6.23	5.07	0.00235	3.79	285.9	87.09	0.67
280bis Ponte Montagna - Busteggia valle	44685.7	tr200	1083	286.29	292.61	6.32	4.8	0.001389	3.39	319.58	90.97	0.58
280	44639.55	tr200	1083	286	292.71	6.71	4.84	0.000953	2.73	417.97	157.05	0.48
279 ter	44425.15	tr200	1083	285.8	292.64	6.84	4.38	0.000498	2.26	480.14	117.2	0.36
279bis - Passerella pedonale Faedo monte Venina	44170.02	tr200	1211	285.57	291.61	6.04	5.16	0.002512	4.35	292.19	219.65	0.76
Passerella Faedo	44165 BR U	tr200	1211	285.57	291.52	5.95	5.16	0.002397	4.51	273.12	135.58	0.75
	44165 BR D	tr200	1211	285.57	291.51	5.94	5.16	0.002421	4.52	271.69	129.55	0.76
279 - Passerella pedonale Faedo valle	44160.02	tr200	1211	285.57	291.5	5.93	5.16	0.0028	4.5	273.44	142.18	0.8
278	43733.09	tr200	1211	284.8	291.66	6.86	4.63	0.000488	2.2	951.11	450.65	0.33
277bis	43319.65	tr200	1211	284.5	290.84	6.34	4.87	0.005172	3.23	374.91	277.56	0.89
277	42871.19	tr200	1211	284.3	290.68	6.38	3.04	0.000358	1.97	701.91	258.01	0.29
276 bis	42490.98	tr200	1211	284.1	290.52	6.42	5.05	0.000642	1.77	688.33	265.09	0.35
276	42401.2	tr200	1211	284	290.37	6.37	5.55	0.001268	2.13	586.49	299.03	0.47
275bis	42335.6	tr200	1211	283.95	290.4	6.45	3.67	0.000445	1.54	799.46	298.41	0.29
275	41783.62	tr200	1211	283.5	289.93	6.43	4.93	0.00079	2.22	544.86	171.21	0.4
274 - Ponte Albosaggia monte	41445.61	tr200	1211	281.05	289.45	8.4	5.72	0.000884	2.9	417.96	94.43	0.44
Ponte Albosaggia	41440 BR U #1	tr200	1211	281.05	289.39	8.34	5.87	0.001374	3.09	391.28	91.1	0.48
	41440 BR D #1	tr200	1211	281.05	289.37	8.32	5.87	0.00139	3.11	389.82	91.07	0.48
274 bis - Ponte Albosaggia valle	41430.61	tr200	1211	281.05	289.4	8.35	5.72	0.000917	2.93	413.17	94.34	0.45
273	41390.1	tr200	1211	281.9	289.38	7.48	5.05	0.000941	2.87	421.52	99.81	0.45
Attivazione colarote	41370		Lat Struct									
273 bis - sbocco fosso colatore	41265.23	tr200	1211	282.25	289.34	7.09	4.81	0.000718	2.56	473.39	108.97	0.39
272 ter Passerella Albosaggia monte	40821.2	tr200	1211	281.71	288.11	6.4	5.95	0.003221	4.22	287.11	118.61	0.83
Passerella Albosaggia	40818 BR U	tr200	1211	281.71	287.98	6.27	5.94	0.003769	4.49	269.71	96.72	0.57
	40818 BR D	tr200	1211	281.71	287.87	6.16	5.94	0.003793	4.69	259.03	97.62	0.6

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)	
272 bis Passerella Albosaggia valle	40811.2	tr200	1211	281.71	287.66	5.95	5.95	0.004735	5.04	240.35	92.91	1
Sottopassi tangenziale	40800		Lat Struct									
272	40738.76	tr200	1211	281.9	286.32	4.42	4.95	0.007064	6.47	187.2	68.44	1.25
271 BIS - Sottopasso sentiero valtellina	40570.34	tr200	1211	281.56	285.91	4.35	4.33	0.004117	5.88	205.86	57.19	0.99
