ENGINEERING

AZIENDA CON SISTEMA DI GESTIONE PER LA QUALITÀ CERTIFICATO DA DNV = UNI EN ISO 9001:2008 =

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STUDIO IDROLOGICO IDRAULICO DI SUPPORTO AL REGOLAMENTO URBANISTICO DEL COMUNE DI SAN CASCIANO AI SENSI DEL REGOLAMENTO DI ATTUAZIONE 27/04/2007 N.26/R DELL'ART. 62 DELLA LEGGE REGIONALE 1/2005

ALLEGATO 2

RISULTATI DELLA MODELLISTICA IDROLOGICA - IDRAULICA

COMMITTENTE:

Comune di San Casciano in Val di Pesa
Via Machiavelli 56 - 50026 - San Casciano in Val di Pesa (FI)

PROGETTISTI:

ING. GIACOMO GAZZINI

DOTT. GEOL. ALESSANDRO MURRATZU

PROGETTO	LOTTO	FASE	DOC	ELABORATO	REV
L350	01	S03	A	RTC2	A

REV.	DATA EMISSIONE	REDATTO	VERIFICATO	APPROVATO
A	Ottobre 2011	G.Gazzini	G.Gazzini	G.Gazzini

Analisi idrologica

A	*[kmq]*	superficie del bacino idrografico
A1	*[-]*	parametro linee segnalatrici di probabilità pluviometrica durate < 1 ora
N1	*[-]*	parametro linee segnalatrici di probabilità pluviometrica durate < 1 ora
M1	*[-]*	parametro linee segnalatrici di probabilità pluviometrica durate < 1 ora
A	*[-]*	parametro linee segnalatrici di probabilità pluviometrica durate > 1 ora
N	*[-]*	parametro linee segnalatrici di probabilità pluviometrica durate > 1 ora
M	*[-]*	parametro linee segnalatrici di probabilità pluviometrica durate > 1 ora
n	*[-]*	parametro di forma dell'IUH di Nash
k	*[h]*	parametro di scala dell'IUH di Nash
TR	*[anni]*	tempo di ritorno
d	*[h]*	durata dell'evento
P	*[mm]*	precipitazione lorda
Qmax	*[mc/s]*	portata di picco dell'idrogramma di piena

Modellistica idraulica

Sezione		
River Sta		
Q Total	*[mc/s]*	portata al colmo di piena (ossia portata relativa al massimo livello idrometrico)
Min Ch El	*[m slm]*	quota del thalweg
W.S. Elev	*[m slm]*	massimo livello idrometrico
Crit. W.S.	*[m slm]*	altezza idrometrica critica
E.G. Elev	*[m slm]*	altezza della linea dei carichi totali
E.G. Slope	*[m/m]*	pendenza della linea dei carichi totali
Vel Chnl	*[m/s]*	velocità della corrente liquida
Flow Area	*[mq]*	superficie bagnata
Top Width	*[m]*	larghezza in sommità della superficie bagnata
Froude	*[-]*	numero di Froude
Storage Area		codice dell'area di potenziale espansione
SA W.S. El	*[m]*	livello idrometrico massimo nell'area di potenziale espansione
SA Min El	*[m]*	quota minima dell'area di poteziale espansione
Net Flux	*[mc/s]*	flusso netto
SA Area	*[mq]*	superficie bagnata nell'area di potenziale espansione
Volume	*[mc]*	volume idrico nell'area di potenziale espansione

Fiume Greve (Castelli Greve - Pesa)

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A	*Ia*	*Ks*	*n*	*k*
[kmq]	*[mm]*	*[mm/h]*	*-*	*[h]*
80.40	15.49	1.74	3.19	1.21

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
20.752	0.335	0.170	18.830	0.347	0.204

Sintesi dei risultati del modello idrologico:

Durata critica Fiume Greve

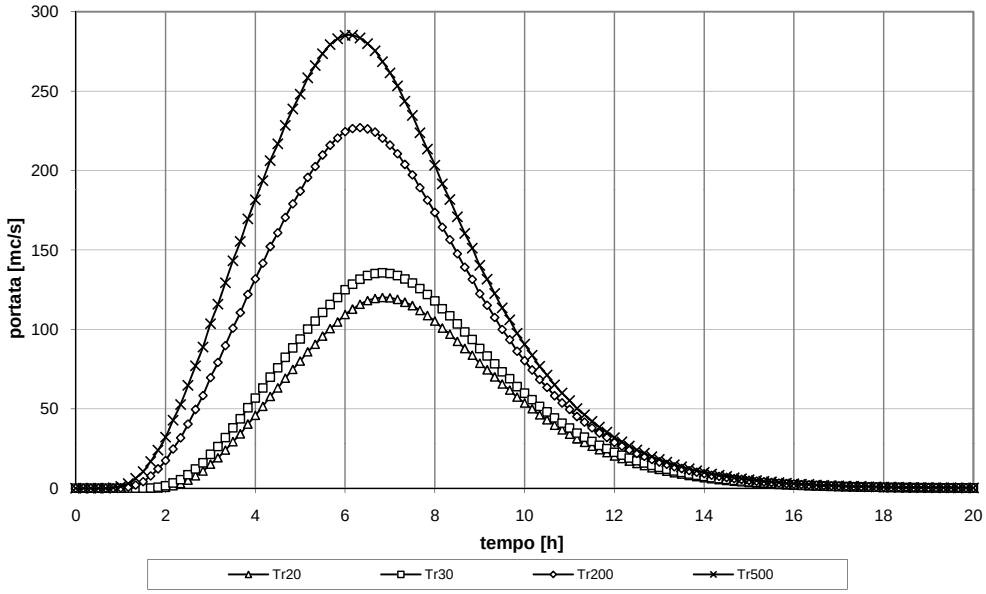
TR	*d*	*P*	*Qmax*
[anni]	*[h]*	*[mm]*	*[mc/s]*
20	5.46	52.02	120.09
30	5.46	56.50	135.65
200	5.46	80.38	227.16
500	5.46	95.13	285.44

Durata critica Borro Di Sant' Angelo

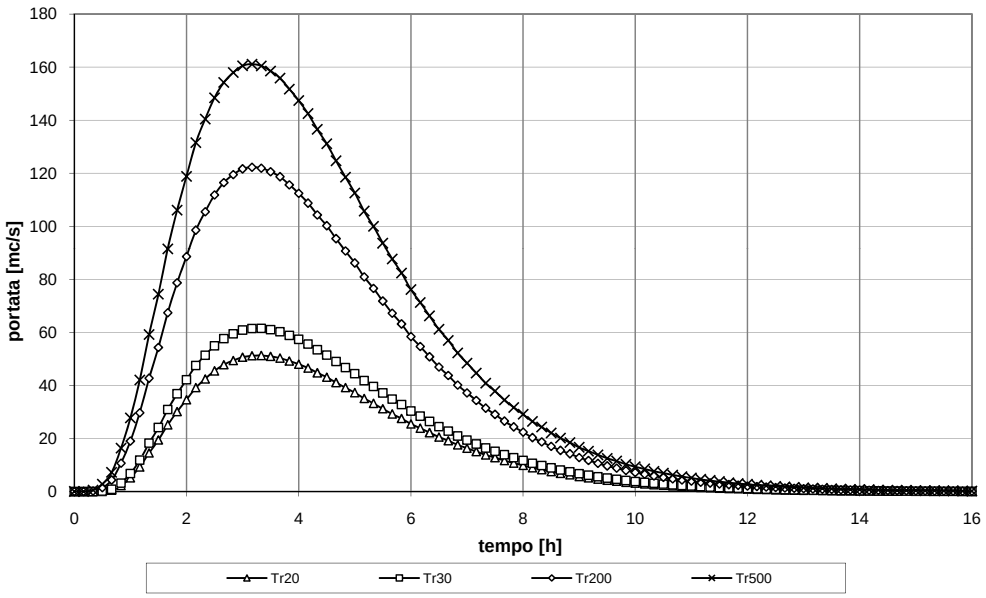
TR	*d*	*P*	*Qmax*
[anni]	*[h]*	*[mm]*	*[mc/s]*
20	1.01	24.96	51.32
30	1.01	27.12	61.55
200	1.01	39.93	122.33
500	1.01	48.14	161.13

Idrogrammi di piena:

Idrogrammi di piena Fiume Greve (Durata Critica Fiume Greve)



Idrogrammi di piena Fiume Greve (Durata Critica Borro di Sant'Angelo)



Risultati della modellistica idraulica (Durata Critica Fiume Greve)

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02842__06	22	120.06	155.23	158.37		159.03	0.006895	3.60	33.31	17.50	0.83
02837__06	21	120.05	154.89	158.08		158.71	0.006171	3.54	33.95	16.60	0.79
02832__06	20	120.05	154.67	157.68		158.31	0.006176	3.53	34.06	17.42	0.80
02828__06	19	120.04	153.98	157.24	157.61	158.44	0.011423	4.90	26.02	19.91	0.99
02822__06	18	120.05	153.52	156.93		157.38	0.004240	2.95	40.63	19.94	0.66
02816__06	17	120.04	153.57	156.56	156.29	157.23	0.006469	3.62	34.27	26.69	0.82
02812__06	16	120.02	153.18	156.32		156.81	0.006522	3.08	39.01	25.24	0.79
02807__06	15	120.01	153.39	155.96		156.47	0.007093	3.17	37.82	26.00	0.84
02801__06	14	120.02	151.89	155.40	155.34	156.40	0.010352	4.43	27.11	12.60	0.96
02796__06	13	120.00	151.80	155.40		155.86	0.003553	3.02	39.68	15.75	0.61
02794__09	12	119.99	151.67	155.20		155.79	0.004899	3.41	35.19	14.97	0.71
02791__06	11	119.99	151.62	154.94		155.62	0.005542	3.66	32.82	13.12	0.74
02789__09	10	119.99	151.50	154.98		155.52	0.004116	3.24	37.08	14.74	0.65
02787__06	9	119.99	151.43	154.85		155.40	0.004264	3.27	36.67	13.97	0.64
02784__09	8	119.99	151.09	154.91		155.30	0.002846	2.77	43.38	16.62	0.55
02782__06	7	119.99	151.11	154.67		155.22	0.004467	3.29	36.42	15.21	0.68
02779__09	6	119.99	151.12	154.80		155.11	0.002073	2.48	48.47	17.44	0.47
02777__06	5.5	119.99	151.14	154.71		155.08	0.002458	2.67	44.97	15.55	0.50
02772PA06	5	119.99	150.68	154.41	153.38	154.93	0.004046	3.20	37.45	12.83	0.60
02772PC06	3	119.99	150.61	154.02		154.65	0.005597	3.51	34.16	12.91	0.69
02769__09	2	119.99	150.43	153.77		154.44	0.005737	3.64	32.95	14.10	0.76
02766__06	1.5	119.99	150.21	153.77		154.28	0.004057	3.16	38.01	15.18	0.64
02763__09	1	119.99	150.09	153.44	153.01	154.17	0.01	3.79	31.64	13.93	0.80

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02842__06	22	135.60	155.23	158.57		159.26	0.006723	3.68	36.86	18.46	0.83
02837__06	21	135.56	154.89	158.25		158.94	0.006323	3.69	36.78	17.21	0.80
02832__06	20	135.52	154.67	157.85		158.53	0.006397	3.65	37.10	18.49	0.82
02828__06	19	134.69	153.98	157.42	157.75	158.64	0.010818	4.99	29.92	23.37	0.98
02822__06	18	138.10	153.52	157.11		157.61	0.004348	3.13	44.17	20.05	0.67
02816__06	17	136.19	153.57	156.71	156.66	157.42	0.006622	3.76	38.56	30.17	0.84
02812__06	16	135.74	153.18	156.49		156.99	0.006141	3.14	43.22	25.90	0.78
02807__06	15	135.57	153.39	156.23		156.69	0.005549	3.02	44.90	27.66	0.76
02801__06	14	135.55	151.89	155.63	155.55	156.66	0.009960	4.51	30.08	13.19	0.95
02796__06	13	135.54	151.80	155.68		156.16	0.003418	3.07	44.20	16.68	0.60
02794__09	12	135.53	151.67	155.49		156.08	0.004484	3.42	39.68	15.67	0.68
02791__06	11	135.52	151.62	155.24		155.93	0.005171	3.68	36.85	13.79	0.72
02789__09	10	135.52	151.50	155.30		155.83	0.003747	3.24	41.81	15.28	0.63
02787__06	9	135.52	151.43	155.18		155.73	0.003952	3.28	41.32	14.77	0.63
02784__09	8	135.52	151.09	155.25		155.64	0.002563	2.76	49.08	17.28	0.52
02782__06	7	135.52	151.11	155.04		155.56	0.003800	3.21	42.28	16.21	0.63
02779__09	6	135.52	151.12	155.16		155.47	0.001880	2.47	54.91	18.35	0.46
02777__06	5.5	135.52	151.14	155.08		155.44	0.002309	2.67	50.83	16.87	0.49
02772PA06	5	135.52	150.68	154.78	153.58	155.30	0.003692	3.19	42.42	13.61	0.58
02772PC06	3	135.52	150.61	154.24		154.92	0.005984	3.66	37.06	14.14	0.72
02769__09	2	135.52	150.43	153.99		154.71	0.005729	3.75	36.18	14.82	0.77
02766__06	1.5	135.52	150.21	154.00		154.54	0.004053	3.26	41.58	15.79	0.64
02763__09	1	135.52	150.09	153.67	153.24	154.43	0.01	3.87	35.05	15.02	0.81

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.0066 valida per tutti i tempi di ritorno.

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02842__06	22	227.05	155.23	159.41		160.31	0.006730	4.20	54.11	22.23	0.86
02837__06	21	227.04	154.89	159.00		160.01	0.007899	4.44	51.09	21.53	0.92
02832__06	20	227.01	154.67	158.57		159.56	0.007173	4.40	51.59	20.67	0.89
02828__06	19	227.01	153.98	158.12	158.47	159.56	0.010410	5.72	47.07	25.76	1.00
02822__06	18	226.67	153.52	157.84		158.59	0.004908	3.85	58.80	20.05	0.72
02816__06	17	226.69	153.57	157.97		158.38	0.002740	3.04	83.26	37.51	0.56
02812__06	16	226.69	153.18	157.82		158.22	0.002615	2.80	81.44	33.96	0.54
02807__06	15	226.70	153.39	157.86		158.13	0.001483	2.30	101.70	39.54	0.43
02801__06	14	226.69	151.89	157.31		158.08	0.003999	3.99	62.34	26.40	0.65
02796__06	13	226.70	151.80	157.45		157.91	0.002048	2.97	76.21	18.19	0.46
02794__09	12	226.70	151.67	157.38		157.86	0.002303	3.10	73.21	18.83	0.50
02791__06	11	226.70	151.62	157.25		157.76	0.002681	3.17	71.60	20.12	0.54
02789__09	10	226.70	151.50	157.26		157.73	0.002130	3.03	74.87	18.07	0.47
02787__06	9	226.70	151.43	157.19		157.62	0.002088	2.90	78.10	19.35	0.46
02784__09	8	226.70	151.09	157.23		157.59	0.001494	2.67	84.88	18.20	0.39
02782__06	7	226.70	151.11	157.12		157.54	0.001839	2.89	78.46	17.58	0.44
02779__09	6	226.70	151.12	157.20		157.50	0.001128	2.40	94.49	19.60	0.35
02777__06	5.5	226.70	151.14	157.14		157.45	0.001342	2.47	91.65	20.45	0.37
02772PA06	5	226.70	150.68	156.92	154.70	157.36	0.002124	2.95	76.86	17.73	0.45
02772PC06	3	226.70	150.61	155.18		156.17	0.006728	4.40	51.54	16.12	0.79
02769__09	2	226.70	150.43	154.96		155.93	0.006124	4.36	51.95	17.66	0.81
02766__06	1.5	226.70	150.21	155.00		155.74	0.004642	3.82	59.41	19.60	0.70
02763__09	1	226.70	150.09	154.68	154.30	155.63	0.01	4.32	52.48	19.15	0.83

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02842__06	22	285.14	155.23	159.88		160.87	0.006198	4.41	64.69	22.43	0.83
02837__06	21	285.09	154.89	159.61		160.57	0.006965	4.35	65.48	25.89	0.87
02832__06	20	284.64	154.67	159.31		160.22	0.005257	4.24	67.16	21.80	0.77
02828__06	19	284.51	153.98	159.09		159.99	0.004927	4.66	72.59	26.35	0.72
02822__06	18	284.58	153.52	159.17		159.74	0.002547	3.32	85.60	20.05	0.51
02816__06	17	284.62	153.57	159.39		159.62	0.000965	2.25	137.82	38.27	0.34
02812__06	16	284.63	153.18	159.32		159.56	0.000952	2.20	133.86	35.35	0.34
02807__06	15	284.64	153.39	159.35		159.52	0.000580	1.84	162.03	40.61	0.28
02801__06	14	284.64	151.89	159.08		159.46	0.001292	2.93	111.25	27.59	0.40
02796__06	13	284.64	151.80	159.04		159.42	0.001306	2.71	105.12	18.19	0.36
02794__09	12	284.63	151.67	159.01		159.39	0.001341	2.74	103.97	18.83	0.37
02791__06	11	284.64	151.62	158.93		159.30	0.001379	2.70	105.38	20.12	0.38
02789__09	10	284.64	151.50	158.93		159.30	0.001299	2.71	104.96	18.07	0.36
02787__06	9	284.64	151.43	158.86		159.20	0.001220	2.58	110.46	19.35	0.34
02784__09	8	284.64	151.09	158.88		159.20	0.001011	2.47	115.06	18.20	0.31
02782__06	7	284.64	151.11	158.81		159.16	0.001188	2.63	108.17	17.58	0.34
02779__09	6	284.64	151.12	158.87		159.13	0.000774	2.24	127.24	19.60	0.28
02777__06	5.5	284.64	151.14	158.82		159.08	0.000853	2.26	126.05	20.45	0.29
02772PA06	5	284.64	150.68	158.66	155.29	159.02	0.001294	2.64	107.70	17.73	0.34
02772PC06	3	284.64	150.61	155.62		156.82	0.007288	4.85	58.73	16.59	0.82
02769__09	2	284.64	150.43	155.40		156.55	0.006483	4.75	59.88	18.29	0.84
02766__06	1.5	284.64	150.21	155.46		156.34	0.004815	4.15	68.59	20.03	0.72
02763__09	1	284.64	150.09	155.14	154.77	156.23	0.01	4.63	61.44	19.82	0.84

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.0066 valida per tutti i tempi di ritorno.

Risultati della modellistica idraulica (Durata Critica Borro di Sant'Angelo)

HEC-RAS Risultati (Valori utilizzati come condizione di valle per il Fosso di Battaglio)			
Sezione	River Sta	Tr [anni]	Max W.S. Elev [m slm]
02779__09	6	20	153.20
02779__09	6	30	153.44
02779__09	6	200	154.85
02779__09	6	500	155.79

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.0066 valida per tutti i tempi di ritorno.