271	40459.23	tr200	1211	281.34	285.63	4.29	4.07	0.003518	5.55	218.16	58.59	0.92
270 - Mallero	40041.4	tr200	1430	280.9	285.5	4.6	3.4	0.001374	3.32	433.07	150.5	0.57
269bis	39652.09	tr200	1430	279.35	285.04	5.69	3.47	0.001607	2.81	543.02	163.69	0.41
269ter - fine rilevato tangenziale	39650	tr200	1430	279.35	285.03	5.68	3.47	0.001612	2.81	542.27	163.59	0.41
269	39204.96	tr200	1430	277.8	283.51	5.71	5.34	0.004899	3.97	467.28	263.18	0.68
268bis	38813.32	tr200	1430	277.1	282.15	5.05	3.89	0.00319	3.19	536.1	304	0.55
268	38446.99	tr200	1430	276.2	281.24	5.04	4.03	0.002371	2.84	692.29	380	0.48
267	37978.62	tr200	1430	274.1	280.43	6.33	4.34	0.001476	2.3	677.81	297.88	0.38
266 - Liro	37597.5	tr200	1430	272.95	279.88	6.93	4.28	0.001474	2.23	708.32	267.49	0.38
265 bis - Ponte Caiolo monte	37328.05	tr200	1430	271.79	279.17	7.38	5.59	0.00215	3.02	473.63	107.61	0.46
Ponte Caiolo SP	37318 BR U	tr200	1430	271.79	279.13	7.34	5.58	0.002493	3.09	462.06	104.21	0.47
	37318 BR D	tr200	1430	271.79	279.1	7.31	5.58	0.002551	3.12	458.58	104.21	0.47
265 - Ponte Caiolo valle	37308.05	tr200	1430	271.79	279.09	7.3	5.59	0.002268	3.07	465.82	107.61	0.47
264- valle ponte caiolo	37256.1	tr200	1430	271.7	278.73	7.03	5.21	0.001275	3.85	432.74	201.99	0.54
236ter	36838.79	tr200	1430	272.1	278.38	6.28	4.2	0.001179	3.14	485.51	159.34	0.5
263 bis fine argine dx	36436.18	tr200	1430	271.2	277.33	6.13	4.68	0.002263	4.16	367.01	131.94	0.69
263	36426.18	tr200	1430	270.7	277.38	6.68	4.91	0.001868	3.92	393.35	158.86	0.63
262 bis	36232.3	tr200	1430	270.6	277.2	6.6	4.69	0.001631	3.28	436.39	131.98	0.58
262	35958.49	tr200	1430	270.3	276.49	6.19	4.56	0.001952	3.84	376.01	140.26	0.64
261	35461.65	tr200	1430	270.3	275.46	5.16	4.15	0.002625	3.52	467.52	350.45	0.7
260	34974.6	tr200	1430	269.7	275.26	5.56	3.6	0.000558	2	967.13	496.35	0.34
259	34623.62	tr200	1430	268.2	275.11	6.91	4.75	0.000407	1.8	847.23	276.2	0.29
258bis	34181.11	tr200	1430	267.8	274.66	6.86	4.8	0.000728	2.81	653.73	294.27	0.41
258	33776.56	tr200	1430	267.3	274.57	7.27	6.18	0.000455	2.07	1189.17	606.06	0.32
257 - sbocco cervio	33116.71	tr200	1455	266.5	272.08	5.58	5.58	0.004943	5.83	249.39	72.43	1
256	32535.45	tr200	1455	266.5	272.29	5.79	4.14	0.000673	2.38	1034.02	754.51	0.38
255	31891.96	tr200	1455	265.8	271.94	6.14	4.71	0.000575	2	1074.26	639.45	0.35
254	31455.8	tr200	1455	265.5	271.66	6.16	3.67	0.000495	2.16	894.37	425	0.33
253 ter Ponte Berbenno monte	31375.66	tr200	1455	264.06	271.27	7.22	5.27	0.001071	3.12	466.48	110.28	0.48
Ponte Berbenno - Colorina	31370 BR U	tr200	1455	264.06	271.17	7.11	5.41	0.002117	3.4	427.34	104.15	0.54