Borro di Sant' Angelo

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
3.17	6.97	3.88	2.11	0.33

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
21.652	0.311	0.180	20.874	0.302	0.208

Sintesi dei risultati del modello idrologico:

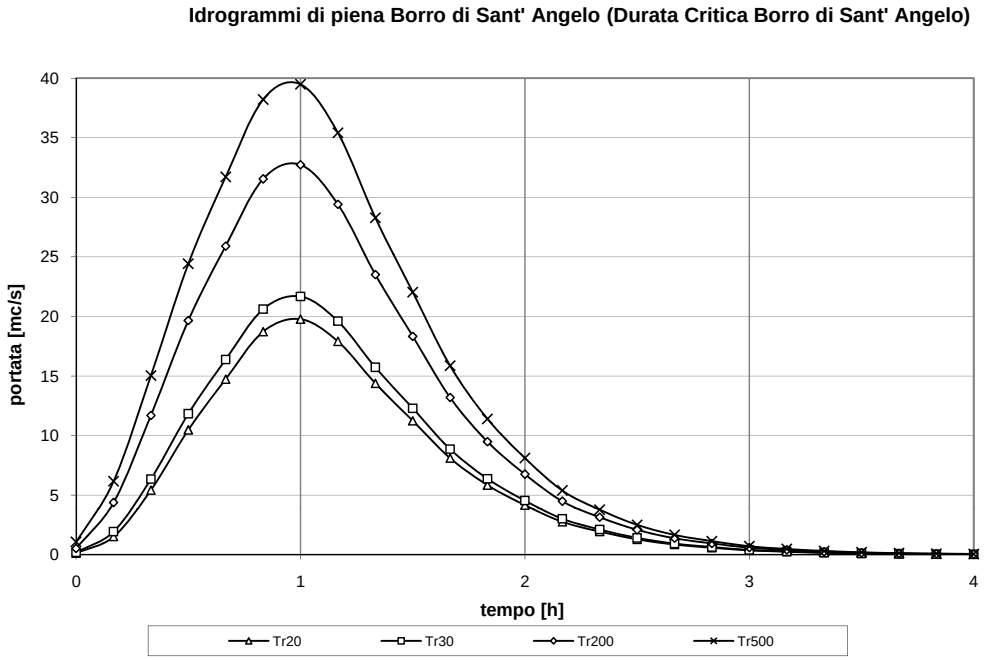
Durata critica Borro di Sant' Angelo

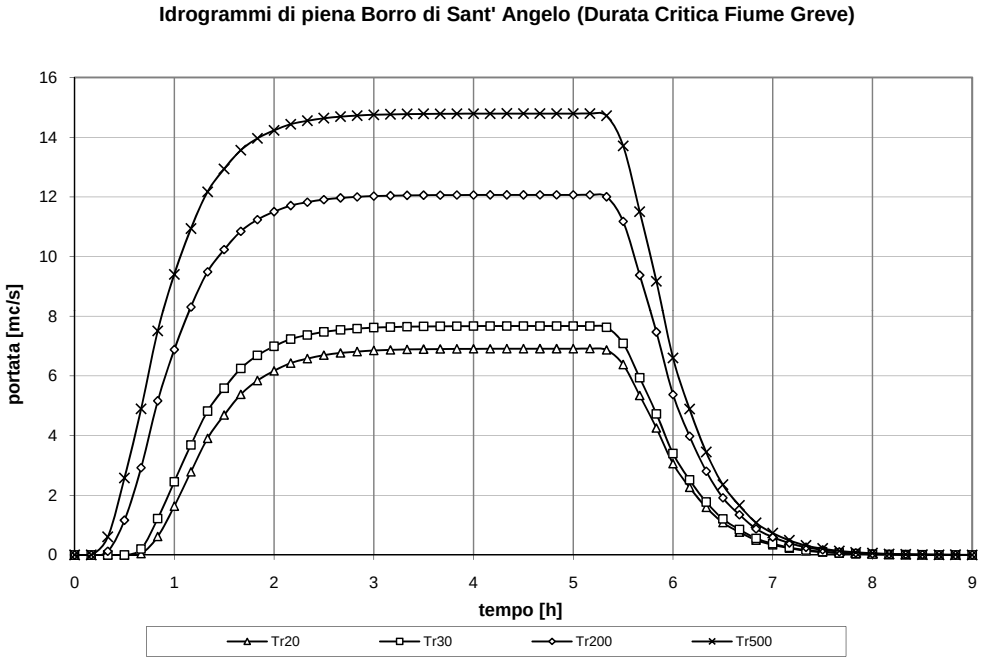
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	1.01	36.74	19.98
30	1.01	39.52	21.93
200	1.01	55.60	33.23
500	1.01	65.58	40.13

Durata critica Fiume Greve

TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	5.46	62.32	6.96
30	5.46	67.04	7.73
200	5.46	94.33	12.14
500	5.46	111.24	14.88

Idrogrammi di piena:



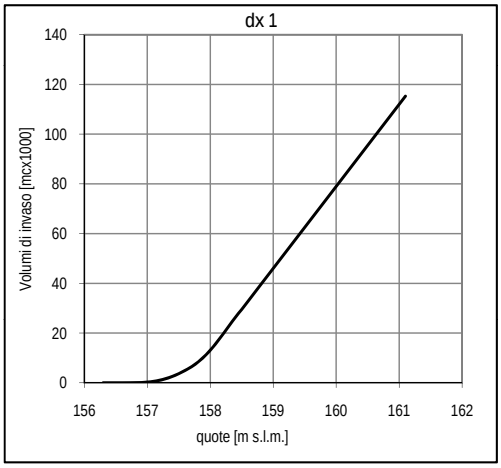


Risultati della modellistica idraulica (Durata Critica Borro di Sant' Angelo)

Condizioni al contorno di valle

Condizione di valle per il Borro di Sant'Angelo (Durata Critica Borro di Sant'Angelo): Max W.S Elev sezione 02779__09 del Fiume Greve	
Tr [anni]	W.S. Elev [m slm]
20	153.20
30	153.44
200	154.85
500	155.79

Curve di invaso Aree di Potenziale Esondazione



HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	19.77	161.66	163.11	163.44	164.15	0.027641	4.50	4.39	5.07	1.54
00029__11	8	19.71	159.58	161.45		161.86	0.007453	2.83	6.98	5.74	0.82
00026PB11	7	19.71	158.77	161.54	160.56	161.70	0.002891	1.79	11.00	8.00	0.49
00026PC11	6	19.71	158.77	160.21	160.56	161.40	0.031103	4.84	4.07	3.82	1.50
00015PB11	5	16.46	155.26	157.55		157.59	0.00056	0.88	18.81	13.72	0.24
00015PC11	4	15.82	155.26	156.74		156.95	0.007794	2.04	7.76	12.56	0.83
00010PB11	3	17.77	154.03	156.72	155.54	156.82	0.001046	1.34	13.29	6.96	0.31
00010PC11	2	17.77	154.03	155.27	155.54	156.18	0.024617	4.22	4.21	4.90	1.45
00003__11	1	1.00	151.64	153.20	152.03	153.20	0.000081	0.25	3.98	3.50	0.08

HEC-RAS Risultati TR20					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	156.74	156.30	1.08	350	40

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	21.68	161.66	163.19	163.52	164.24	0.026823	4.56	4.76	5.27	1.53
00029__11	8	21.63	159.58	162.27		162.43	0.001967	1.77	12.19	6.81	0.42
00026PB11	7	21.63	158.77	162.31	160.65	162.39	0.000935	1.26	17.20	8.00	0.27
00026PC11	6	21.63	158.77	160.28	160.65	161.55	0.031495	4.99	4.33	3.87	1.51
00015PB11	5	18.45	155.26	157.58		157.62	0.000668	0.96	19.12	13.72	0.26
00015PC11	4	18.41	155.26	156.86		157.06	0.006223	1.97	9.37	13.46	0.75
00010PB11	3	18.18	154.03	156.92	155.56	157.00	0.000833	1.24	14.65	6.96	0.27
00010PC11	2	18.18	154.03	155.33	155.56	156.17	0.021807	4.06	4.48	5.02	1.37
00003__11	1	1.00	151.64	153.44	152.03	153.44	0.000048	0.21	4.86	3.78	0.06

HEC-RAS Risultati TR30					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	156.91	156.30	1.29	990	130

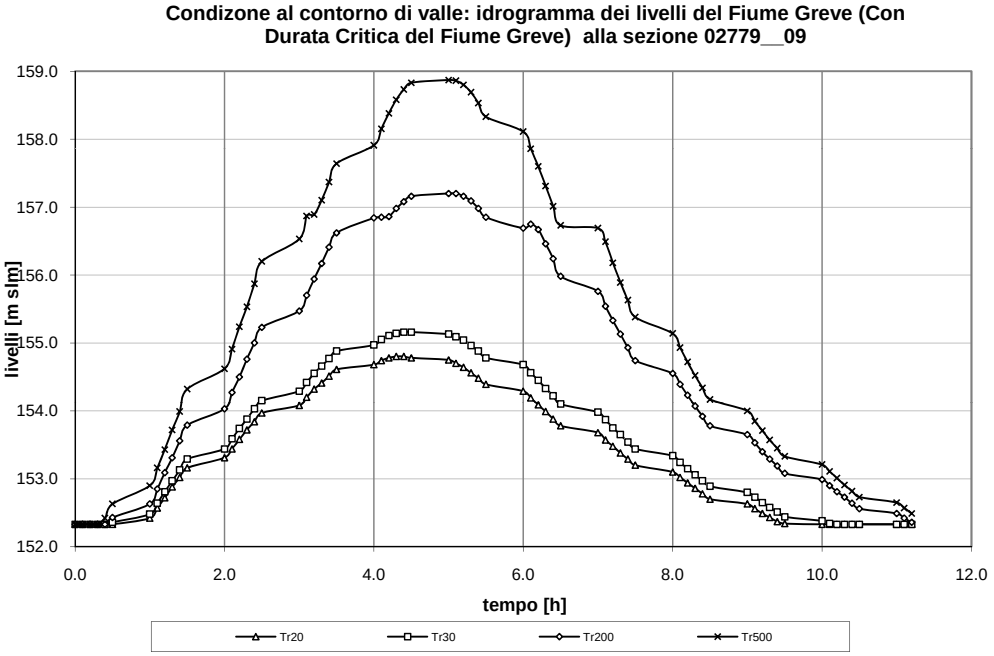
HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	32.73	161.66	163.49	163.93	164.78	0.026655	5.04	6.50	6.13	1.56
00029__11	8	32.69	159.58	162.61		162.87	0.002804	2.24	14.57	7.25	0.51
00026PB11	7	32.68	158.77	162.68	161.30	162.81	0.001366	1.62	20.11	8.00	0.33
00026PC11	6	32.68	158.77	160.62	161.30	162.28	0.033449	5.70	5.73	4.15	1.55
00015PB11	5	26.06	155.26	157.82		157.89	0.000815	1.16	22.43	13.72	0.29
00015PC11	4	25.80	155.26	157.27		157.42	0.002815	1.72	14.96	13.72	0.53
00010PB11	3	24.95	154.03	157.28	155.83	157.39	0.001013	1.45	17.18	6.96	0.29
00010PC11	2	24.95	154.03	155.68	155.83	156.46	0.015615	3.91	6.38	5.75	1.19
00003__11	1	1.00	151.64	154.85	152.03	154.85	0.000005	0.08	12.20	6.78	0.02

HEC-RAS Risultati TR200					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	157.27	156.30	4.58	6690	1540

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	39.49	161.66	163.66	164.10	165.05	0.02652	5.23	7.55	6.72	1.57
00029__11	8	39.45	159.58	162.94		163.21	0.002728	2.32	16.98	7.68	0.50
00026PB11	7	39.44	158.77	163.00	161.52	163.16	0.001416	1.74	22.70	8.00	0.33
00026PC11	6	39.44	158.77	160.82	161.52	162.66	0.033976	6.02	6.55	4.30	1.56
00015PB11	5	30.31	155.26	157.95		158.03	0.000864	1.25	24.29	13.72	0.30
00015PC11	4	29.95	155.26	157.37		157.54	0.00287	1.83	16.35	13.72	0.54
00010PB11	3	30.26	154.03	157.35	156.02	157.50	0.001394	1.72	17.61	6.96	0.34
00010PC11	2	30.26	154.03	155.99	156.01	156.67	0.011435	3.67	8.25	6.38	1.03
00003__11	1	1.07	151.64	155.79	152.04	155.79	0.000002	0.06	18.69	6.92	0.01

HEC-RAS Risultati TR500					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	157.36	156.30	7.00	8660	2270

Risultati della modellistica idraulica (Durata critica Fiume Greve)



HEC-RAS Risultati TR20

Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	3.91	161.66	162.35	162.48	162.79	0.02717	2.94	1.33	2.98	1.40
00029__11	8	3.90	159.58	160.20	160.30	160.58	0.023198	2.73	1.43	3.25	1.31
00026PB11	7	3.97	158.77	159.76	159.56	159.89	0.00533	1.62	2.44	3.46	0.62
00026PC11	6	3.97	158.77	159.44	159.56	159.86	0.028492	2.87	1.38	3.20	1.40
00015PB11	5	3.89	155.26	156.16		156.24	0.002781	1.24	3.14	4.68	0.48
00015PC11	4	3.89	155.26	155.69	155.86	156.24	0.047311	3.30	1.18	3.59	1.84
00010PB11	3	3.88	154.03	154.96	154.69	155.06	0.003634	1.39	2.80	4.21	0.54
00010PC11	2	1.00	154.03	154.80		154.81	0.000514	0.47	2.13	3.81	0.20
00003__11	1	0.99	151.64	154.80	152.03	154.80	0.000005	0.08	11.86	6.72	0.02

HEC-RAS Risultati TR30

Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	7.67	161.66	162.61	162.79	163.23	0.026713	3.50	2.19	3.66	1.44
00029__11	8	7.67	159.58	160.49	160.60	160.99	0.019287	3.14	2.45	3.74	1.24
00026PB11	7	7.67	158.77	160.18	159.85	160.37	0.005025	1.93	3.98	3.80	0.60
00026PC11	6	7.67	158.77	159.68	159.85	160.32	0.028373	3.55	2.16	3.40	1.42
00015PB11	5	7.67	155.26	156.75		156.80	0.001766	0.98	7.87	12.62	0.39
00015PC11	4	7.67	155.26	155.89	156.14	156.69	0.04278	3.97	1.93	4.02	1.83
00010PB11	3	7.67	154.03	155.43	155.00	155.55	0.002816	1.52	5.04	5.26	0.50
00010PC11	2	7.67	154.03	155.06		155.35	0.009775	2.40	3.20	4.42	0.90
00003__11	1	7.66	151.64	155.16	152.79	155.17	0.000173	0.53	14.33	6.92	0.12

HEC-RAS Risultati TR200

Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	12.07	161.66	162.83	163.08	163.62	0.02707	3.95	3.05	4.25	1.49
00029__11	8	12.04	159.58	160.82	160.88	161.34	0.014451	3.19	3.77	4.38	1.10
00026PB11	7	12.07	158.77	160.66	160.14	160.88	0.004225	2.05	5.90	4.18	0.55
00026PC11	6	12.07	158.77	159.90	160.14	160.76	0.02944	4.13	2.93	3.57	1.46
00015PB11	5	12.06	155.26	157.38		157.40	0.000462	0.74	16.39	13.72	0.21
00015PC11	4	12.07	155.26	157.26		157.29	0.000646	0.82	14.74	13.72	0.25
00010PB11	3	12.06	154.03	157.25	155.26	157.28	0.000244	0.71	16.98	6.96	0.15
00010PC11	2	12.05	154.03	157.19		157.22	0.000262	0.73	16.55	6.96	0.15
00003__11	1	12.01	151.64	157.20	153.11	157.20	0.000016	0.22	62.90	23.01	0.03

HEC-RAS Risultati TR500

Sezione	River Sta	Q Total	Min Ch El	W.S. Elev	Crit. W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude
		[mc/s]	[m slm]	[m slm]	[m slm]	[m slm]	[m/m]	[m/s]	[mq]	[m]	[-]
00037__11	9	14.79	161.66	162.94	163.22	163.83	0.02742	4.18	3.54	4.56	1.51
00029__11	8	14.79	159.58	161.02	161.04	161.53	0.012039	3.14	4.71	4.81	1.01
00026PB11	7	14.79	158.77	160.95	160.30	161.17	0.003959	2.08	7.12	4.66	0.54
00026PC11	6	14.79	158.77	160.02	160.30	161.00	0.029891	4.40	3.36	3.67	1.47
00015PB11	5	14.76	155.26	158.88		158.88	0.000014	0.20	76.77	31.23	0.04
00015PC11	4	14.76	155.26	158.88		158.88	0.000014	0.20	76.67	31.23	0.04
00010PB11	3	14.74	154.03	158.87	155.40	158.87	0.000012	0.20	83.97	31.24	0.03
00010PC11	2	14.76	154.03	158.87		158.87	0.000012	0.20	83.96	31.24	0.03
00003__11	1	14.68	151.64	158.87	153.29	158.87	0.000006	0.16	101.33	23.01	0.02

Torrente Pesa (Cerbaia)

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
209.60	13.33	2.26	3.47	2.35

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
21.617	0.352	0.160	19.241	0.349	0.201

Sintesi dei risultati del modello idrologico:

Durata critica Torrente Pesa

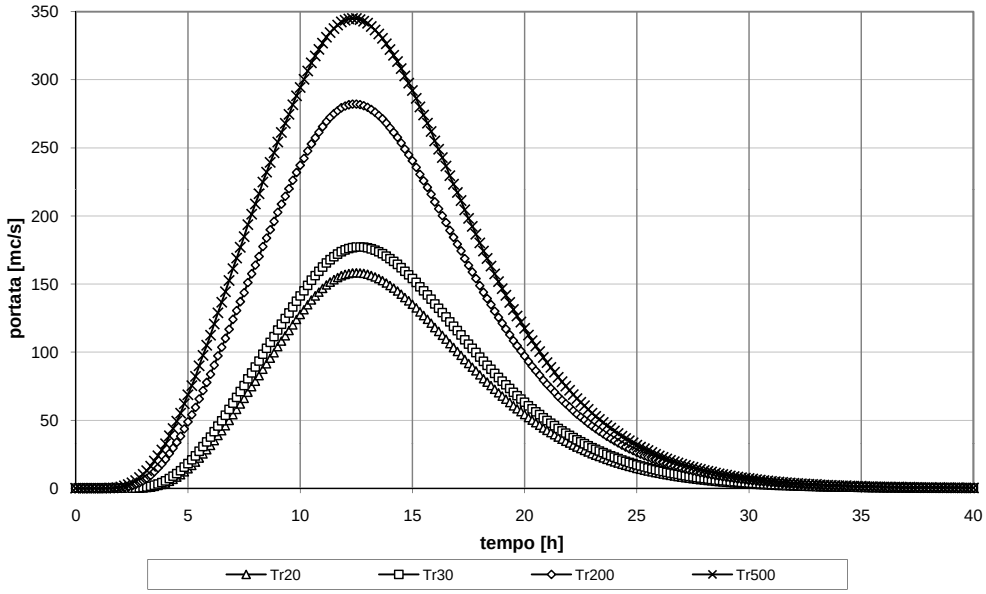
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	10.04	57.77	158.30
30	10.04	62.44	177.25
200	10.04	84.59	282.26
500	10.04	97.95	345.12

Durata critica Torrente Sugana

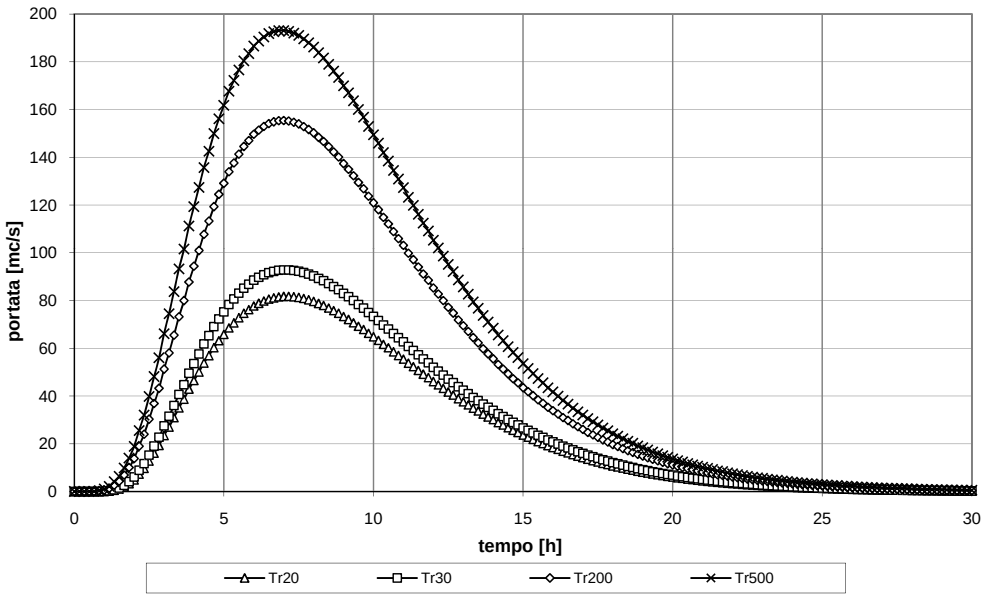
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	2.05	27.41	81.76
30	2.05	29.25	92.86
200	2.05	39.62	155.44
500	2.05	45.88	193.15

Idrogrammi di piena:

Idrogrammi di piena Torrente Pesa (Durata Critica Torrente Pesa)



Idrogrammi di piena Torrente Pesa (Durata Critica Torrente Sugana)



Risultati della modellistica idraulica (Durata Critica Torrente Pesa)

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
01275__11	23	158.29	78.27	79.98	79.93	80.40	0.008142	2.86	55.37	58.99	0.94
01268__11	22	158.29	77.59	79.43		79.63	0.005258	1.98	79.84	105.88	0.73
01261__11	21	158.28	77.16	79.19		79.31	0.002348	1.55	102.27	107.67	0.51
01255__11	20	158.28	76.37	79.02		79.18	0.002290	1.75	90.67	76.78	0.51
01250__11	19	158.28	76.25	78.81		79.02	0.004329	2.04	77.51	84.60	0.68
01245__11	18	158.28	75.48	78.48		78.73	0.004174	2.18	72.55	68.80	0.68
01236__11	17	158.27	76.02	78.17		78.41	0.003131	2.15	73.78	58.17	0.61
01230__11	16	158.27	75.21	77.98		78.22	0.002815	2.17	72.88	51.65	0.58
01224__11	15	158.27	75.04	77.88		78.04	0.001968	1.75	90.68	69.31	0.49
01218__11	14	158.26	75.02	77.75		77.91	0.002001	1.73	91.73	72.41	0.49
01210__11	13	158.26	74.39	77.44		77.67	0.002035	2.12	74.71	42.30	0.51
01204__11	12	158.26	74.52	77.17		77.48	0.003559	2.45	64.49	44.76	0.65
01198__11	11	158.26	74.78	76.99		77.22	0.002611	2.11	74.93	53.58	0.57
01196PB11	10	158.26	75.23	76.93	76.40	77.18	0.002460	2.19	72.33	44.66	0.55
01196PC11	9	158.26	75.21	75.96	76.32	77.19	0.037199	4.91	32.26	47.51	1.90
01191__11	8	158.26	72.32	74.42		74.91	0.007660	3.12	50.69	44.17	0.93
01188__11	7	158.26	72.57	73.99	74.17	74.86	0.014329	4.14	38.19	34.87	1.26
01187__11	6	158.26	72.95	73.90	74.26	75.14	0.026231	4.94	32.03	34.99	1.65
01186__11	5	158.26	71.65	73.78		74.09	0.002811	2.48	63.90	36.00	0.59
01181__11	4	158.25	71.10	73.63		73.87	0.002139	2.16	73.25	43.62	0.53
01174__11	3	158.08	70.90	73.42		73.71	0.002434	2.39	66.05	36.71	0.57
01167__11	2	160.83	70.60	72.92		73.27	0.003574	2.60	61.96	40.68	0.67
01162__11	1	158.53	70.46	72.66	72.35	73.05	0.00	2.75	57.75	40.16	0.73

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
01275__11	23	177.22	78.27	80.05	80.02	80.50	0.008397	2.98	59.43	60.82	0.96
01268__11	22	177.22	77.59	79.49		79.71	0.005124	2.05	86.60	107.43	0.73
01261__11	21	177.21	77.16	79.28		79.40	0.002202	1.58	111.89	108.42	0.50
01255__11	20	177.21	76.37	79.11		79.28	0.002306	1.83	96.98	77.06	0.52
01250__11	19	177.21	76.25	78.89		79.12	0.004171	2.09	84.65	86.51	0.68
01245__11	18	177.21	75.48	78.58		78.84	0.003956	2.23	79.34	69.76	0.67
01236__11	17	177.21	76.02	78.28		78.53	0.003018	2.21	80.04	58.48	0.60
01230__11	16	177.21	75.21	78.09		78.35	0.002846	2.26	78.54	53.00	0.59
01224__11	15	177.21	75.04	78.00		78.16	0.001851	1.79	99.07	69.65	0.48
01218__11	14	177.20	75.02	77.89		78.04	0.001849	1.74	101.65	74.41	0.48
01210__11	13	177.20	74.39	77.55		77.80	0.002100	2.23	79.41	42.52	0.52
01204__11	12	177.20	74.52	77.28		77.61	0.003713	2.55	69.40	46.94	0.67
01198__11	11	177.20	74.78	77.12		77.36	0.002456	2.16	82.00	54.03	0.56
01196PB11	10	177.20	75.23	77.06	76.49	77.32	0.002431	2.28	77.84	44.66	0.55
01196PC11	9	177.20	75.21	76.00	76.41	77.36	0.037951	5.16	34.35	47.55	1.94
01191__11	8	177.20	72.32	74.51		75.04	0.007465	3.24	54.76	44.20	0.93
01188__11	7	177.20	72.57	74.08	74.27	75.01	0.013683	4.27	41.52	34.87	1.25
01187__11	6	177.20	72.95	74.00	74.36	75.26	0.023151	4.97	35.66	34.99	1.57
01186__11	5	177.20	71.65	73.89		74.24	0.002877	2.60	68.07	36.02	0.60
01181__11	4	177.19	71.10	73.76		74.01	0.002145	2.25	78.88	44.34	0.54
01174__11	3	177.05	70.90	73.53		73.86	0.002552	2.52	70.19	37.33	0.59
01167__11	2	179.97	70.60	73.04		73.41	0.003584	2.70	66.56	41.16	0.68
01162__11	1	177.47	70.46	72.77	72.46	73.19	0.00	2.85	62.25	40.93	0.74

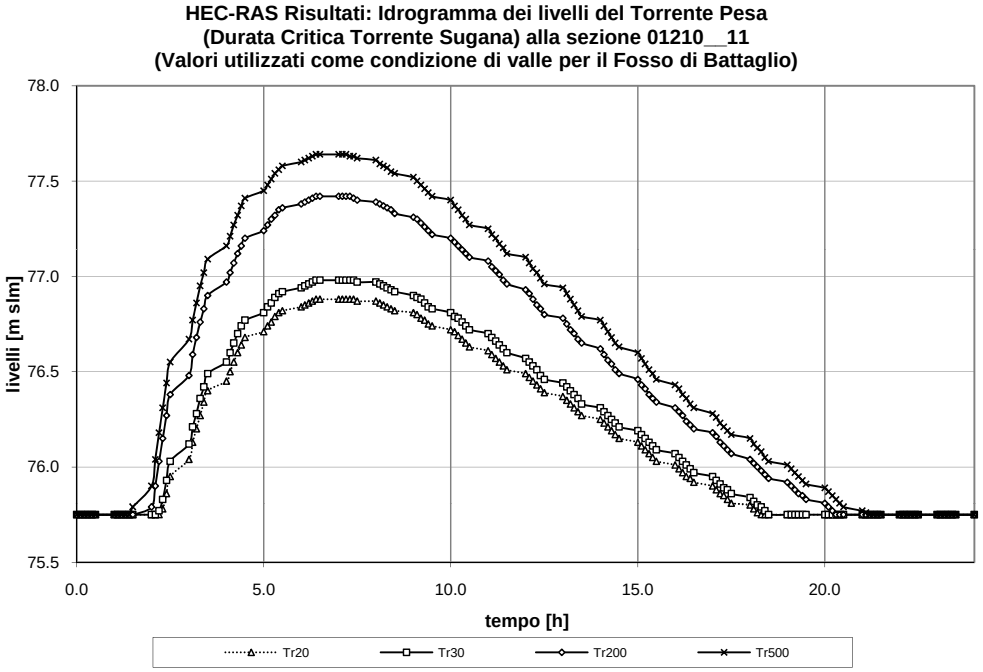
Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00425 valida per tutti i tempi di ritorno.

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
01275__11	23	282.21	78.27	80.34	80.38	81.01	0.009401	3.61	78.11	65.20	1.05
01268__11	22	282.21	77.59	79.82		80.09	0.004644	2.28	124.03	121.87	0.72
01261__11	21	282.21	77.16	79.71		79.87	0.001791	1.76	161.16	118.35	0.47
01255__11	20	282.20	76.37	79.49		79.74	0.002446	2.22	126.92	78.36	0.56
01250__11	19	282.20	76.25	79.33		79.59	0.003344	2.25	125.45	97.23	0.63
01245__11	18	282.20	75.48	79.07		79.38	0.003122	2.47	114.27	72.24	0.63
01236__11	17	282.20	76.02	78.79		79.12	0.002756	2.57	110.02	59.95	0.60
01230__11	16	282.20	75.21	78.59		78.95	0.002889	2.66	106.26	56.65	0.62
01224__11	15	282.20	75.04	78.57		78.78	0.001564	2.03	139.23	71.17	0.46
01218__11	14	282.20	75.02	78.51		78.68	0.001443	1.85	152.15	84.17	0.44
01210__11	13	282.19	74.39	78.08		78.47	0.002408	2.76	102.08	43.55	0.58
01204__11	12	282.19	74.52	77.88		78.26	0.004035	2.74	103.15	67.78	0.71
01198__11	11	282.19	74.78	77.80		78.08	0.001908	2.37	119.26	56.35	0.52
01196PB11	10	282.19	75.23	77.69	76.91	78.05	0.002279	2.66	106.04	44.72	0.55
01196PC11	9	282.19	75.21	76.26	76.81	78.15	0.036057	6.09	46.33	47.76	1.97
01191__11	8	282.19	72.32	74.99		75.69	0.006472	3.70	76.20	44.36	0.90
01188__11	7	282.19	72.57	74.58	74.78	75.75	0.011240	4.79	58.87	34.90	1.18
01187__11	6	282.19	72.95	74.52	74.86	75.92	0.015425	5.24	53.85	35.01	1.35
01186__11	5	282.19	71.65	74.44		74.97	0.003285	3.20	88.13	36.82	0.66
01181__11	4	282.19	71.10	74.38		74.73	0.002118	2.63	107.47	47.14	0.56
01174__11	3	282.19	70.90	74.08		74.57	0.002947	3.10	90.97	39.29	0.65
01167__11	2	286.57	70.60	73.58		74.10	0.003656	3.20	89.54	43.45	0.71
01162__11	1	282.77	70.46	73.30	72.95	73.87	0.00	3.35	84.43	43.09	0.76

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
01275__11	23	345.07	78.27	80.49	80.58	81.28	0.009721	3.92	88.08	66.75	1.09
01268__11	22	345.24	77.59	80.03		80.30	0.003895	2.31	149.74	126.36	0.68
01261__11	21	345.04	77.16	79.94		80.12	0.001594	1.84	189.18	118.58	0.46
01255__11	20	345.03	76.37	79.71		80.00	0.002445	2.40	143.81	79.09	0.57
01250__11	19	345.03	76.25	79.59		79.86	0.002854	2.28	151.09	101.62	0.60
01245__11	18	345.02	75.48	79.34		79.68	0.002811	2.57	134.01	73.50	0.61
01236__11	17	345.01	76.02	79.06		79.44	0.002650	2.73	126.37	60.74	0.60
01230__11	16	345.00	75.21	78.86		79.27	0.002797	2.83	122.07	57.78	0.62
01224__11	15	345.00	75.04	78.89		79.12	0.001450	2.13	161.75	72.20	0.45
01218__11	14	345.00	75.02	78.84		79.03	0.001247	1.91	180.56	85.46	0.42
01210__11	13	344.99	74.39	78.37		78.83	0.002481	3.00	114.94	44.12	0.59
01204__11	12	344.99	74.52	78.27		78.62	0.003307	2.61	131.98	80.41	0.65
01198__11	11	344.99	74.78	78.16		78.47	0.001734	2.46	140.13	57.92	0.51
01196PB11	10	344.99	75.23	78.03	77.14	78.44	0.002222	2.85	121.21	44.83	0.55
01196PC11	9	344.99	75.21	76.40	77.03	78.54	0.034429	6.49	53.14	47.88	1.97
01191__11	8	344.99	72.32	75.23		76.04	0.006322	3.97	86.94	44.44	0.91
01188__11	7	344.99	72.57	74.84	75.05	76.16	0.010686	5.09	67.79	34.91	1.17
01187__11	6	344.99	72.95	74.78	75.13	76.31	0.013935	5.48	62.98	35.02	1.30
01186__11	5	344.99	71.65	74.71		75.34	0.003518	3.52	97.91	36.90	0.69
01181__11	4	344.99	71.10	74.69		75.10	0.002158	2.82	122.19	48.65	0.57
01174__11	3	344.99	70.90	74.32		74.92	0.003224	3.42	100.85	40.12	0.69
01167__11	2	346.98	70.60	73.85		74.44	0.003696	3.43	101.20	44.56	0.73
01162__11	1	345.29	70.46	73.57	73.21	74.23	0.00	3.59	96.10	44.07	0.78

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00425 valida per tutti i tempi di ritorno.

Risultati della modellistica idraulica (Durata critica torrente Sugana)



Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00425 valida per tutti i tempi di ritorno.

Torrente Sugana

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
15.92	7.17	0.80	2.76	0.60

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
21.652	0.311	0.180	20.874	0.302	0.208

Sintesi dei risultati del modello idrologico:

Durata critica Torrente Sugana

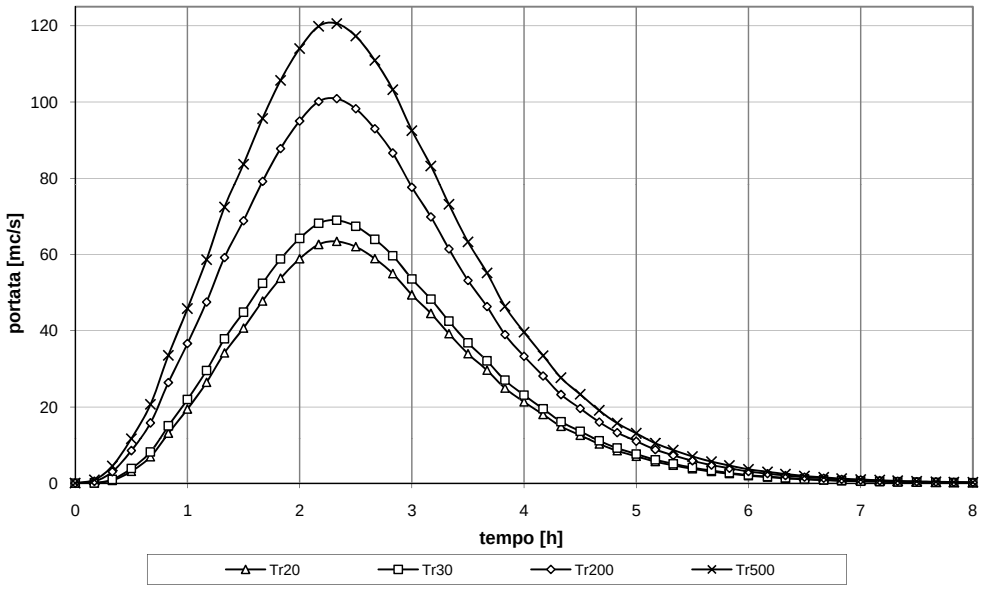
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	2.05	43.63	63.47
30	2.05	46.93	69.05
200	2.05	66.03	101.17
500	2.05	77.87	121.01

Durata critica Torrente Pesa

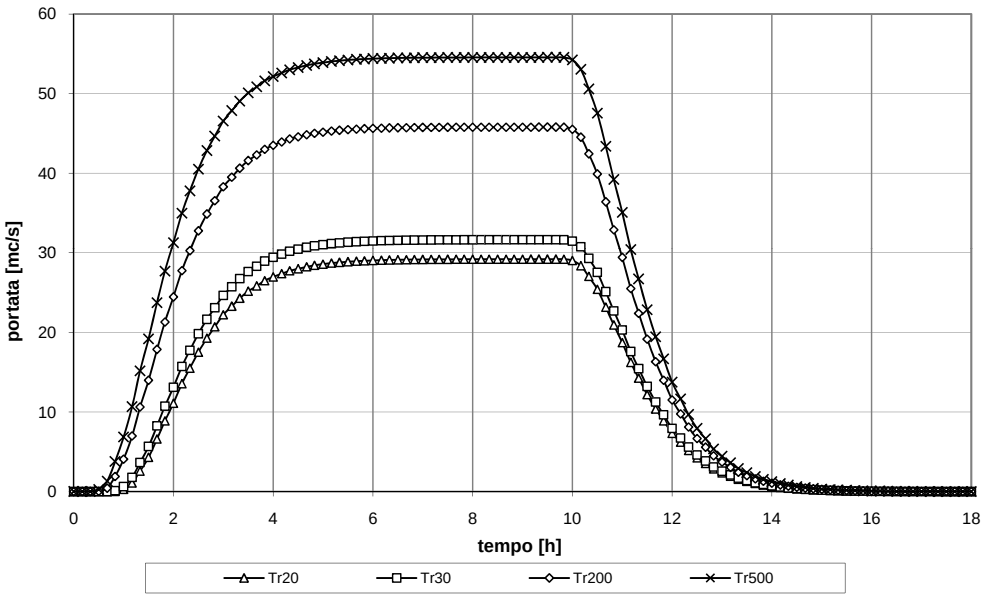
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	10.04	73.04	29.20
30	10.04	78.57	31.64
200	10.04	110.55	45.79
500	10.04	130.37	54.55

Idrogrammi di piena:

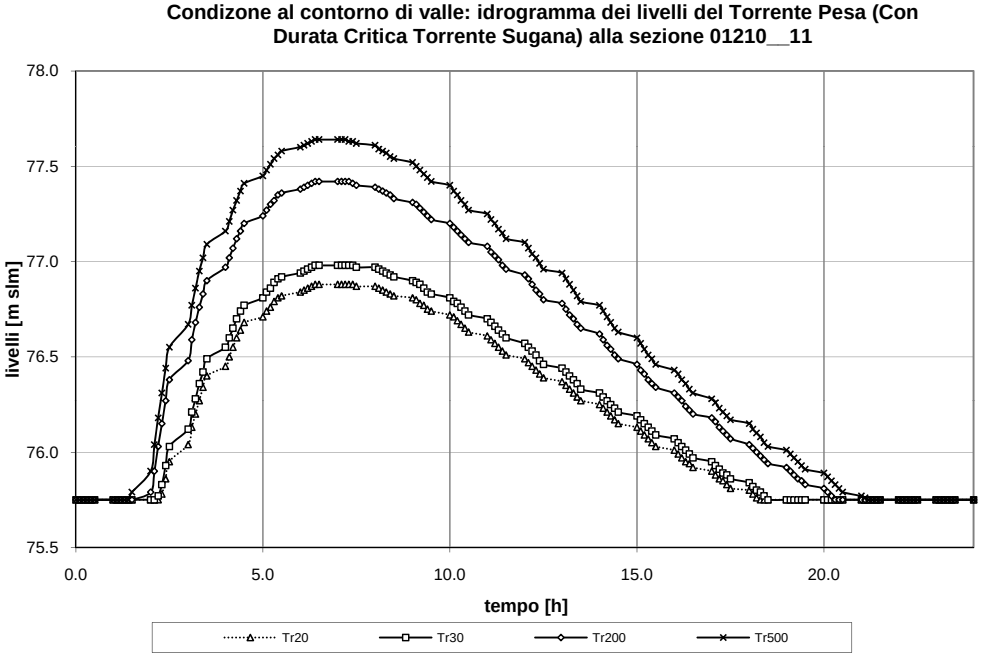
Idrogrammi di piena Torrente Sugana (Durata Critica Torrente Sugana)



Idrogrammi di piena Torrente Sugana (Durata Critica Torrente Pesa)



Risultati della modellistica idraulica (Durata Critica Torrente Sugana)