	31370 BR D	tr200	1455	264.06	271.15	7.09	5.41	0.002146	3.42	425.39	104.14	0.54
253 bis Ponte Berbenno valle	31360.66	tr200	1455	264.06	271.19	7.14	5.27	0.00114	3.18	457.69	110.04	0.5
253	31304.81	tr200	1455	265.3	271.14	5.84	4.04	0.001111	3.12	466.85	114.09	0.49
252 - sbocco madrasco	30999.98	tr200	1468	266.2	271.26	5.06	3.89	0.000334	1.66	1436.34	767.65	0.27
251	30634.42	tr200	1468	265.2	271.16	5.96	4.22	0.000268	1.42	1410.37	652.14	0.24
250bis	30200.8	tr200	1468	264.8	270.77	5.97	4.96	0.000675	2.69	811.65	335.07	0.39

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)	
250 - sbocco presio	29847.31	tr200	1468	264.3	270.6	6.3	4.41	0.000506	2.27	891.9	365.74	0.34
249bis	29472.36	tr200	1468	264	270.46	6.52	5.09	0.000418	2.21	1015.47	401.87	0.31
249	28871.36	tr200	1468	264.1	270.25	6.41	3.29	0.000292	2	955.71	259.95	0.27
248	28421.39	tr200	1468	263.8	270.01	6.21	3.62	0.000335	2.25	652.99	142.16	0.33
247	27928.68	tr200	1468	263.7	269.75	6.96	3.62	0.0004	2.59	614.5	139.42	0.37
246	27513.04	tr200	1468	263.85	269.46	7.01	3.71	0.000596	2.84	516.69	122.43	0.44
245ter - Ponte SELVETTA monte	27108.14	tr200	1468	263.25	269.1	6.58	4.02	0.000653	3.16	464.74	118.25	0.47
Ponte Forcola Selvetta	27103 BR U #1	tr200	1468	263.25	269.06	5.8	4.07	0.000964	3.28	447.1	96.1	0.44
	27103 BR D #1	tr200	1468	263.25	269.05	5.8	4.07	0.000968	3.29	446.5	96.1	0.44
245bis - Ponte SELVETTA valle	27098.14	tr200	1468	263.25	269.07	6.55	4.01	0.000667	3.18	461.81	118.14	0.47
245	27076.49	tr200	1468	263.25	269.16	6.42	3.64	0.000477	2.69	546.05	118.59	0.4
244	26388.33	tr200	1468	263	269.08	7.18	3.16	0.000231	1.85	792.23	175.6	0.28
243	25791.38	tr200	1468	262.8	268.55	7.13	3.9	0.000652	3.01	487.03	112.69	0.46
242bis - Ponte sirta monte	25198.79	tr200	1468	262.45	267.67	6.82	4.03	0.00113	3.97	370.16	102.91	0.61
Ponte Forcola - Sirta	25195 BR U #1	tr200	1468	262.45	267.48	5.03	4.15	0.002551	4.37	335.94	81.56	0.62
	25195 BR D #1	tr200	1468	262.45	267.45	5	4.15	0.00261	4.4	333.27	81.56	0.63
242bis - Ponte sirta valle	25188.79	tr200	1468	262.45	267.54	6.69	4.03	0.001256	4.09	358.62	102.46	0.64
242	25122.85	tr200	1468	262.2	267.6	7.07	4.15	0.00106	3.6	407.39	103.95	0.58
241	24108.9	tr200	1468	261.2	267.01	7.85	3.61	0.000675	2.42	607.71	203.26	0.45
240bis traversa ardenno monte	23536.71	tr200	1468	258.73	266.79	8.06	3.59	0.000199	2.51	584.56	88.88	0.29
Traversa Ardenno	23530		Inl Struct									
240ter traversa ardenno valle	23520	tr200	1468	258.73	263.16	4.43	3.59	0.001546	4.64	316.18	79.55	0.72
240	23084.77	tr200	1468	256.8	262.92	6.12	4.33	0.001207	3.46	437.11	101.39	0.5