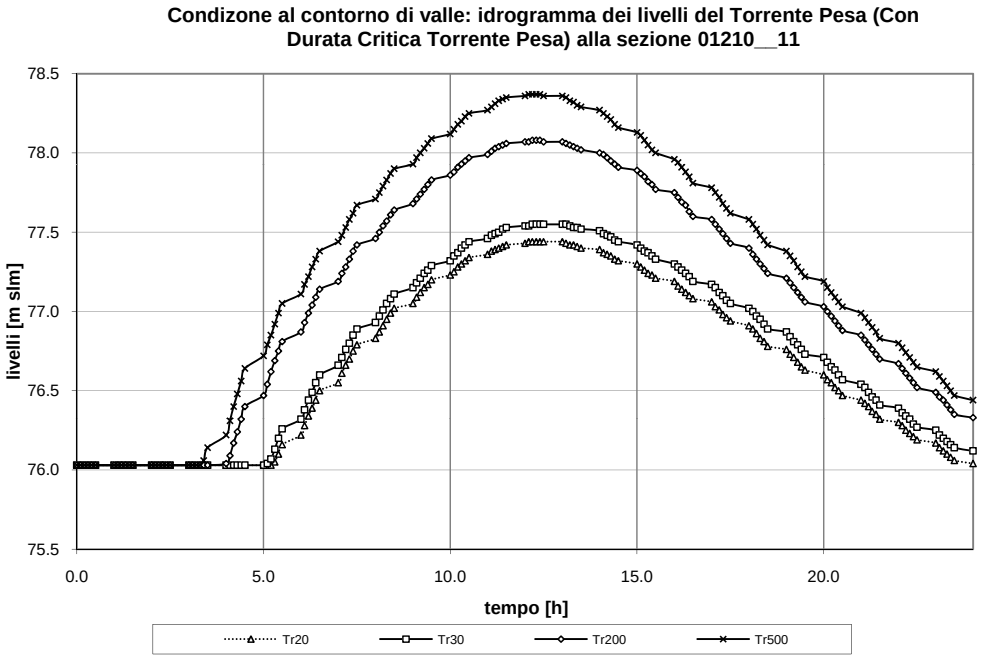
HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	63.44	87.08	88.64		88.80	0.003122	1.75	36.28	39.75	0.58
00093BB11	23	63.44	87.02	88.63	88.28	88.79	0.003055	1.74	36.46	39.58	0.58
00093BC11	22	63.42	86.26	88.59		88.72	0.002232	1.59	39.91	38.82	0.50
00088__11	21	63.41	85.67	88.22	88.31	89.10	0.010836	4.17	15.19	9.97	1.08
00082__11	20	63.40	84.99	87.45	87.62	88.37	0.012242	4.25	14.91	10.80	1.15
00077__11	19	63.39	84.57	86.87	86.97	87.67	0.011309	3.95	16.07	12.21	1.10
00073__11	18	63.39	84.26	86.45	86.55	87.30	0.010697	4.07	15.57	10.75	1.08
00069__11	17	63.39	83.76	85.97	86.22	87.00	0.014121	4.49	14.10	10.33	1.23
00065__11	16	63.38	83.33	85.48	85.58	86.08	0.012730	3.45	18.40	19.96	1.15
00061__11	15	63.38	82.70	85.00	85.16	85.92	0.012380	4.24	14.95	10.94	1.16
00055__11	14	63.37	82.03	84.40	84.33	84.98	0.008498	3.40	18.64	14.23	0.95
00050__11	13	63.37	81.54	83.85	84.02	84.84	0.012686	4.41	14.38	9.58	1.15
00039__11	12	63.36	80.52	82.53	82.76	83.56	0.014588	4.50	14.08	10.65	1.25
00034__11	11	63.32	79.68	81.89	81.89	82.48	0.009255	3.41	18.58	15.82	1.00
00026PB11	8	59.98	78.98	81.43	80.80	81.72	0.002661	2.39	25.13	13.94	0.57
00026PC11	7	65.07	78.98	81.08		81.60	0.005850	3.21	20.27	13.22	0.83
00024BB11	6	64.57	79.03	81.24	80.64	81.52	0.002742	2.37	27.26	15.95	0.58
00024BC11	5	64.57	78.01	80.66		80.98	0.003085	2.49	25.95	14.32	0.59
00023BB11	4	64.33	78.27	80.65	80.04	80.96	0.002913	2.47	26.09	14.61	0.59
00023BC11	3	64.33	77.06	79.52		79.99	0.004735	3.03	21.23	11.49	0.71
00016__11	2	63.45	76.41	78.75	78.82	79.63	0.010663	4.16	15.26	9.73	1.06
00007__11	1	63.29	75.41	77.87	77.87	78.63	0.009267	3.86	16.41	10.87	1

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	68.99	87.08	88.74		88.89	0.002762	1.71	40.41	41.86	0.55
00093BB11	23	68.99	87.02	88.73	88.32	88.88	0.002707	1.70	40.60	41.70	0.55
00093BC11	22	68.99	86.26	88.70		88.82	0.002028	1.56	44.16	41.01	0.48
00088__11	21	68.96	85.67	88.31	88.43	89.24	0.011007	4.27	16.14	10.36	1.09
00082__11	20	68.95	84.99	87.54	87.71	88.50	0.012312	4.35	15.85	11.14	1.16
00077__11	19	68.94	84.57	86.96	87.07	87.78	0.011190	4.02	17.15	12.57	1.10
00073__11	18	68.94	84.26	86.54	86.67	87.43	0.010947	4.17	16.54	11.23	1.10
00069__11	17	68.94	83.76	86.05	86.33	87.13	0.014442	4.59	15.01	10.84	1.25
00065__11	16	68.93	83.33	85.55	85.64	86.16	0.012143	3.46	19.91	20.72	1.13
00061__11	15	68.93	82.70	85.09	85.26	86.05	0.012421	4.35	15.86	11.19	1.17
00055__11	14	68.92	82.03	84.49	84.43	85.09	0.008603	3.45	19.96	15.05	0.96
00050__11	13	68.92	81.54	83.94	84.13	84.98	0.012800	4.52	15.25	9.85	1.16
00039__11	12	68.91	80.52	82.61	82.86	83.69	0.014382	4.59	15.01	10.86	1.25
00034__11	11	68.91	79.68	82.00	81.96	82.58	0.008342	3.37	20.42	16.32	0.96
00026PB11	8	68.90	78.98	81.67	80.94	81.97	0.002452	2.42	28.44	14.36	0.55
00026PC11	7	68.90	78.98	81.14		81.68	0.005772	3.25	21.18	13.35	0.82
00024BB11	6	68.90	79.03	81.32	80.70	81.61	0.002728	2.41	28.58	16.19	0.58
00024BC11	5	68.90	78.01	80.75		81.08	0.003063	2.53	27.24	14.58	0.59
00023BB11	4	68.90	78.27	80.75	80.10	81.07	0.002892	2.51	27.46	14.86	0.59
00023BC11	3	68.90	77.06	79.61		80.10	0.004762	3.09	22.28	11.74	0.72
00016__11	2	68.89	76.41	78.84	78.93	79.76	0.010686	4.25	16.21	10.02	1.07
00007__11	1	68.76	75.41	77.98	77.97	78.75	0.009034	3.91	17.61	11.23	1

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	100.90	87.08	89.26		89.39	0.001641	1.55	65.19	52.90	0.45
00093BB11	23	100.90	87.02	89.26	88.57	89.38	0.001614	1.54	65.46	52.80	0.44
00093BC11	22	100.90	86.26	89.22		89.33	0.001375	1.47	68.48	51.99	0.41
00088__11	21	100.87	85.67	88.77	89.01	89.91	0.011553	4.72	21.37	12.32	1.14
00082__11	20	100.86	84.99	87.96	88.22	89.14	0.012555	4.81	20.96	12.83	1.20
00077__11	19	100.85	84.57	87.39	87.51	88.38	0.010803	4.40	22.93	14.29	1.11
00073__11	18	100.85	84.26	86.97	87.17	88.05	0.011588	4.61	21.88	13.37	1.15
00069__11	17	100.84	83.76	86.44	86.86	87.78	0.016376	5.12	19.70	13.44	1.35
00065__11	16	100.84	83.33	85.91	85.95	86.57	0.009761	3.60	28.00	23.16	1.05
00061__11	15	100.84	82.70	85.50	85.73	86.71	0.012565	4.88	20.68	12.18	1.19
00055__11	14	100.83	82.03	84.93	84.89	85.61	0.008323	3.66	27.57	18.68	0.96
00050__11	13	100.83	81.54	84.39	84.63	85.70	0.013164	5.07	19.88	10.78	1.19
00039__11	12	100.82	80.52	83.02	83.34	84.36	0.014649	5.13	19.66	12.15	1.29
00034__11	11	98.25	79.68	82.48		83.08	0.006492	3.42	28.72	18.59	0.88
00026PB11	8	97.83	78.98	82.31	81.34	82.64	0.002160	2.58	37.97	15.49	0.53
00026PC11	7	103.10	78.98	81.67		82.34	0.005474	3.62	28.47	14.36	0.82
00024BB11	6	102.34	79.03	81.89	81.13	82.26	0.002604	2.67	38.37	17.83	0.58
00024BC11	5	102.34	78.01	81.35		81.75	0.002998	2.81	36.40	16.27	0.60
00023BB11	4	101.92	78.27	81.35	80.56	81.73	0.002765	2.77	36.86	16.49	0.59
00023BC11	3	101.92	77.06	80.13		80.77	0.005194	3.54	28.79	13.19	0.77
00016__11	2	101.24	76.41	79.34	79.49	80.46	0.010945	4.68	21.64	11.84	1.1
00007__11	1	93.22	75.41	78.66		79.31	0.005788	3.59	25.97	13.36	0.82

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	120.61	87.08	89.54		89.66	0.001331	1.49	80.75	59.10	0.41
00093BB11	23	120.61	87.02	89.54	88.70	89.65	0.001312	1.49	81.08	59.02	0.41
00093BC11	22	120.61	86.26	89.50		89.61	0.001165	1.44	83.76	58.17	0.38
00088__11	21	120.58	85.67	89.02	89.29	90.24	0.012300	4.90	24.61	14.22	1.19
00082__11	20	120.57	84.99	88.18	88.45	89.48	0.012710	5.05	23.86	13.70	1.22
00077__11	19	120.56	84.57	87.61	87.74	88.69	0.010641	4.61	26.13	14.79	1.11
00073__11	18	120.56	84.26	87.18	87.43	88.38	0.012009	4.86	24.83	14.44	1.18
00069__11	17	120.56	83.76	86.63	87.06	88.10	0.017625	5.37	22.45	15.18	1.41
00065__11	16	120.55	83.33	86.11	86.11	86.81	0.008639	3.69	32.65	23.51	1.00
00061__11	15	120.55	82.70	85.71	85.98	87.07	0.012765	5.17	23.31	12.51	1.21
00055__11	14	120.53	82.03	85.18		85.89	0.007683	3.73	32.30	19.92	0.94
00050__11	13	120.53	81.54	84.63	84.91	86.09	0.013301	5.36	22.49	11.10	1.20
00039__11	12	120.52	80.52	83.29	83.60	84.68	0.013407	5.21	23.12	12.91	1.24
00034__11	11	120.49	79.68	82.94		83.45	0.004608	3.16	38.14	21.23	0.75
00026PB11	8	120.49	78.98	82.80	81.61	83.15	0.001922	2.63	45.80	16.25	0.50
00026PC11	7	126.07	78.98	81.97		82.72	0.005399	3.83	32.90	14.90	0.82
00024BB11	6	124.98	79.03	82.23	81.39	82.63	0.002565	2.81	44.47	18.78	0.58
00024BC11	5	124.98	78.01	81.70		82.14	0.002940	2.95	42.32	17.27	0.60
00023BB11	4	124.38	78.27	81.70	80.84	82.13	0.002704	2.90	42.87	17.45	0.59
00023BC11	3	124.12	77.06	80.40		81.15	0.005596	3.83	32.38	13.91	0.80
00016__11	2	117.76	76.41	79.58	79.73	80.75	0.010707	4.81	24.51	12.7	1.1
00007__11	1	102	75.41	79.34		79.76	0.002831	2.89	35.28	13.69	0.57

Risultati della modellistica idraulica (Durata critica Torrente Pesa)



HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	29.20	87.08	88.12		88.25	0.004199	1.59	18.40	29.14	0.64
00093BB11	23	29.20	87.02	88.11	87.89	88.24	0.003990	1.57	18.64	28.94	0.62
00093BC11	22	29.20	86.26	87.79		87.98	0.005354	1.89	15.45	22.17	0.72
00088__11	21	29.20	85.67	87.47	87.46	88.04	0.009847	3.35	8.72	7.42	0.99
00082__11	20	29.20	84.99	86.77	86.83	87.38	0.011803	3.46	8.43	8.10	1.08
00077__11	19	29.20	84.57	86.20	86.19	86.73	0.010046	3.23	9.04	8.38	0.99
00073__11	18	29.20	84.26	85.79	85.80	86.32	0.010197	3.20	9.11	8.90	1.01
00069__11	17	29.20	83.76	85.32	85.44	85.99	0.014235	3.62	8.07	8.39	1.18
00065__11	16	29.20	83.33	84.85	84.86	85.30	0.010386	2.97	9.82	11.36	1.02
00061__11	15	29.20	82.70	84.37	84.45	84.96	0.012650	3.40	8.59	9.06	1.11
00055__11	14	29.20	82.03	83.75		84.12	0.007632	2.70	10.80	10.90	0.87
00050__11	13	29.20	81.54	83.18	83.22	83.78	0.011642	3.43	8.50	7.87	1.05
00039__11	12	29.20	80.52	81.94	82.06	82.58	0.014477	3.52	8.29	9.22	1.19
00034__11	11	29.20	79.68	81.30	81.28	81.71	0.009444	2.82	10.36	11.91	0.96
00026PB11	8	29.20	78.98	80.67	80.25	80.86	0.002856	1.94	15.02	12.38	0.56
00026PC11	7	29.20	78.98	80.34		80.69	0.007151	2.64	11.07	11.71	0.87
00024BB11	6	29.20	79.03	80.43	80.05	80.62	0.003018	1.91	15.32	13.65	0.57
00024BC11	5	29.20	78.01	79.82		80.01	0.003105	1.96	14.88	11.90	0.56
00023BB11	4	29.20	78.27	79.80	79.39	80.00	0.003184	2.00	14.62	12.27	0.58
00023BC11	3	29.19	77.06	78.66		78.94	0.004146	2.33	12.50	9.20	0.64
00016__11	2	29.19	76.41	78.02	77.98	78.56	0.009554	3.27	8.94	7.6	0.96
00007__11	1	5.00	75.41	77.44		77.45	0.000134	0.42	12.04	9.47	0.12

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	31.64	87.08	88.16		88.30	0.004120	1.61	19.66	30.02	0.64
00093BB11	23	31.64	87.02	88.15	87.93	88.28	0.003942	1.59	19.87	29.81	0.62
00093BC11	22	31.64	86.26	87.85		88.03	0.005171	1.89	16.74	23.40	0.71
00088__11	21	31.64	85.67	87.54	87.54	88.14	0.009958	3.43	9.24	7.66	1.00
00082__11	20	31.64	84.99	86.83	86.91	87.47	0.011838	3.54	8.95	8.35	1.09
00077__11	19	31.64	84.57	86.26	86.26	86.82	0.010152	3.32	9.54	8.53	1.00
00073__11	18	31.64	84.26	85.85	85.87	86.40	0.010277	3.29	9.62	9.05	1.02
00069__11	17	31.64	83.76	85.37	85.51	86.08	0.014322	3.72	8.51	8.51	1.19
00065__11	16	31.64	83.33	84.90	84.91	85.37	0.010144	3.03	10.45	11.52	1.01
00061__11	15	31.64	82.70	84.42	84.51	85.04	0.012614	3.48	9.10	9.23	1.12
00055__11	14	31.64	82.03	83.80		84.19	0.007595	2.77	11.42	11.03	0.87
00050__11	13	31.64	81.54	83.24	83.28	83.87	0.011697	3.52	8.98	7.99	1.06
00039__11	12	31.64	80.52	82.00	82.12	82.66	0.014425	3.61	8.76	9.35	1.19
00034__11	11	31.64	79.68	81.36	81.34	81.78	0.009406	2.87	11.01	12.25	0.97
00026PB11	8	31.64	78.98	80.73	80.29	80.94	0.002855	2.00	15.85	12.52	0.57
00026PC11	7	31.64	78.98	80.40		80.77	0.006981	2.69	11.77	11.83	0.86
00024BB11	6	31.64	79.03	80.50	80.10	80.69	0.002992	1.95	16.22	13.84	0.58
00024BC11	5	31.64	78.01	79.89		80.09	0.003112	2.01	15.72	12.10	0.56
00023BB11	4	31.64	78.27	79.87	79.45	80.08	0.003157	2.04	15.50	12.47	0.58
00023BC11	3	31.64	77.06	78.73		79.03	0.004161	2.40	13.21	9.35	0.64
00016__11	2	31.63	76.41	78.09	78.06	78.66	0.009646	3.35	9.45	7.79	0.97
00007__11	1	5.00	75.41	77.55		77.56	0.000107	0.38	13.10	9.83	0.11

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	45.79	87.08	88.37		88.53	0.003857	1.73	26.42	34.38	0.63
00093BB11	23	45.79	87.02	88.36	88.10	88.51	0.003759	1.72	26.56	34.16	0.62
00093BC11	22	45.79	86.26	88.21		88.36	0.003364	1.72	26.57	31.02	0.59
00088__11	21	45.79	85.67	87.88	87.92	88.62	0.010434	3.81	12.03	8.82	1.04
00082__11	20	45.79	84.99	87.14	87.26	87.92	0.011970	3.89	11.77	9.58	1.12
00077__11	19	45.79	84.57	86.56	86.65	87.25	0.011606	3.67	12.47	10.75	1.09
00073__11	18	45.79	84.26	86.14	86.19	86.84	0.010577	3.70	12.37	9.85	1.06
00069__11	17	45.79	83.76	85.65	85.85	86.53	0.014589	4.16	11.00	9.34	1.22
00065__11	16	45.79	83.33	85.20	85.19	85.74	0.008887	3.26	14.05	12.44	0.98
00061__11	15	45.79	82.70	84.71	84.83	85.47	0.012428	3.87	11.85	10.06	1.14
00055__11	14	45.79	82.03	84.09		84.59	0.007599	3.12	14.70	11.71	0.89
00050__11	13	45.79	81.54	83.54	83.65	84.35	0.012194	3.98	11.50	8.71	1.11
00039__11	12	45.79	80.52	82.26	82.43	83.09	0.014302	4.05	11.32	10.00	1.21
00034__11	11	45.79	79.68	81.63	81.62	82.13	0.009401	3.13	14.62	14.33	0.99
00026PB11	8	45.79	78.98	81.11	80.56	81.36	0.002699	2.21	20.77	13.29	0.56
00026PC11	7	45.79	78.98	80.71		81.15	0.006314	2.94	15.56	12.47	0.84
00024BB11	6	45.79	79.03	80.84	80.35	81.08	0.002863	2.16	21.18	14.83	0.58
00024BC11	5	45.79	78.01	80.25		80.51	0.003117	2.25	20.31	13.15	0.58
00023BB11	4	45.79	78.27	80.24	79.73	80.50	0.003033	2.26	20.28	13.48	0.59
00023BC11	3	45.77	77.06	79.13		79.50	0.004204	2.68	17.06	10.11	0.66
00016__11	2	45.76	76.41	78.44	78.44	79.13	0.009741	3.7	12.38	8.83	1
00007__11	1	8.24	75.41	78.08		78.09	0.000109	0.44	18.79	11.56	0.11

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00094__11	24	54.55	87.08	88.50		88.66	0.003609	1.77	30.79	36.85	0.62
00093BB11	23	54.55	87.02	88.49	88.19	88.64	0.003524	1.76	30.95	36.66	0.61
00093BC11	22	54.55	86.26	88.41		88.55	0.002682	1.64	33.18	35.15	0.54
00088__11	21	54.55	85.67	88.06	88.13	88.87	0.010656	4.00	13.64	9.42	1.06
00082__11	20	54.55	84.99	87.31	87.45	88.15	0.012113	4.08	13.37	10.22	1.14
00077__11	19	54.55	84.57	86.72	86.82	87.47	0.011537	3.82	14.30	11.60	1.10
00073__11	18	54.55	84.26	86.30	86.37	87.08	0.010646	3.90	13.99	10.31	1.07
00069__11	17	54.55	83.76	85.82	86.04	86.78	0.014344	4.34	12.57	9.85	1.23
00065__11	16	54.55	83.33	85.35	85.47	85.94	0.011640	3.40	16.03	16.44	1.10
00061__11	15	54.55	82.70	84.86	85.00	85.70	0.012373	4.06	13.44	10.52	1.15
00055__11	14	54.55	82.03	84.25		84.80	0.008161	3.28	16.62	12.94	0.92
00050__11	13	54.55	81.54	83.70	83.84	84.60	0.012435	4.21	12.97	9.15	1.13
00039__11	12	54.55	80.52	82.40	82.60	83.33	0.014328	4.27	12.77	10.35	1.23
00034__11	11	54.55	79.68	81.78	81.77	82.31	0.009231	3.24	16.82	15.44	0.99
00026PB11	8	54.55	78.98	81.33	80.71	81.60	0.002613	2.30	23.68	13.73	0.56
00026PC11	7	54.55	78.98	80.88		81.36	0.006058	3.07	17.76	12.82	0.83
00024BB11	6	54.55	79.03	81.03	80.49	81.29	0.002803	2.27	24.07	15.37	0.58
00024BC11	5	54.55	78.01	80.45		80.74	0.003098	2.37	23.01	13.73	0.58
00023BB11	4	54.55	78.27	80.44	79.88	80.73	0.002969	2.36	23.08	14.04	0.59
00023BC11	3	54.54	77.06	79.34		79.75	0.004330	2.84	19.21	10.66	0.67
00016__11	2	54.51	76.41	78.63	78.64	79.39	0.009713	3.86	14.12	9.38	1.01
00007__11	1	8.19	75.41	78.37		78.38	0.000068	0.37	22.28	12.51	0.09

Fiume Greve (Mulino - Molinaccio)

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
118.32	14.62	1.36	2.44	1.54

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
21.022	0.328	0.170	19.443	0.333	0.205

Sintesi dei risultati del modello idrologico:

Durata critica Fiume Greve

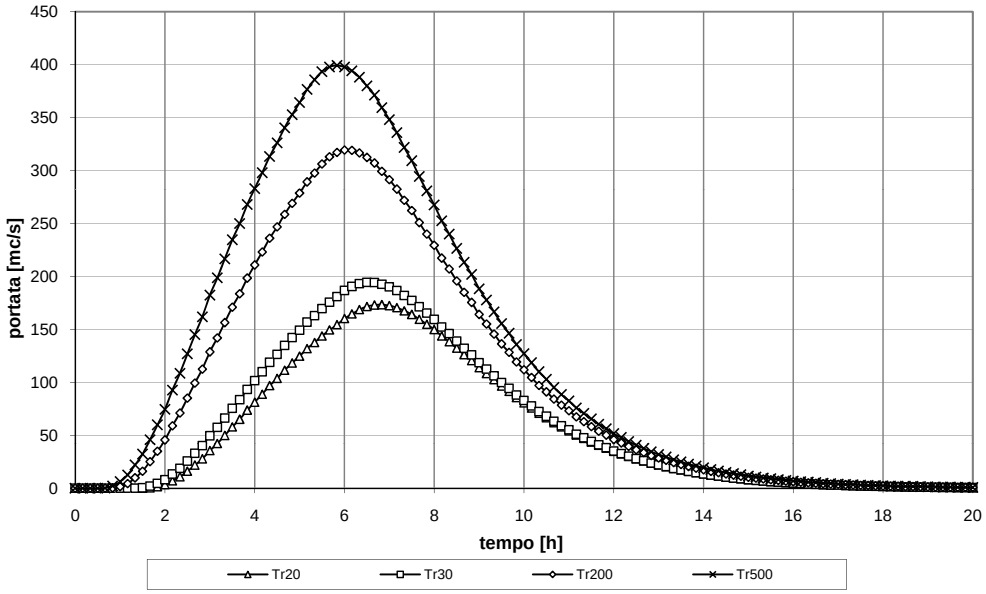
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	6.28	66.26	173.33
30	6.04	71.08	194.44
200	5.56	102.02	319.42
500	5.32	121.31	399.33

Durata critica Fosso di Battaglio

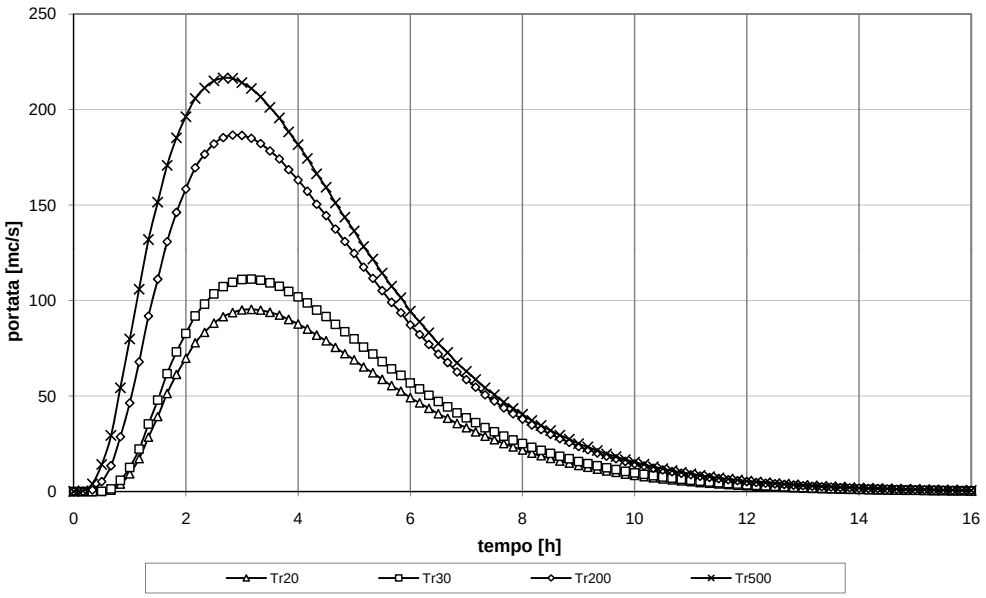
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	1.47	40.85	95.37
30	1.47	44.39	111.26
200	1.23	61.72	186.65
500	0.99	69.28	216.53

Idrogrammi di piena:

Idrogrammi di piena Fiume Greve (Durata Critica Fiume Greve)

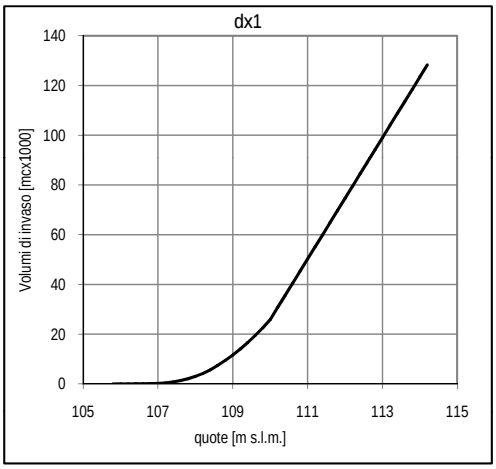


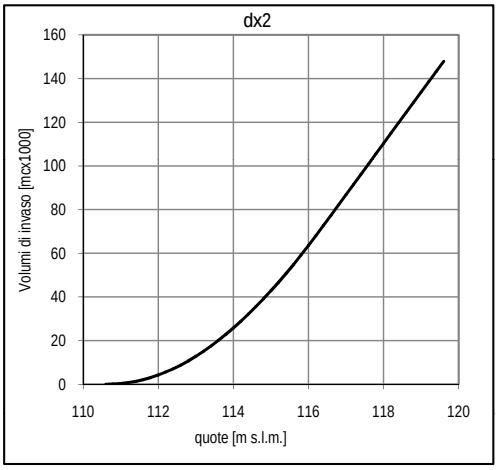
Idrogrammi di piena Fiume Greve (Durata Critica Fosso di Battaglio)

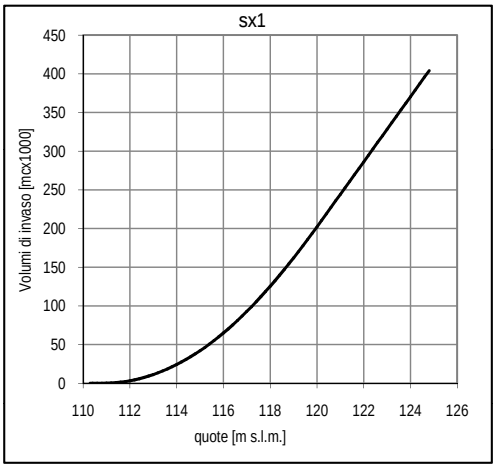


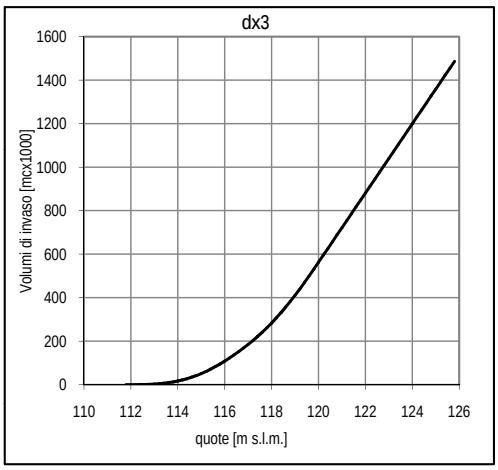
Risultati della modellistica idraulica (Durata Critica Fiume Greve)

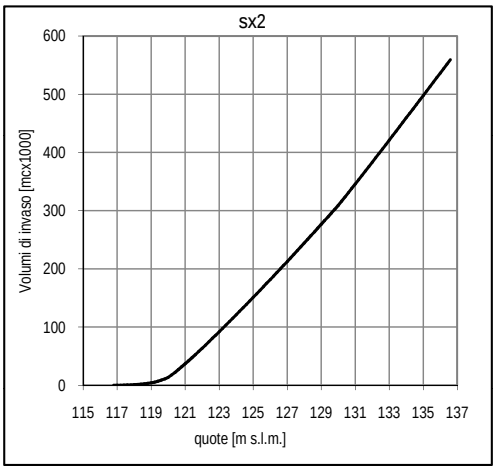
Curve di invaso Aree di Potenziale Esondazione











Risultati della modellistica idraulica (Durata Critica Fiume Greve)

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02097__06	51	173.33	114.86	118.63	118.57	119.70	0.007774	4.59	37.79	16.43	0.97
02092__06	50	173.33	114.82	118.21	118.14	119.22	0.007276	4.44	39.01	17.75	0.96
02087__06	49	173.32	114.54	118.23		118.79	0.003328	3.32	52.18	21.07	0.67
02082__06	48	173.32	114.64	118.28		118.64	0.003012	2.67	64.98	34.85	0.62
02078__06	47	173.31	113.82	118.14		118.49	0.002505	2.65	65.39	29.10	0.56
02071__06	46	173.31	113.23	117.58		118.27	0.005554	3.66	47.30	22.76	0.81
02067__06	45	172.70	113.46	117.19		118.09	0.006096	4.21	41.06	16.37	0.85
02062__06	44	172.70	113.07	116.96		117.79	0.004986	4.04	42.71	15.65	0.78
02055__06	43	172.69	113.42	116.88	116.75	117.55	0.008724	3.60	47.93	37.13	1.01
02050__06	42	172.69	113.19	116.47		117.26	0.006864	3.94	43.80	24.22	0.94
02045__06	41	172.69	111.06	116.11		116.90	0.005992	3.93	43.97	19.43	0.83
02040__06	40	172.69	112.57	116.02		116.52	0.003458	3.14	55.05	25.29	0.68
02033__06	39	172.68	112.71	115.81		116.29	0.003724	3.08	56.09	28.43	0.70
02029__06	38	172.68	112.12	115.79		116.07	0.004206	2.35	73.59	63.42	0.70
02024__06	37	172.68	111.10	115.26		115.95	0.007323	3.67	47.03	29.60	0.93
02020__06	36	172.68	110.91	115.19		115.67	0.004223	3.06	56.41	29.63	0.71
02015__06	35	172.68	111.44	114.86		115.32	0.006653	2.99	57.82	48.53	0.87
02010__06	34	172.67	111.21	114.56		114.98	0.006366	2.86	60.28	52.41	0.85
02005__06	33	172.67	110.58	114.30		114.67	0.004838	2.68	64.50	49.63	0.75
02000__06	32	172.66	110.37	114.04		114.50	0.004974	2.99	57.78	39.14	0.79
01995__06	31	172.66	110.23	113.72		114.24	0.005904	3.19	54.14	37.65	0.85
01990__06	30	172.65	109.93	113.70		114.02	0.002381	2.54	68.09	33.33	0.57
01985__06	29	172.65	110.37	113.38		113.88	0.004359	3.13	55.24	30.69	0.74
01980__06	28	172.65	109.94	112.98		113.65	0.004969	3.63	47.56	23.31	0.81
01976__06	27	172.62	109.46	112.71		113.45	0.004840	3.81	45.34	19.61	0.80
01970__06	26	172.63	108.92	112.90		113.22	0.002644	2.50	69.02	36.74	0.58
01966__06	25	172.53	109.02	112.32		113.13	0.005355	4.00	43.17	18.70	0.84
01961__06	24	172.20	108.63	112.57		112.91	0.002830	2.59	66.58	35.07	0.60
01956__06	23	171.03	108.58	112.60		112.79	0.001244	1.93	88.60	40.04	0.41
01951__06	22	160.89	108.45	112.52		112.75	0.001302	2.12	75.97	29.42	0.42
01945__06	21	160.93	108.57	112.51		112.68	0.001302	1.80	89.51	46.76	0.41
01942__06	20	172.45	108.50	111.93		112.56	0.003822	3.53	48.91	19.68	0.71
01937__06	19	172.45	108.24	112.08		112.39	0.001840	2.48	69.47	28.32	0.51
01932__06	18	161.00	108.24	112.07		112.34	0.001629	2.33	69.08	28.27	0.48
01927__06	17	153.77	108.27	112.06		112.29	0.001397	2.12	72.47	29.87	0.43
01922__06	16	151.37	108.14	112.07		112.24	0.001010	1.79	84.52	35.92	0.37
01918BB06	15	172.47	109.19	111.70	111.08	112.07	0.003734	2.69	64.01	40.03	0.68
01918BC06	14	172.47	107.50	110.68	109.77	111.05	0.002428	2.69	64.07	28.83	0.58
01918BD06	13	172.45	106.51	110.62		110.89	0.001539	2.31	74.61	28.58	0.46
01912__06	12	164.63	105.59	110.64		110.87	0.001312	2.14	77.03	28.92	0.42
01907PB06	11	162.14	105.69	110.64	108.51	110.83	0.000832	1.92	84.47	26.82	0.35
01907PC06	10	162.06	106.06	110.05		110.39	0.001806	2.61	62.13	21.44	0.49
01900__06	9	162.00	105.30	109.87		110.25	0.002165	2.74	59.16	22.07	0.53
01894__06	8	162.00	105.18	109.88		110.13	0.002841	2.22	72.85	48.64	0.58
01890__06	7	161.98	105.15	109.74		110.01	0.002129	2.32	69.85	34.07	0.52
01885__06	6	160.19	105.25	109.67		109.93	0.001740	2.26	70.78	31.04	0.48
01879__06	5	155.71	104.86	109.56		109.84	0.002369	2.34	66.45	34.52	0.54
01873__06	4	139.89	104.94	109.53		109.79	0.001450	2.25	62.15	22.31	0.43
01870__06	3	136.08	105.32	109.53		109.76	0.001322	2.11	64.64	24.87	0.42
01865__06	2	148.80	104.81	109.31		109.64	0.002031	2.54	58.48	23.10	0.51
01859__06	1	172.20	104.85	109.16	108.14	109.40	0.001546	2.17	79.28	33.86	0.45

HEC-RAS Risultati TR20					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	109.53	105.80	14.38	14300	18420
dx2	112.06	110.60	0.03	6860	4660
sx1	112.52	110.30	1.69	8360	6830
dx3	112.86	111.80	0.60	5710	2200
sx2	116.80	116.80	0.00	0	0

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00154 valida per tutti i tempi di ritorno.

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02097__06	51	194.43	114.86	118.81	118.78	119.97	0.007922	4.76	40.81	16.99	0.98
02092__06	50	194.43	114.82	118.39	118.34	119.47	0.007345	4.60	42.25	18.34	0.97
02087__06	49	194.39	114.54	118.39		119.01	0.003507	3.50	55.53	21.48	0.70
02082__06	48	194.40	114.64	118.49		118.86	0.002715	2.68	72.43	35.52	0.60
02078__06	47	194.40	113.82	118.35		118.72	0.003131	2.68	72.50	38.26	0.62
02071__06	46	194.39	113.23	117.77		118.49	0.005861	3.76	51.77	25.23	0.84
02067__06	45	191.53	113.46	117.36		118.33	0.006267	4.37	43.82	16.79	0.86
02062__06	44	191.51	113.07	117.07		118.01	0.005467	4.30	44.52	15.89	0.82
02055__06	43	191.51	113.42	117.10	117.15	117.65	0.009702	3.29	58.28	56.81	1.04
02050__06	42	191.51	113.19	116.65	116.53	117.45	0.007088	3.95	48.48	27.48	0.95
02045__06	41	191.51	111.06	116.23		117.10	0.006284	4.13	46.34	19.55	0.86
02040__06	40	191.50	112.57	116.18		116.71	0.003847	3.23	59.28	28.40	0.71
02033__06	39	191.50	112.71	115.92		116.44	0.004864	3.22	59.54	34.83	0.79
02029__06	38	191.50	112.12	115.92		116.20	0.003710	2.34	81.81	64.39	0.66
02024__06	37	191.50	111.10	115.37		116.11	0.007287	3.80	50.42	30.03	0.94
02020__06	36	191.50	110.91	115.28		115.82	0.004527	3.25	58.97	29.82	0.74
02015__06	35	191.50	111.44	114.95		115.44	0.006718	3.08	62.17	50.20	0.88
02010__06	34	191.50	111.21	114.67		115.09	0.006163	2.90	66.06	55.10	0.84
02005__06	33	191.49	110.58	114.45		114.81	0.004429	2.66	72.01	52.44	0.72
02000__06	32	191.49	110.37	114.18		114.64	0.004907	3.02	63.49	42.04	0.78
01995__06	31	191.49	110.23	113.89		114.40	0.005513	3.16	60.53	40.54	0.83
01990__06	30	191.49	109.93	113.85		114.20	0.002359	2.61	73.23	33.95	0.57
01985__06	29	191.48	110.37	113.53		114.05	0.004173	3.20	59.87	30.93	0.73
01980__06	28	190.35	109.94	113.14		113.84	0.005032	3.71	51.35	24.65	0.82
01976__06	27	190.32	109.46	112.82		113.64	0.005159	4.00	47.55	20.00	0.83
01970__06	26	190.06	108.92	113.05		113.38	0.002502	2.54	74.86	37.24	0.57
01966__06	25	188.37	109.02	112.47		113.32	0.005345	4.10	45.91	19.01	0.84
01961__06	24	189.03	108.63	112.74		113.09	0.002578	2.60	72.79	35.34	0.58
01956__06	23	189.45	108.58	112.77		112.97	0.001210	1.98	95.46	40.33	0.41
01951__06	22	174.26	108.45	112.71		112.94	0.001227	2.13	81.62	29.66	0.41
01945__06	21	174.86	108.57	112.72		112.87	0.001348	1.75	99.79	55.74	0.42
01942__06	20	191.33	108.50	112.08		112.77	0.004719	3.68	51.96	23.23	0.79
01937__06	19	191.04	108.24	112.23		112.57	0.001903	2.59	73.87	28.93	0.52
01932__06	18	177.90	108.24	112.23		112.52	0.001661	2.41	73.70	28.90	0.48
01927__06	17	171.04	108.27	112.22		112.47	0.001434	2.21	77.24	30.32	0.44
01922__06	16	167.53	108.14	112.24		112.42	0.001001	1.85	90.64	36.32	0.37
01918BB06	15	191.33	109.19	111.84	111.20	112.23	0.003550	2.76	69.34	40.03	0.67
01918BC06	14	191.33	107.50	110.82	109.93	111.22	0.002539	2.81	68.21	29.73	0.59
01918BD06	13	191.32	106.51	110.75		111.05	0.001658	2.45	78.16	28.96	0.48
01912__06	12	178.43	105.59	110.79		111.04	0.001373	2.18	81.72	30.80	0.43
01907PB06	11	173.25	105.69	110.81	108.61	111.00	0.000822	1.95	89.06	27.46	0.34
01907PC06	10	173.15	106.06	110.18		110.54	0.001822	2.66	65.09	21.97	0.49
01900__06	9	173.05	105.30	110.01		110.40	0.002253	2.78	62.30	23.58	0.55
01894__06	8	173.10	105.18	110.05		110.28	0.002875	2.10	82.61	61.68	0.58
01890__06	7	172.42	105.15	109.88		110.15	0.001953	2.31	74.64	34.07	0.50
01885__06	6	165.05	105.25	109.86		110.09	0.001466	2.15	76.78	31.88	0.44
01879__06	5	153.31	104.86	109.83		110.04	0.001533	2.02	75.99	35.25	0.44
01873__06	4	136.59	104.94	109.81		110.01	0.001058	2.00	68.40	23.03	0.37
01870__06	3	134.57	105.32	109.80		109.98	0.000971	1.88	71.49	25.63	0.36
01865__06	2	157.67	104.81	109.54		109.85	0.001749	2.46	63.97	23.49	0.48
01859__06	1	191.00	104.85	109.33	108.25	109.59	0.001543	2.25	84.92	34.22	0.46

HEC-RAS Risultati TR30						
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	109.8	105.8	38.47	16620	22590
dx2	112.21	110.6	48.56	7480	5700
sx1	112.71	110.3	36.53	9040	8430
dx3	113.9	111.8	2.87	20320	14900
sx2	116.8	116.80	0.00	0	0

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00154 valida per tutti i tempi di ritorno.