239ter Sbocco Masino	22818.45	tr200	1581	256.5	262.67	6.17	4.12	0.001123	3.21	519.68	160.24	0.48
239bis - Ponte Ardenno SS38 monte	22791.13	tr200	1581	256.17	262.72	6.55	4	0.000763	2.84	556.63	107.89	0.4
Ponte Ardenno SS38	22781 BR U	tr200	1581	256.17	262.65	6.48	4.14	0.001217	3.04	519.51	100.46	0.38
	22781 BR D	tr200	1581	256.17	262.63	6.46	4.14	0.00123	3.05	517.63	100.4	0.38
239bis - Ponte Ardenno SS38 valle	22771.13	tr200	1581	256.17	262.67	6.5	4	0.000789	2.87	550.82	107.71	0.41
239	22706.4	tr200	1581	255.9	262.72	6.82	4.03	0.000566	2.37	666.6	137.19	0.34
238bis	22385.85	tr200	1581	255.5	262.22	6.72	4.5	0.001046	3.2	494.5	101.6	0.46
238	21992.21	tr200	1581	255.2	261.03	5.83	4.9	0.002775	4.48	352.83	90.93	0.73
237 bis	21694.56	tr200	1581	254.3	259.32	5.02	5.02	0.00516	5.67	293.65	94.38	0.97
237 - ponte ferrovia monte Tartano	21405.31	tr200	1601	250.99	258.09	7.1	4.89	0.001373	4.06	394.36	64.17	0.52
Ponte ferrovia - Talamona	21400 BR U #1	tr200	1430.71	250.99	256.4	5.41	4.83	0.007523	6.87	208.31	30.37	0.94
	21400 BR D #1	tr200	1430.71	250.99	255.82	4.83	4.83	0.009616	7.53	190	32.81	1.09
237 - ponte ferrovia valle	21395.31	tr200	1601	250.99	255.89	4.9	4.9	0.005405	6.29	254.59	62.99	1
236	20967.54	tr200	1601	246.2	249.96	3.76	4.95	0.018316	8.72	183.57	72.3	1.75
235ter - Ponte PANIGA monte1	20370.15	tr200	1601	240.48	244.47	3.99	4.63	0.010338	7.05	226.99	80.51	1.34
235ter - Ponte PANIGA monte2	20365.14	tr200	1601	240.43	245.61	5.18	4.68	0.003719	4.94	323.85	90.64	0.83
Ponte di Paniga - Morbegno	20360 BR U	tr200	1601	240.43	245.6	5.17	4.68	0.003741	4.95	323.25	90.61	0.84

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)	
	20360 BR D	tr200	1601	240.38	245.54	5.16	4.72	0.003927	5.03	318.17	90.35	0.86
235bis - Ponte PANIGA valle3	20358.14	tr200	1601	240.38	245.53	5.15	4.72	0.003959	5.04	317.36	90.31	0.86
235bis - Ponte PANIGA valle4	20348.14	tr200	1601	240.15	245.07	4.92	4.92	0.00544	5.73	279.63	83.53	1
235 - valle paniga	20280.79	tr200	1601	238.9	242.64	3.74	4.68	0.016077	7.89	202.85	85.08	1.63
234	19774.77	tr200	1601	235.1	239.16	4.06	4.11	0.005972	5.37	297.91	105.47	1.02
233	19088.84	tr200	1601	229.3	233.69	4.39	4.77	0.008759	6.23	256.8	96.37	1.22
232bis	18588.35	tr200	1601	227.16	230.98	3.82	3.82	0.005886	5.12	313	117.19	1
232	18116.05	tr200	1601	223.88	229.17	5.29	4.46	0.002998	2.63	609.44	379.15	0.66
231 bis - nostra 23	17746.89	tr200	1601	223	229.08	6.08	3.64	0.000323	1.37	1166.94	361.62	0.24
231 - nostra 16	17382.55	tr200	1601	221.9	228.85	6.95	5.29	0.000591	1.82	958.31	394.15	0.33
230 quater - nostra 10	17182.01	tr200	1601	221.04	228.7	7.66		0.000424	2.28	1079.6	479.28	0.3
230 ter - nostra 6	17012.94	tr200	1601	220.7	228.45	7.75	5.66	0.000655	3.1	860.64	341.47	0.37
230bis ponte di Ganda monte	16858.19	tr200	1601	220.72	227.75	7.02	4.64	0.001149	4.19	381.84	66.26	0.52
Ponte di Ganda - Morbegno	16855 BR U	tr200	1601	220.72	227.12	6.4	5.07	0.004101	5.36	298.95	47.18	0.68
	16855 BR D	tr200	1601	220.61	227.14	6.53	5.13	0.002354	5.26	304.2	47.15	0.66
230 ponte di Ganda valle	16848.19	tr200	1601	220.61	227.46	6.85	4.69	0.00096	4.32	370.77	57.44	0.54
229	16797.43	tr200	1601	220	227.09	7.09	5.96	0.001345	5.13	427.21	185.71	0.66
229 bis	16606.63	tr200	1601	219.2	225.81	6.61	6.38	0.002435	6.43	266.04	132.38	0.9
229 ter	16411.55	tr200	1601	218.8	226.13	7.33	6.06	0.001195	4.93	415.58	162.52	0.65
228quater - Ponte Morbegno via Forestale monte	16321.78	tr200	1601	218.43	226.22	7.79	5.71	0.000839	4.3	433.01	124.19	0.54
Ponte Morbegno via Forestale	16315 BR U	tr200	1601	218.43	225.83	7.4	6.11	0.001711	5.01	330.13	64.72	0.66
	16315 BR D	tr200	1601	218.43	225.79	7.36	6.11	0.001752	5.04	327.59	64.71	0.67
228ter - Ponte Morbegno via Forestale valle	16303.78	tr200	1601	218.43	225.93	7.5	5.72	0.00103	4.61	361.97	71.49	0.6
228bis - Monte soglia	16264.77	tr200	1601	219.77	224.75	4.98	4.98	0.003087	6.41	251.48	62.46	0.99
228 - Valle soglia	16243.28	tr200	1601	219.22	223.72	4.5	5.19	0.005008	7.61	210.45	54.46	1.24
227bis - Bitto monte	15788.23	tr200	1601	216.86	221.82	4.96	5.36	0.004278	7.23	221.46	54.34	1.14
227 - Bitto valle	15669.61	tr200	1683	216.2	221.38	5.18	5.55	0.004221	7.09	237.27	59.75	1.14
226 BIS	15153.21	tr200	1683	214.8	219.91	5.11	4.63	0.004852	4.91	342.78	100.47	0.85
226	14885.8	tr200	1683	213.2	219.2	6	4.74	0.003248	3.84	444.05	160.4	0.69
225bis	14623.84	tr200	1683	212.6	218.6	6	4.46	0.001892	3.81	495.11	165.95	0.56
225	14219.59	tr200	1683	211.5	215.98	4.48	4.48	0.006374	6.14	274.18	73.37	1
224	13835.8	tr200	1683	210.3	215.64	5.34	3.76	0.002141	3.05	552.53	185.71	0.56
223	13389.61	tr200	1683	208.3	214.81	6.51	4.88	0.001556	3.11	541.39	137.97	0.5
222ter - ponte TRAONA monte	13199.27	tr200	1683	208.83	214.08	5.25	4.28	0.002723	3.98	422.74	112.17	0.65
Ponte Cosio - Traona SP	13190 BR U	tr200	1683	208.83	213.76	4.93	4.41	0.005649	4.63	363.7	105.41	0.8
	13190 BR D	tr200	1683	208.83	213.42	4.59	4.41	0.007684	5.13	327.92	104.57	0.93
222bis - ponte TRAONA valle	13181.27	tr200	1683	208.83	213.58	4.75	4.29	0.004277	4.59	366.93	110.84	0.8
222	12521.41	tr200	1683	207	212.12	5.12	4.01	0.002002	3.13	538.5	163.67	0.55
221	11957.52	tr200	1683	204.2	211.54	7.34	4.86	0.000883	2.44	690.63	164.74	0.38