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02097__06	51	319.41	114.86	119.70	120.13	121.25	0.009702	5.52	57.85	23.05	1.11
02092__06	50	319.41	114.82	119.23	119.34	120.73	0.008240	5.42	58.97	21.87	1.05
02087__06	49	319.39	114.54	118.98		120.07	0.005388	4.63	68.95	24.07	0.87
02082__06	48	319.37	114.64	119.22		119.75	0.002800	3.21	99.39	37.74	0.63
02078__06	47	319.37	113.82	119.13		119.61	0.002968	3.05	104.62	42.94	0.62
02071__06	46	312.71	113.23	118.40	118.27	119.46	0.007126	4.57	68.46	29.04	0.95
02067__06	45	284.92	113.46	118.14		119.37	0.006587	4.91	58.07	19.55	0.91
02062__06	44	284.92	113.07	117.73	117.52	119.07	0.007375	5.13	55.58	19.30	0.96
02055__06	43	284.91	113.42	117.75		118.18	0.004341	2.89	98.67	63.74	0.74
02050__06	42	284.91	113.19	117.31	117.26	118.08	0.007214	3.89	73.28	43.57	0.96
02045__06	41	284.90	111.06	116.75	116.66	118.04	0.007580	5.02	56.71	20.04	0.95
02040__06	40	284.90	112.57	116.64		117.38	0.005689	3.80	74.88	38.08	0.87
02033__06	39	284.90	112.71	116.41		117.02	0.005914	3.46	82.33	50.48	0.86
02029__06	38	284.88	112.12	116.45		116.75	0.002736	2.42	117.54	69.69	0.60
02024__06	37	284.91	111.10	115.86	115.81	116.83	0.007347	4.35	65.44	31.88	0.97
02020__06	36	284.34	110.91	115.65		116.49	0.005854	4.05	70.15	30.66	0.86
02015__06	35	286.46	111.44	115.30		115.95	0.006801	3.59	79.83	51.60	0.92
02010__06	34	285.12	111.21	115.17		115.61	0.004799	2.95	96.53	64.95	0.77
02005__06	33	284.82	110.58	115.02		115.41	0.003216	2.78	102.63	54.94	0.65
02000__06	32	284.77	110.37	114.73		115.26	0.004332	3.23	88.19	47.99	0.76
01995__06	31	284.76	110.23	114.56		115.05	0.003996	3.09	92.22	50.25	0.73
01990__06	30	286.40	109.93	114.39		114.88	0.002629	3.11	92.17	35.34	0.61
01985__06	29	281.55	110.37	114.10		114.75	0.004377	3.58	78.68	35.21	0.76
01980__06	28	259.83	109.94	114.02		114.57	0.003926	3.26	79.71	38.24	0.72
01976__06	27	251.51	109.46	113.85		114.51	0.003111	3.61	69.68	22.84	0.66
01970__06	26	266.39	108.92	114.01		114.30	0.001459	2.38	111.77	39.92	0.45
01966__06	25	222.72	109.02	113.90		114.36	0.001848	2.98	74.70	21.01	0.50
01961__06	24	256.94	108.63	113.94		114.19	0.001125	2.21	116.07	37.15	0.40
01956__06	23	267.86	108.58	113.95		114.12	0.000677	1.86	144.06	42.02	0.32
01951__06	22	235.60	108.45	113.94		114.14	0.000725	1.98	118.87	31.22	0.32
01945__06	21	261.92	108.57	113.91		114.03	0.000575	1.53	170.75	59.43	0.29
01942__06	20	297.59	108.50	113.49		113.93	0.002714	2.93	101.61	43.24	0.61
01937__06	19	268.43	108.24	113.56		113.77	0.001176	2.06	130.26	49.38	0.40
01932__06	18	219.89	108.24	113.54		113.71	0.000744	1.85	118.92	36.67	0.33
01927__06	17	208.88	108.27	113.53		113.68	0.000655	1.70	123.08	39.08	0.31
01922__06	16	243.28	108.14	113.45		113.61	0.000634	1.77	137.78	40.51	0.31
01918BB06	15	317.50	109.19	112.59	111.97	113.11	0.003067	3.19	99.56	40.03	0.65
01918BC06	14	317.50	107.50	111.75	110.78	112.29	0.002519	3.25	97.84	33.24	0.60
01918BD06	13	317.06	106.51	111.48		111.98	0.002674	3.14	101.14	37.12	0.61
01912__06	12	256.99	105.59	111.80		112.03	0.001140	2.15	119.75	39.99	0.40
01907PB06	11	200.43	105.69	111.97	108.90	112.09	0.000500	1.58	126.63	36.32	0.27
01907PC06	10	200.03	106.06	111.33		111.56	0.001053	2.14	93.56	29.69	0.38
01900__06	9	200.01	105.30	111.28		111.48	0.001179	1.97	101.34	40.84	0.40
01894__06	8	183.34	105.18	111.38		111.44	0.000335	1.09	168.89	65.25	0.22
01890__06	7	114.89	105.15	111.33		111.37	0.000176	0.93	123.97	34.07	0.16
01885__06	6	91.91	105.25	111.27		111.30	0.000108	0.75	122.41	32.24	0.12
01879__06	5	82.16	104.86	111.28		111.30	0.000087	0.65	126.97	35.25	0.11
01873__06	4	71.92	104.94	111.27		111.30	0.000090	0.69	104.92	26.83	0.11
01870__06	3	70.13	105.32	111.28		111.30	0.000073	0.63	111.42	28.26	0.10
01865__06	2	215.43	104.81	110.83		111.08	0.001078	2.23	96.43	27.84	0.38
01859__06	1	316.78	104.85	110.29	108.88	110.66	0.001543	2.66	118.94	36.31	0.47

HEC-RAS Risultati TR200					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	111.27	105.80	4.85	24370	56830
dx2	113.52	110.60	128.64	12850	19040
sx1	113.93	110.30	187.02	14920	23220
dx3	115.95	111.80	1.52	64960	104900
sx2	116.92	116.80	0.01	0	0

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00154 valida per tutti i tempi di ritorno.

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02097__06	51	399.33	114.86	120.18	120.46	121.70	0.011601	5.47	73.04	34.74	1.20
02092__06	50	399.11	114.82	119.68	119.82	121.38	0.008236	5.78	69.03	23.08	1.07
02087__06	49	399.13	114.54	119.34	119.18	120.67	0.006150	5.11	78.07	25.93	0.94
02082__06	48	399.12	114.64	119.53		120.19	0.003132	3.60	110.92	38.35	0.68
02078__06	47	398.94	113.82	119.43		120.02	0.003192	3.39	117.56	42.94	0.65
02071__06	46	381.54	113.23	118.72	118.66	119.94	0.007249	4.90	77.90	30.13	0.97
02067__06	45	336.24	113.46	118.48		119.85	0.006804	5.19	64.78	20.55	0.93
02062__06	44	333.34	113.07	118.09	118.06	119.51	0.007589	5.29	62.98	21.50	0.99
02055__06	43	337.62	113.42	118.07		118.48	0.003318	2.83	119.32	64.83	0.67
02050__06	42	336.73	113.19	117.59		118.38	0.006148	3.93	85.64	44.23	0.90
02045__06	41	336.67	111.06	117.06	117.02	118.52	0.007972	5.35	62.95	20.91	0.98
02040__06	40	336.56	112.57	116.83		117.69	0.005935	4.09	82.26	38.52	0.89
02033__06	39	336.46	112.71	116.60		117.28	0.005881	3.66	92.02	51.71	0.87
02029__06	38	336.39	112.12	116.70		117.01	0.002675	2.49	134.92	75.30	0.59
02024__06	37	336.33	111.10	116.10	116.07	117.18	0.007313	4.59	73.24	32.80	0.98
02020__06	36	336.33	110.91	115.85		116.83	0.006579	4.40	76.52	32.28	0.91
02015__06	35	336.31	111.44	115.48		116.20	0.006592	3.77	89.27	52.33	0.92
02010__06	34	336.28	111.21	115.45		115.88	0.003858	2.92	115.03	66.68	0.71
02005__06	33	336.27	110.58	115.31		115.72	0.002841	2.83	118.86	56.21	0.62
02000__06	32	335.76	110.37	115.04		115.57	0.003780	3.24	103.49	50.34	0.72
01995__06	31	336.39	110.23	114.94		115.40	0.003090	3.03	110.98	50.83	0.65
01990__06	30	333.36	109.93	114.77		115.27	0.002364	3.16	105.44	35.96	0.59
01985__06	29	317.13	110.37	114.70		115.21	0.002651	3.17	100.18	36.39	0.61
01980__06	28	284.72	109.94	114.72		115.08	0.001898	2.68	106.13	38.24	0.51
01976__06	27	266.99	109.46	114.65		115.09	0.002163	2.94	90.88	30.85	0.55
01970__06	26	301.60	108.92	114.70		114.94	0.000945	2.15	139.95	41.30	0.37
01966__06	25	242.26	109.02	114.66		115.02	0.001290	2.64	91.61	23.08	0.42
01961__06	24	286.75	108.63	114.68		114.88	0.000731	1.99	143.86	38.26	0.33
01956__06	23	300.65	108.58	114.68		114.83	0.000469	1.72	175.23	43.01	0.27
01951__06	22	279.36	108.45	114.68		114.83	0.000491	1.74	170.25	42.22	0.27
01945__06	21	304.07	108.57	114.64		114.74	0.000377	1.42	213.94	59.43	0.24
01942__06	20	323.10	108.50	114.44		114.70	0.001093	2.27	142.50	43.24	0.40
01937__06	19	193.89	108.24	114.52		114.56	0.000165	0.93	217.70	61.17	0.16
01932__06	18	117.10	108.24	114.39		114.42	0.000102	0.78	150.19	36.67	0.12
01927__06	17	110.94	108.27	114.39		114.41	0.000079	0.68	170.42	43.09	0.11
01922__06	16	267.60	108.14	114.15		114.28	0.000467	1.61	165.94	40.51	0.25
01918BB06	15	385.24	109.19	112.94	112.22	113.53	0.002993	3.40	113.33	40.03	0.64
01918BC06	14	413.38	107.50	112.36	111.27	112.98	0.002390	3.50	117.98	33.24	0.59
01918BD06	13	403.23	106.51	111.83		112.45	0.003248	3.51	114.81	41.09	0.67
01912__06	12	334.15	105.59	112.23		112.53	0.001265	2.44	136.90	39.99	0.42
01907PB06	11	237.22	105.69	112.52	109.19	112.65	0.000445	1.62	146.60	36.32	0.26
01907PC06	10	237.22	106.06	111.94		112.16	0.000965	2.07	114.54	35.45	0.37
01900__06	9	236.72	105.30	111.88		112.06	0.000825	1.88	126.13	40.84	0.34
01894__06	8	183.66	105.18	112.03		112.07	0.000163	0.87	211.47	65.25	0.15
01890__06	7	51.48	105.15	111.97		111.97	0.000021	0.35	145.84	34.07	0.05
01885__06	6	14.05	105.25	111.83		111.84	0.000002	0.10	140.51	32.24	0.02
01879__06	5	16.18	104.86	111.83		111.83	0.000001	0.08	218.30	56.24	0.01
01873__06	4	27.94	104.94	111.83		111.83	0.000005	0.17	180.47	46.08	0.03
01870__06	3	61.26	105.32	111.82		111.83	0.000022	0.37	176.37	42.72	0.06
01865__06	2	269.59	104.81	111.51		111.64	0.000540	1.69	169.59	46.22	0.27
01859__06	1	401.67	104.85	110.86	109.26	111.28	0.001541	2.88	139.70	37.53	0.48

HEC-RAS Risultati TR500					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	111.82	105.80	420.29	24400	70100
dx2	114.38	110.60	105.11	16420	31850
sx1	114.67	110.30	230.38	18690	35660
dx3	116.12	111.80	0.48	69440	116720
sx2	118.67	116.80	0.83	4000	3000

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00154 valida per tutti i tempi di ritorno.

Risultati della modellistica idraulica (Durata Critica Fosso di Battaglio)

HEC-RAS Risultati (Valori utilizzati come condizione di valle per il Fosso di Battaglio)			
Sezione	River Sta	Tr [anni]	Max W.S. Elev [m slm]
01894__06	8	20	108.93
01894__06	8	30	109.14
01894__06	8	200	109.98
01894__06	8	500	110.33

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.00154 valida per tutti i tempi di ritorno.

Fosso di Battaglio

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
4.40	16.50	0.68	2.23	0.31

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
21.652	0.311	0.180	20.874	0.302	0.208

Sintesi dei risultati del modello idrologico:

Durata critica Fiume Battaglio

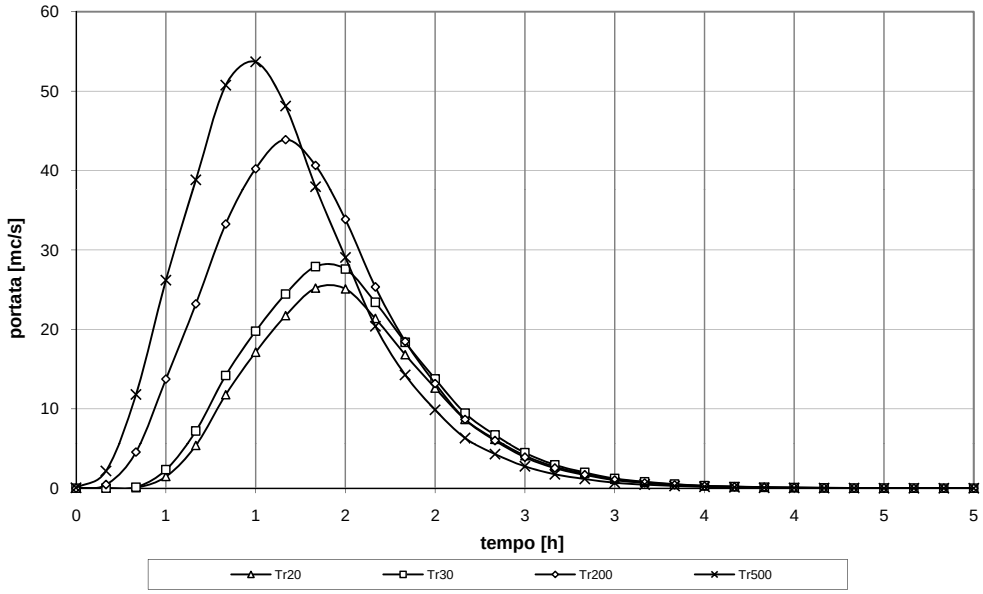
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	1.47	41.85	25.91
30	1.47	45.02	28.56
200	1.23	59.92	44.47
500	0.99	66.05	54.42

Durata critica Fiume Greve

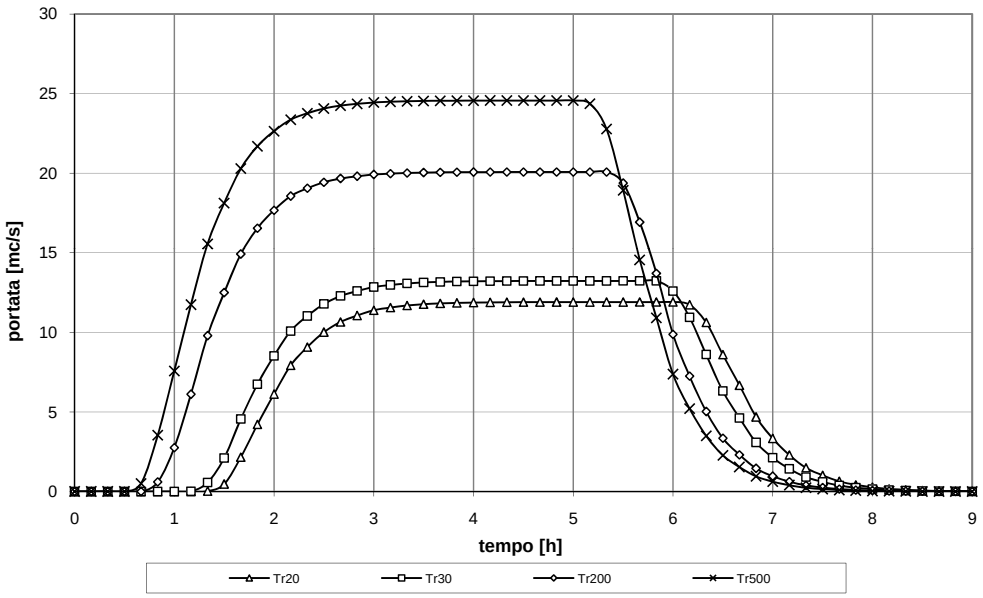
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	6.28	65.74	11.91
30	6.04	69.87	13.24
200	5.56	95.81	20.08
500	5.32	111.45	24.57

Idrogrammi di piena:

Idrogrammi di piena Fosso di Battaglio (Durata Critica Fosso di Battaglio)



Idrogrammi di piena Fosso di Battaglio (Durata Critica Fiume Greve)

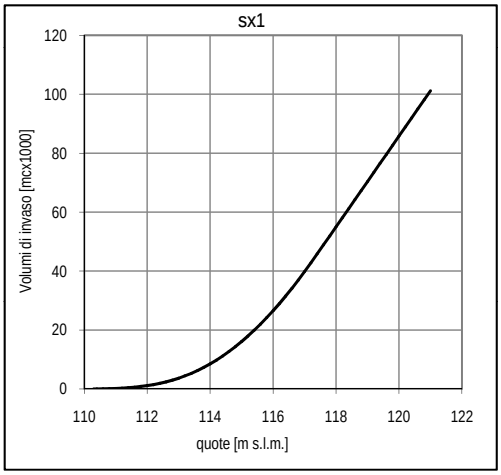


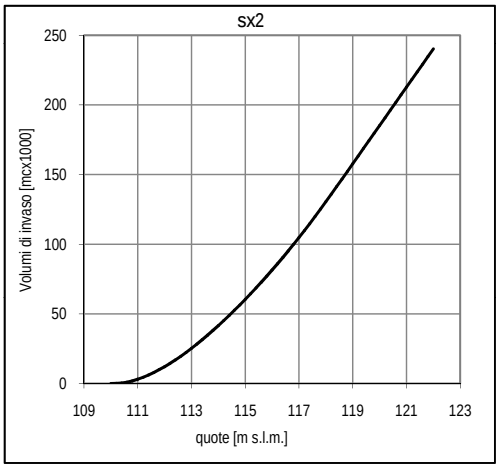
Risultati della modellistica idraulica (Durata Critica Fosso di Battaglio)

Condizioni al contorno di valle

Condizione di valle per il Fosso di Battaglio (Durata Critica Fosso di Battaglio): Max W.S Elev sezione 01894__06 del Fiume Greve	
Tr [anni]	W.S. Elev [m slm]
20	108.93
30	109.14
200	109.98
500	110.33

Curve di invaso Aree di Potenziale Esondazione





HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	25.20	115.61	116.63	116.90	117.49	0.034808	4.10	6.14	11.11	1.76
00024__11	5	25.19	114.16	115.69	115.74	116.28	0.011726	3.40	7.41	7.08	1.06
00018PB11	4	23.38	112.52	115.76	114.35	115.87	0.001323	1.51	15.52	7.63	0.34
00018PC11	3	23.38	112.52	113.97	114.35	115.20	0.028697	4.91	4.76	4.34	1.50
00005__11	2	23.38	109.14	110.28	110.56	111.22	0.029305	4.29	5.45	7.83	1.64
00002__11	1	0.16	107.62	108.93	107.79	108.93	0.000002	0.04	4.36	5.81	0.01

HEC-RAS Risultati TR20					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	111.90	110.30	0.69	1390	980
dx1	110.71	110.00	0.69	5000	1000

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	27.90	115.61	116.67	116.96	117.57	0.033933	4.20	6.65	11.37	1.75
00024__11	5	27.89	114.16	115.76	115.82	116.39	0.011994	3.54	7.89	7.20	1.08
00018PB11	4	24.98	112.52	115.84	114.41	115.96	0.001352	1.55	16.14	7.63	0.34
00018PC11	3	24.98	112.52	114.02	114.41	115.30	0.028891	5.00	4.99	4.42	1.50
00005__11	2	24.97	109.14	110.31	110.61	111.29	0.029379	4.38	5.71	7.97	1.65
00002__11	1	0.15	107.62	109.14	107.79	109.14	0.000001	0.03	5.66	6.54	0.01

HEC-RAS Risultati TR30					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	112.42	110.3	1.17	2490	1930
dx1	110.8	110.00	0.66	6000	2000

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	43.90	115.61	116.91	117.25	118.00	0.030609	4.64	9.45	12.65	1.71
00024__11	5	43.83	114.16	116.09	116.25	117.00	0.013505	4.21	10.41	7.80	1.16
00018PB11	4	33.63	112.52	116.25	114.75	116.40	0.001491	1.75	19.25	7.63	0.35
00018PC11	3	33.63	112.52	114.28	114.75	115.79	0.029800	5.45	6.17	4.82	1.54
00005__11	2	33.61	109.14	110.52	110.83	111.57	0.024404	4.53	7.42	8.33	1.53
00002__11	1	0.15	107.62	109.98	107.79	109.98	0.000000	0.01	13.96	14.61	0.00

HEC-RAS Risultati TR200					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	114.34	110.30	4.61	7030	10760
dx1	111.07	110.00	0.56	7000	4000

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	53.68	115.61	117.04	117.41	118.22	0.028608	4.81	11.16	13.38	1.68
00024__11	5	53.65	114.16	116.28	116.48	117.32	0.014007	4.52	11.87	8.13	1.19
00018PB11	4	38.49	112.52	116.47	114.92	116.65	0.001542	1.84	20.97	7.63	0.35
00018PC11	3	38.49	112.52	114.40	114.93	116.04	0.030251	5.67	6.78	5.02	1.56
00005__11	2	38.47	109.14	110.67	110.94	111.68	0.020380	4.46	8.63	8.53	1.41
00002__11	1	0.15	107.62	110.33	107.79	110.33	0.000000	0.01	19.15	15.05	0.00

HEC-RAS Risultati TR500					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	115.06	110.30	6.96	9410	16610
dx1	111.17	110.00	0.68	7000	4000

Risultati della modellistica idraulica (Durata Critica Fiume Greve)

Condizioni al contorno di valle

Condizione di valle per il Fosso di Battaglio (Durata Critica Fiume Greve): Max W.S Elev sezione 01894__06 del Fiume Greve	
Tr [anni]	W.S. Elev [m slm]
20	109.88
30	110.05
200	111.38
500	111.99

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	11.39	115.61	116.33	116.53	116.94	0.036587	3.45	3.30	8.06	1.72
00024__11	5	11.39	114.16	115.05	115.22	115.67	0.026345	3.49	3.26	5.83	1.49
00018PB11	4	11.38	112.52	114.32	113.72	114.48	0.003128	1.79	6.37	4.89	0.50
00018PC11	3	11.38	112.52	113.50	113.72	114.30	0.027439	3.95	2.88	3.77	1.44
00005__11	2	11.36	109.14	110.04	110.17	110.53	0.021402	3.11	3.66	6.79	1.35
00002__11	1	0.15	107.62	109.88	107.79	109.88	0.000000	0.01	12.55	13.40	0.00

HEC-RAS Risultati TR20					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	110.30	110.30	0.00	0	0
dx1	110.00	110.00	0.00	0	0

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	12.85	115.61	116.37	116.58	117.01	0.036589	3.55	3.62	8.48	1.73
00024__11	5	12.85	114.16	115.10	115.29	115.76	0.025105	3.57	3.59	5.94	1.47
00018PB11	4	12.84	112.52	114.46	113.81	114.63	0.002991	1.81	7.09	5.12	0.49
00018PC11	3	12.84	112.52	113.57	113.81	114.43	0.027632	4.11	3.13	3.83	1.45
00005__11	2	12.73	109.14	110.14	110.22	110.57	0.016242	2.92	4.37	7.22	1.20
00002__11	1	0.15	107.62	110.05	107.79	110.05	0.000000	0.01	14.98	14.70	0.00

HEC-RAS Risultati TR30					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	110.30	110.30	0.00	0	0
dx1	110.00	110.00	0.00	0	0

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	19.92	115.61	116.53	116.78	117.31	0.035778	3.90	5.11	10.18	1.76
00024__11	5	19.92	114.16	115.53	115.56	116.04	0.011501	3.14	6.33	6.80	1.04
00018PB11	4	19.65	112.52	115.58	114.18	115.68	0.001223	1.39	14.13	7.63	0.33
00018PC11	3	19.65	112.52	113.84	114.18	114.95	0.028233	4.67	4.21	4.14	1.48
00005__11	2	1.02	109.14	111.38		111.38	0.000003	0.07	15.10	9.39	0.02
00002__11	1	0.39	107.62	111.38	107.88	111.38	0.000000	0.01	35.14	15.25	0.00

HEC-RAS Risultati TR200					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	110.88	110.30	0.06	380	110
dx1	111.38	110.00	3.19	8000	6000

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00027__11	6	24.45	115.61	116.62	116.88	117.46	0.034982	4.07	6.00	11.02	1.76
00024__11	5	24.45	114.16	115.67	115.71	116.25	0.011657	3.36	7.27	7.04	1.06
00018PB11	4	22.91	112.52	115.74	114.33	115.85	0.001314	1.49	15.34	7.63	0.34
00018PC11	3	22.91	112.52	113.96	114.33	115.17	0.028589	4.88	4.70	4.32	1.49
00005__11	2	1.36	109.14	111.99		111.99	0.000002	0.07	20.82	9.39	0.01
00002__11	1	0.12	107.62	111.99	107.77	111.99	0.000000	0.00	51.30	18.67	0.00

HEC-RAS Risultati TR500					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
sx1	112.45	110.30	0.57	2490	2010
dx1	111.99	110.00	4.64	11000	12000

Torrente Pesa (Olmo - Molino della Gora)

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
178.96	14.49	2.52	3.34	2.17

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
21.687	0.357	0.160	19.119	0.354	0.200

Sintesi dei risultati del modello idrologico:

Durata critica Torrente Pesa

TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	9.17	76.28	136.99
30	9.17	82.44	158.01
200	9.17	111.68	256.16
500	9.17	129.31	314.76

Durata critica Borro di Argiano

TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	0.57	28.53	16.88
30	0.57	30.58	23.28
200	0.57	41.42	57.15
500	0.57	47.96	77.58

Durata critica Borro di Canciulle

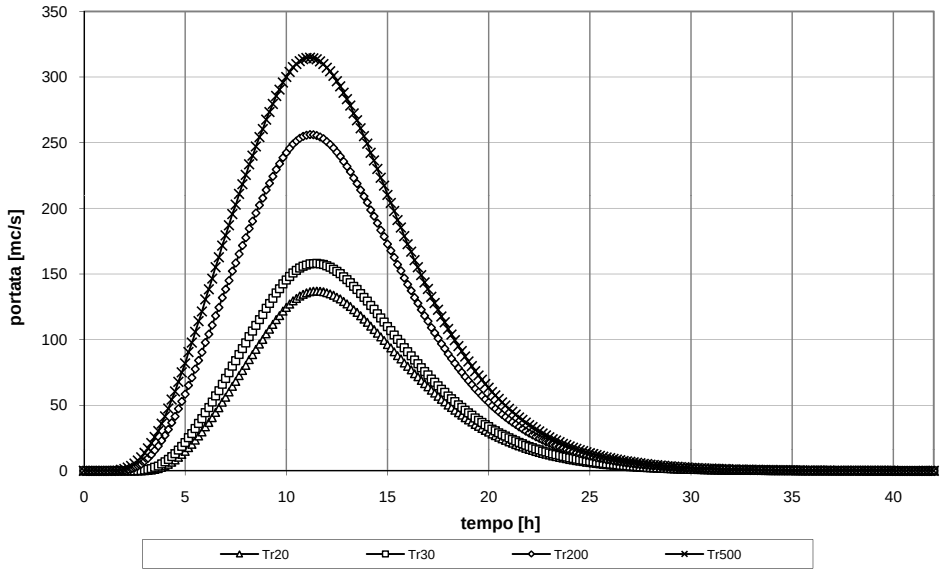
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	0.66	30.09	22.22
30	0.66	32.27	29.15
200	0.66	43.72	65.56
500	0.66	50.62	87.51

Durata critica Torrente Terzona

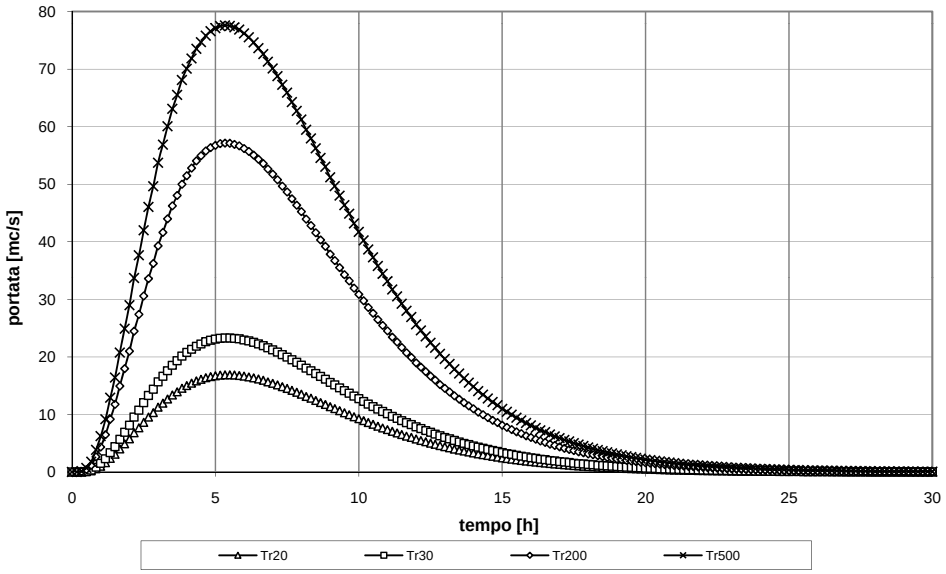
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	2.43	47.69	83.32
30	2.19	49.47	90.50
200	2.19	67.02	154.34
500	2.19	77.60	192.80

Idrogrammi di piena:

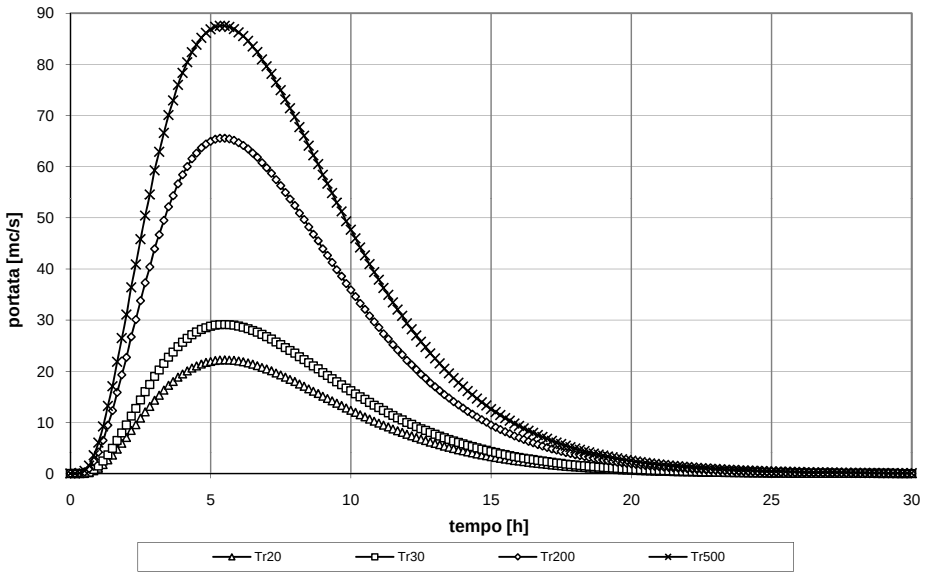
Idrogrammi di piena Torrente Pesa (Durata Critica Torrente Pesa)



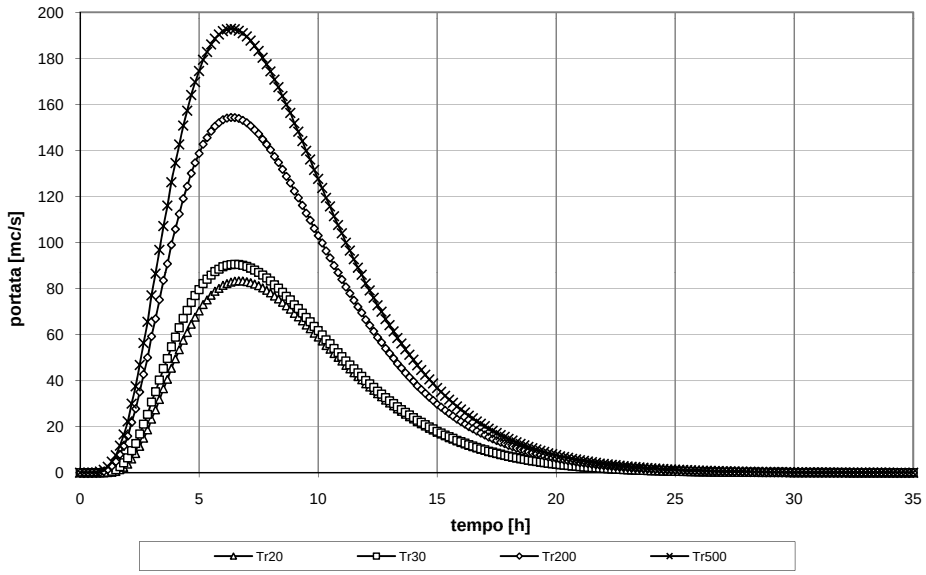
Idrogrammi di piena Torrente Pesa (Durata Critica Borro di Argiano)



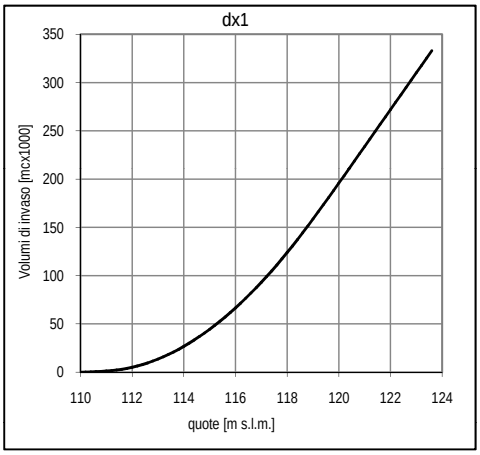
Idrogrammi di piena Torrente Pesa (Durata Critica Borro di Canciulle)

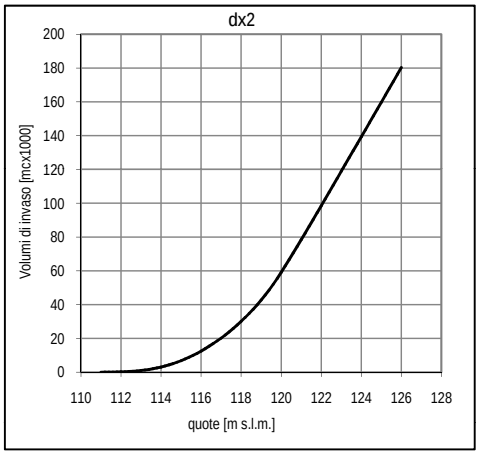


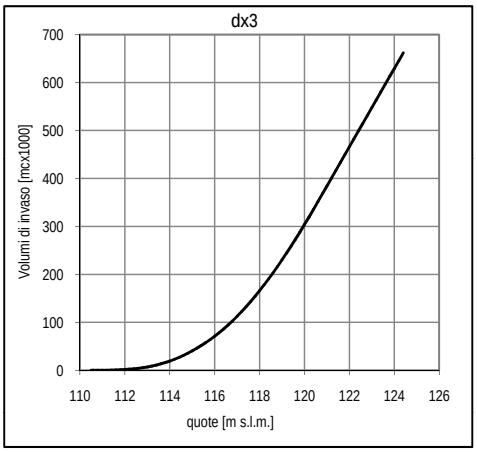
Idrogrammi di piena Torrente Pesa (Durata Critica Torrente Terzona)

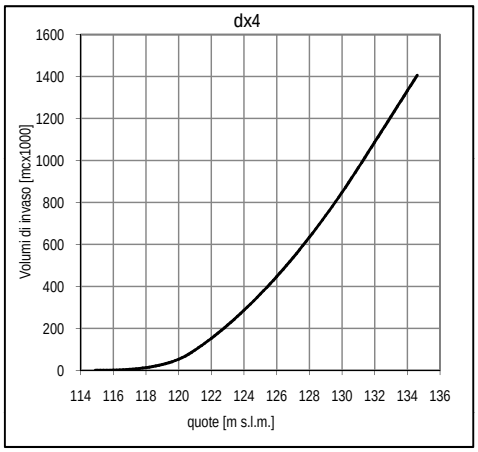


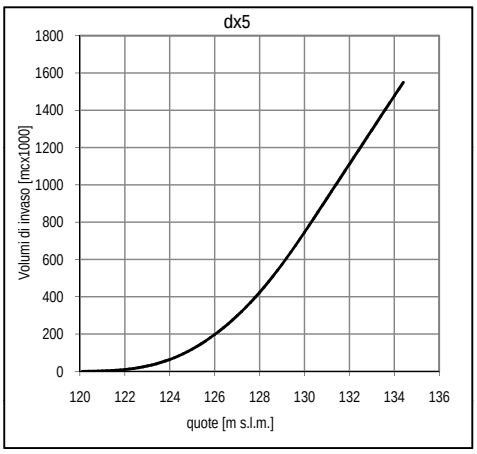
Curve di invaso Aree di Potenziale Esondazione