220	11521.38	tr200	1683	203.9	211.25	7.35	4.45	0.00062	2.22	757.48	157.84	0.32

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)	
219BIS	11099.21	tr200	1683	203.2	210.9	7.7	4.63	0.00074	2.49	674.81	135.93	0.36
219	10649.09	tr200	1683	202.51	210.41	7.9	5.31	0.000981	2.91	627.05	162.65	0.41
	10645		Lat Struct									
218	10291.24	tr200	1682.99	202.7	210.22	7.52	4.18	0.000682	2.27	751.38	188.58	0.34
218 bis	10143.44	tr200	1681.49	202.8	209.89	7.09	4.88	0.001191	2.95	569.38	127.21	0.45
218 ter	10033.29	tr200	1680.98	202.6	209.66	7.06	5.24	0.001398	3.3	567.37	174.56	0.48
217bis-PONTE MANTELLO monte	9490.41	tr200	1680.98	202.32	208.18	5.86	4.49	0.002409	4.39	383.32	78.6	0.63
	9484.41	tr200	1680.98	202.31	208.15	5.84	4.48	0.002342	4.43	379.53	78.52	0.63
Ponte Mantello SP	9480 BR U	tr200	1680.98	202.31	208.04	5.73	4.56	0.003395	4.64	362.11	73	0.62
	9480 BR D	tr200	1680.98	202.3	207.91	5.61	4.55	0.003645	4.81	349.32	70.73	0.65
217 - Valle ponte Mantello	9472.41	tr200	1680.98	202.3	207.96	5.66	4.48	0.00262	4.65	361.8	74.97	0.67
	9462.41	tr200	1680.98	202.29	207.93	5.64	4.49	0.002747	4.66	360.96	74.91	0.68
217 quater - monte soglia	9412.848	tr200	1680.98	202.3	207.27	4.97	4.55	0.004726	5.51	305.14	74.67	0.87
217 quater - valle soglia	9402.848	tr200	1680.98	201.7	207.48	5.78	4.76	0.002484	4.86	346.13	75.34	0.72
216bis - monte soglia	8934.211	tr200	1680.98	201.52	207.04	5.52		0.001371	3.5	501.04	202.1	0.54
216 - valle soglia	8914.211	tr200	1680.98	200.92	207.08	6.16		0.001056	3.24	544.25	204.13	0.48
	8684.41	tr200	1680.98	200.9	206.2	5.3	4.15	0.002098	4.49	374.63	81.34	0.67
215bis	8664.441	tr200	1683	200.9	206.68	5.78	4.15	0.000815	2.87	1086.44	759.98	0.42
215 - monte soglia	8457.907	tr200	1683	199.8	206.6	6.8	3.7	0.000444	2.4	1079.29	665.74	0.32
215 ter - valle soglia	8437.907	tr200	1683	198.4	206.63	8.23	3.93	0.000282	2.11	1198.45	668.84	0.26
214 bis	8242.791	tr200	1683	197.82	206.34	8.52	5.05	0.000552	2.85	738.43	355.06	0.36
214 Sbocco Lesina	7985.181	tr200	1727	197.38	206.15	8.77	6.12	0.000712	3.08	855.52	517.69	0.4
213 quater	7625.771	tr200	1727	198.29	206.09	7.8	3.94	0.000359	2.35	942.92	408.64	0.29
213ter- PONTE DUBINO monte	7277.9	tr200	1727	197.07	205.15	8.08	6.19	0.002383	4.14	416.77	111.47	0.68
Ponte di DUBINO	7270 BR U #1	tr200	1726.16	197.07	205.12	8.05	6.19	0.00153	4.21	410.35	74.89	0.57
	7270 BR D #1	tr200	1726.16	197.07	205.1	8.03	6.19	0.001549	4.22	408.75	74.88	0.58
213bis- PONTE DUBINO valle	7259.903	tr200	1727	197.07	205.11	8.04	6.19	0.002295	4.19	412.52	105.45	0.68
213	7219.728	tr200	1727	196.69	205.47	8.78	6.71	0.000689	2.95	1249.67	997.04	0.39
212BIS	6738.565	tr200	1727	197.7	205.1	7.4	6.91	0.000955	3.13	1179.13	1055.28	0.45
212	6291.535	tr200	1727	197.37	204.81	7.44	5.55	0.000738	2.89	1151.48	1025.94	0.4
211	5997.712	tr200	1727	194.13	204.78	10.65	7.86	0.000366	2.24	1597.07	1135.99	0.29
210bis	5814.535	tr200	1727	196.1	204.59	8.49	6.53	0.000604	2.71	1282.32	1069.86	0.37
210	5385.365	tr200	1727	196.95	203.97	7.02	5.03	0.000759	3.55	732.71	570.12	0.48
209	4774.593	tr200	1727	192.7	203.96	11.26	6.59	0.00027	2.33	1251.62	845.98	0.29
208BIS	4418.204	tr200	1727	193.2	203.79	10.59	6.66	0.00033	2.59	1063.15	667.66	0.32
208	4012.063	tr200	1727	193.19	203.63	10.44	6.64	0.000357	2.65	836.56	368.86	0.34
207	3662.496	tr200	1727	195.86	203.33	7.47	4.63	0.000618	3.08	607.44	154.44	0.43
206	3063.023	tr200	1727	196.58	202.98	6.4	3.68	0.000662	2.87	602.62	133.51	0.43
205	2479.214	tr200	1727	195.82	202.75	6.93	3.76	0.00042	2.49	693.99	135.2	0.35
204ter - PONTE GERA SS.36 monte	2204.82	tr200	1727	196.1	202.22	6.12	4.36	0.000923	3.57	483.61	103.07	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)	
Ponte GERA LARIO - SS36	2200 BR U	tr200	1727	196.1	201.46	5.36	4.92	0.004032	5.11	337.92	88.38	0.83
	2200 BR D	tr200	1727	196.1	201.26	5.16	4.92	0.004716	5.4	320.08	87.96	0.9
204bis - PONTE GERA SS.36 valle	2189.821	tr200	1727	196.1	201.72	5.62	4.36	0.001318	3.98	434.34	101.83	0.61
monte soglia - int 2	2162.2	tr200	1727	196.25	201.86	5.61	3.82	0.000877	3.34	517.38	115.22	0.5
monte soglia - int 1 - STAZIONE ARPA	2140.11	tr200	1727	196.38	201.92	5.55	3.39	0.000687	3	576.58	125.78	0.45
monte soglia	2118.02	tr200	1727	197.46	201.57	4.12	3.21	0.001717	3.85	448.86	134.77	0.67
monte soglia	2108	tr200	1727	197.69	201.24	3.55	3.15	0.002868	4.51	383.12	133.48	0.85
monte soglia	2100	tr200	1727	197.69	200.84	3.15	3.15	0.004043	5.21	331.51	120.41	1
valle soglia	2094.44	tr200	1727	194.18	201.45	7.27	4.31	0.000449	2.56	673.6	134.29	0.37
204V_interpolata	2081.94	tr200	1727	194.17	201.44	7.27	4.36	0.000457	2.58	669.5	134.17	0.37
204quater_interpolata	2059.93	tr200	1727	194.16	201.42	7.26	4.41	0.00047	2.6	663.1	133.97	0.37
204ter_interpolata	2020.93	tr200	1727	194.13	201.39	7.26	4.52	0.000496	2.65	651.27	133.65	0.38
204bis_interpolata	1808.93	tr200	1727	193.98	201.2	7.22	4.86	0.000641	2.88	599.83	131.39	0.43
204	1636.65	tr200	1727	193.86	201.03	7.17	4.22	0.000753	3.02	572.38	129.68	0.46
203	1072.397	tr200	1727	194.42	200.77	6.35	3.41	0.000496	2.65	651.97	131.71	0.38
202	476.853	tr200	1727	194.92	200.35	5.43	3.2	0.000675	2.89	596.96	133.49	0.44
201	0	tr200	1727	195.08	199.97	4.89	2.93	0.000756	3.01	574.2	131.54	0.46