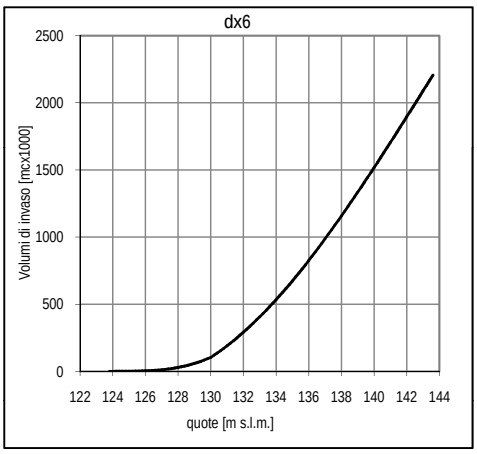


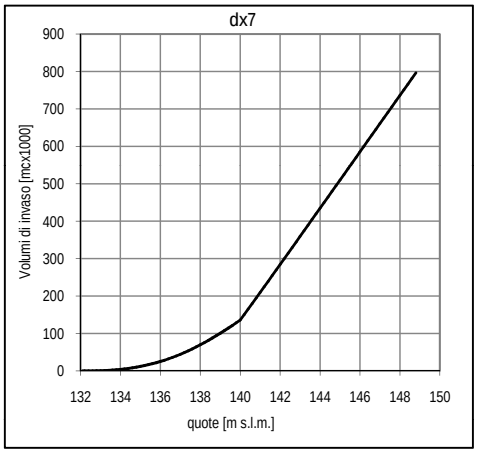


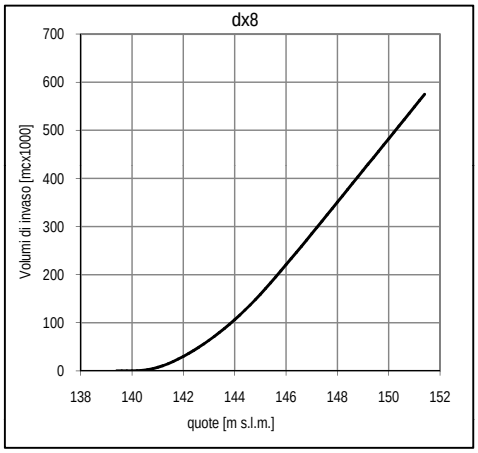


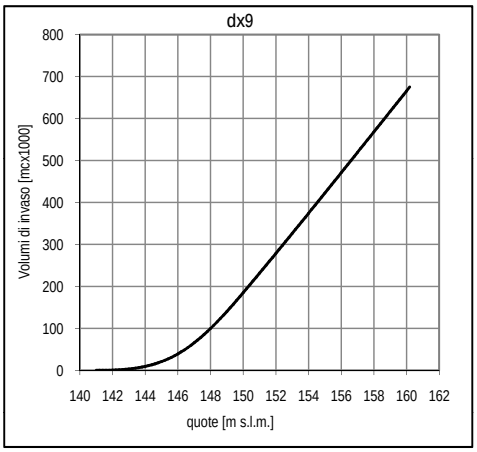


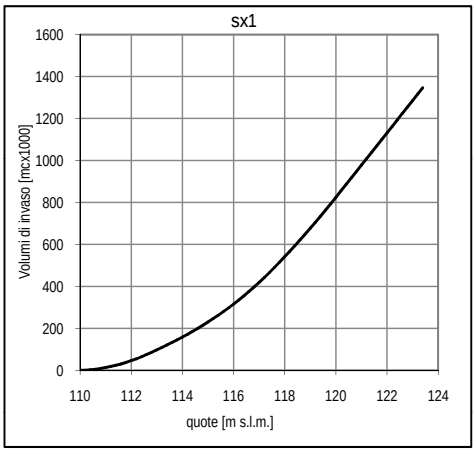


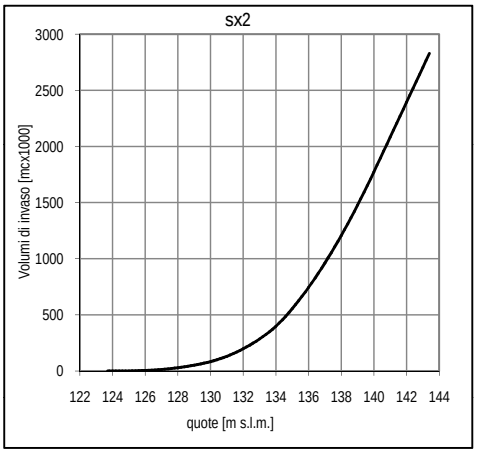


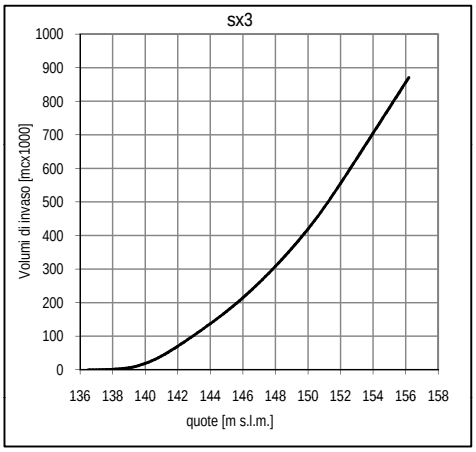

dx7
Volumi di invaso [mcx1000]
900
800
700
600
500
400
300
200
100
0
132 134 136 138 140 142 144 146 148 150
quote [m s.l.m.]


dx8
Volumi di invaso [mcx1000]
700
600
500
400
300
200
100
0
138 140 142 144 146 148 150 152
quote [m s.l.m.]


dx9
Volumi di invaso [mcx1000]
800
700
600
500
400
300
200
100
0
140 142 144 146 148 150 152 154 156 158 160 162
quote [m s.l.m.]


sx1
Volumi di invaso [mcx1000]
1600
1400
1200
1000
800
600
400
200
0
110 112 114 116 118 120 122 124
quote [m s.l.m.]


sx2
Volumi di invaso [mcx1000]
3000
2500
2000
1500
1000
500
0
122 124 126 128 130 132 134 136 138 140 142 144
quote [m s.l.m.]


sx3
Volumi di invaso [mcx1000]
1000
900
800
700
600
500
400
300
200
100
0
136 138 140 142 144 146 148 150 152 154 156 158
quote [m s.l.m.]

Risultati della modellistica idraulica (Durata Critica Torrente Pesa)

Condizioni al contorno di valle

Condizione di valle per il Torrente Pesa (Durata Critica Torrente Pesa): Scala di Deflusso della sezione 01686__06	
Q [mc/s]	W.S. Elev [m slm]
10	104.36
20	104.55
30	104.67
40	104.78
50	104.89
60	104.98
70	105.06
80	105.14
90	105.22
100	105.29
110	105.36
120	105.43
130	105.49
140	105.56
150	105.62
160	105.68
170	105.74
180	105.80
190	105.85
200	105.91
210	105.96
220	106.02
230	106.08
240	106.13
250	106.18
260	106.23
270	106.28
280	106.33
290	106.38
300	106.43
310	106.48
320	106.52
330	106.57
340	106.62
350	106.66
360	106.71
370	106.75
380	106.80
390	106.84
400	106.89

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02312__06	65	136.97	144.75	147.08		147.47	0.007379	2.77	49.42	31.93	0.71
02300__06	64	136.97	143.52	146.44		146.65	0.004211	2.04	67.25	46.08	0.54
02286__06	63	98.68	143.16	145.56		145.75	0.004555	2.20	53.02	45.75	0.55
02275__06	62	85.29	142.24	144.58		144.91	0.011542	2.55	33.47	35.22	0.83
02264__06	61	70.77	141.43	143.77		144.07	0.005706	2.42	29.19	18.30	0.61
02252__06	60	136.88	140.67	143.02		143.54	0.009422	3.61	46.06	35.23	0.83
02239__06	59	136.87	139.94	142.45		142.64	0.003457	2.33	80.59	75.29	0.51
02238PB06	58	136.87	139.69	142.52	141.29	142.58	0.000714	1.12	142.42	99.06	0.24
02238PC06	57	136.87	140.07	142.18		142.37	0.004930	1.93	71.03	61.23	0.57
02228__06	56	136.86	138.86	141.48		141.86	0.010416	2.95	52.69	53.19	0.83
02208__06	55	83.15	137.99	140.62		140.68	0.000996	1.02	81.59	53.36	0.26
02191__06	54	133.25	137.53	140.11		140.23	0.001989	1.55	85.83	51.61	0.38
02175__06	53	133.24	137.33	139.82		139.94	0.001674	1.51	88.77	49.36	0.36
02172PB06	52	133.24	136.78	139.80	138.85	139.90	0.001582	1.45	93.02	52.80	0.34
02172PC06	51	133.25	137.16	139.70		139.85	0.002241	1.67	81.27	50.52	0.41
02167BB06	50	133.25	137.38	139.69		139.78	0.001201	1.32	103.09	58.14	0.31
02167BC06	49	133.24	137.63	139.53	139.00	139.79	0.004521	2.24	59.50	36.04	0.56
02167BD06	48	133.24	134.11	136.86		136.98	0.001444	1.51	88.59	42.87	0.33
02152__06	47	133.24	132.79	136.50		136.70	0.002899	1.97	67.89	37.83	0.46
02134__06	46	127.67	131.43	135.08		135.79	0.009262	3.77	35.12	18.56	0.78
02119__06	45	102.79	130.99	134.19		134.71	0.006207	3.31	35.33	24.76	0.67
02105__06	44	101.26	130.96	133.75		133.99	0.004751	2.20	47.53	39.64	0.58
02089__06	43	101.04	130.00	132.83		133.11	0.004198	2.56	47.22	36.96	0.55
02070__06	42	104.94	129.52	132.20		132.41	0.003935	2.03	53.50	40.92	0.52
02055__06	41	104.93	128.82	131.41		131.72	0.006272	2.49	42.21	29.48	0.66
02040__06	40	104.93	127.54	130.74		130.91	0.002712	1.86	56.69	32.21	0.44
02028__06	39	104.93	127.62	130.28		130.51	0.004197	2.11	49.68	32.37	0.54
02012__06	38	104.93	127.26	129.42		129.70	0.006034	2.35	44.58	32.37	0.64
01998__06	37	104.93	126.21	128.56	128.56	128.89	0.018266	2.53	41.40	62.09	0.99
01991__06	36	104.93	125.85	128.06		128.28	0.005531	2.06	51.64	44.49	0.61
01973__06	35	104.93	125.12	127.41		127.62	0.004444	2.02	51.99	38.39	0.55
01960__06	34	104.93	124.22	126.95		127.13	0.004518	1.88	56.51	49.31	0.55
01943__06	33	104.93	123.20	126.13		126.37	0.004842	2.15	48.75	33.18	0.57
01936__06	32	104.92	123.16	125.85		126.07	0.004086	2.10	50.02	31.99	0.54
01928__06	31	136.96	123.04	125.35		125.61	0.005510	2.26	60.59	43.79	0.61
01925PB06	30	136.96	123.01	125.27	124.84	125.52	0.005158	2.23	61.43	43.53	0.60
01925PC06	29	136.96	122.96	125.26		125.50	0.004581	2.17	63.18	43.40	0.57
01911__06	28	136.96	121.88	124.29		124.72	0.008761	2.92	48.84	46.80	0.78
01895__06	27	136.96	121.22	123.44		123.64	0.005208	1.94	70.74	64.26	0.58
01879__06	26	136.95	119.27	122.88		123.02	0.002419	1.69	82.35	53.93	0.42
01864__06	25	136.95	119.47	122.30		122.53	0.004609	2.16	63.52	43.48	0.57
01848__06	24	136.95	118.88	121.42		121.77	0.005762	2.66	53.69	35.01	0.65
01835BB06	23	136.95	119.38	120.89	120.41	121.12	0.004272	2.11	65.08	44.50	0.56
01835BC06	22	136.95	113.90	116.20		116.32	0.001476	1.56	89.69	43.60	0.34
01835BD06	21	136.95	113.51	115.96		116.24	0.006622	2.31	59.35	49.25	0.67
01820__06	20	136.95	112.77	115.41		115.71	0.005581	2.43	57.99	45.78	0.62
01804__06	19	136.95	112.45	115.00		115.16	0.002816	1.82	75.83	48.19	0.46
01792BB06	18	136.94	112.00	114.49	113.78	114.74	0.003655	2.20	62.34	33.04	0.51
01792BC06	17	136.95	111.51	114.03		114.23	0.002524	1.95	70.19	31.73	0.42
01792BD06	16	136.95	111.64	113.80		114.19	0.007470	2.79	49.03	31.46	0.71
01777__06	15	136.94	111.11	113.20		113.40	0.004443	2.00	68.51	51.01	0.55
01761__06	14	136.94	109.46	112.73		112.86	0.002154	1.61	85.30	51.10	0.40
01747__06	13	136.93	109.21	112.37		112.52	0.001836	1.72	79.74	36.89	0.37
01740__06	12	136.93	108.86	112.16		112.34	0.002271	1.90	72.19	33.81	0.41
01738PB06	11	136.93	109.22	112.08	110.96	112.30	0.002763	2.11	65.03	28.37	0.44
01738PC06	10	136.93	109.11	111.98		112.24	0.003531	2.25	60.91	28.98	0.49
01732BB06	9	136.93	108.75	111.82		112.04	0.002970	2.07	66.09	32.34	0.46
01732BC06	8	136.93	107.83	111.93	109.45	112.02	0.000554	1.29	107.28	31.60	0.21
01732BD06	7	136.93	104.83	109.23		109.36	0.001144	1.63	84.03	28.68	0.30
01721__06	6	136.93	106.10	108.75		109.15	0.006630	2.78	49.34	30.51	0.69
01713__06	5	136.93	105.52	108.41		108.68	0.006580	2.31	59.23	47.85	0.66
01705__06	4	136.93	105.32	107.75		108.11	0.007957	2.68	51.17	38.09	0.73
01696__06	3	136.93	104.83	106.86	106.81	107.43	0.012133	3.36	41.53	34.71	0.91
01686BB06	2.5	136.93	103.89	105.54	105.54	106.18	0.014077	3.55	39.10	31.14	0.99

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02312__06	65	157.97	144.75	147.20		147.65	0.007733	2.97	53.23	31.93	0.73
02300__06	64	157.97	143.52	146.53		146.78	0.004557	2.20	71.66	46.08	0.56
02286__06	63	110.45	143.16	145.63		145.84	0.004813	2.32	55.99	45.75	0.57
02275__06	62	93.80	142.24	144.63		144.99	0.011891	2.67	35.19	35.35	0.85
02264__06	61	72.96	141.43	143.96		144.21	0.004304	2.24	32.59	18.30	0.54
02252__06	60	158.07	140.67	143.13		143.71	0.009972	3.84	49.70	35.23	0.86
02239__06	59	157.90	139.94	142.59		142.78	0.003259	2.36	91.09	77.85	0.50
02238PB06	58	157.90	139.69	142.66	141.40	142.72	0.000738	1.18	156.36	102.62	0.25
02238PC06	57	157.90	140.07	142.29		142.50	0.005019	2.04	77.46	62.18	0.58
02228__06	56	157.90	138.86	141.56		141.98	0.010788	3.13	57.11	53.37	0.85
02208__06	55	90.26	137.99	140.77		140.82	0.000881	1.01	89.16	53.56	0.25
02191__06	54	151.55	137.53	140.26		140.39	0.001952	1.63	93.46	51.63	0.38
02175__06	53	151.54	137.33	139.98		140.11	0.001646	1.58	96.90	54.42	0.36
02172PB06	52	151.54	136.78	139.96	138.94	140.07	0.001544	1.51	101.50	53.81	0.34
02172PC06	51	151.54	137.16	139.86		140.01	0.002155	1.74	89.25	51.21	0.40
02167BB06	50	151.54	137.38	139.86		139.95	0.001171	1.37	112.56	58.74	0.31
02167BC06	49	151.54	137.63	139.68	139.10	139.96	0.004434	2.34	64.85	36.06	0.56
02167BD06	48	151.54	134.11	137.03		137.15	0.001466	1.59	95.52	43.03	0.34
02152__06	47	151.54	132.79	136.65		136.87	0.002898	2.07	73.69	38.33	0.47
02134__06	46	140.77	131.43	135.15		135.96	0.010161	4.01	36.55	18.71	0.82
02119__06	45	108.34	130.99	134.23		134.78	0.006468	3.41	36.25	24.88	0.69
02105__06	44	106.24	130.96	133.79		134.04	0.004719	2.23	49.29	40.43	0.58
02089__06	43	105.60	130.00	132.88		133.16	0.004161	2.58	48.93	36.96	0.55
02070__06	42	112.32	129.52	132.27		132.48	0.003871	2.08	56.30	41.58	0.52
02055__06	41	112.31	128.82	131.47		131.80	0.006438	2.55	44.18	30.47	0.67
02040__06	40	112.31	127.54	130.81		131.00	0.002748	1.91	59.12	32.65	0.45
02028__06	39	112.31	127.62	130.35		130.59	0.004190	2.16	51.92	32.55	0.55
02012__06	38	112.31	127.26	129.46		129.77	0.006245	2.44	46.03	32.46	0.65
01998__06	37	112.31	126.21	128.59	128.59	128.93	0.017708	2.58	43.56	62.18	0.98
01991__06	36	112.31	125.85	128.12		128.34	0.005430	2.11	54.12	44.58	0.60
01973__06	35	112.31	125.12	127.47		127.69	0.004457	2.08	54.17	38.49	0.55
01960__06	34	112.31	124.22	127.02		127.20	0.004292	1.90	59.91	49.70	0.54
01943__06	33	112.31	123.20	126.26		126.49	0.004374	2.12	53.02	34.29	0.54
01936__06	32	112.32	123.16	126.02		126.23	0.003391	2.02	55.72	32.86	0.49
01928__06	31	157.88	123.04	125.49		125.77	0.005438	2.37	66.48	44.05	0.62
01925PB06	30	157.88	123.01	125.41	124.96	125.69	0.005073	2.35	67.33	43.59	0.60
01925PC06	29	157.88	122.96	125.40		125.66	0.004506	2.29	69.17	43.45	0.58
01911__06	28	157.88	121.88	124.41	124.19	124.88	0.008856	3.09	54.57	51.41	0.79
01895__06	27	157.88	121.22	123.56		123.77	0.004961	2.03	78.31	64.70	0.58
01879__06	26	157.88	119.27	123.03		123.19	0.002399	1.78	90.35	54.41	0.42
01864__06	25	157.87	119.47	122.44		122.70	0.004623	2.26	70.00	44.98	0.57
01848__06	24	157.87	118.88	121.55		121.94	0.005895	2.83	58.32	35.16	0.67
01835BB06	23	157.87	119.38	121.04	120.52	121.29	0.004141	2.21	71.57	44.54	0.56
01835BC06	22	157.87	113.90	116.34		116.48	0.001592	1.69	95.82	43.91	0.35
01835BD06	21	157.87	113.51	116.10		116.39	0.006151	2.39	66.23	50.11	0.65
01820__06	20	157.87	112.77	115.56		115.88	0.005292	2.52	65.16	47.41	0.62
01804__06	19	157.87	112.45	115.18		115.36	0.002601	1.88	84.79	48.71	0.45
01792BB06	18	157.87	112.00	114.67	113.90	114.94	0.003629	2.31	68.31	33.11	0.51
01792BC06	17	157.87	111.51	114.18		114.40	0.002755	2.11	74.69	31.76	0.44
01792BD06	16	157.87	111.64	113.91		114.37	0.007862	2.99	52.73	31.47	0.74
01777__06	15	157.86	111.11	113.34		113.56	0.004208	2.08	75.98	51.26	0.54
01761__06	14	157.86	109.46	112.93		113.07	0.002032	1.66	95.42	52.38	0.39
01747__06	13	157.85	109.21	112.58		112.74	0.001919	1.80	87.68	39.00	0.38
01740__06	12	157.85	108.86	112.37		112.57	0.002305	1.99	79.30	34.92	0.42
01738PB06	11	157.85	109.22	112.27	111.18	112.53	0.002850	2.24	70.61	28.64	0.45
01738PC06	10	157.85	109.11	112.17		112.46	0.003573	2.38	66.41	29.04	0.50
01732BB06	9	157.85	108.75	112.01		112.25	0.002943	2.19	72.47	34.14	0.46
01732BC06	8	157.85	107.83	112.13	109.60	112.23	0.000616	1.41	113.61	32.18	0.23
01732BD06	7	157.85	104.83	109.39		109.55	0.001292	1.78	88.76	28.92	0.32
01721__06	6	157.85	106.10	108.86		109.32	0.007213	3.01	52.54	30.81	0.73
01713__06	5	157.85	105.52	108.55		108.84	0.006858	2.38	66.21	52.83	0.68
01705__06	4	157.85	105.32	107.88		108.28	0.007827	2.83	56.12	38.58	0.74
01696__06	3	157.85	104.83	106.97	106.95	107.61	0.012504	3.55	45.69	35.88	0.93
01686BB06	2.5	157.85	103.89	105.67	105.67	106.36	0.013647	3.72	43.13	31.50	0.99

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02312__06	65	256.14	144.75	147.68		148.39	0.009097	3.74	68.51	31.93	0.81
02300__06	64	256.13	143.52	146.86		147.30	0.006506	2.96	86.52	46.08	0.69
02286__06	63	161.37	143.16	145.85		146.17	0.006176	2.85	66.14	46.66	0.66
02275__06	62	128.33	142.24	144.81		145.30	0.012897	3.07	41.76	35.83	0.91
02264__06	61	85.96	141.43	144.47		144.69	0.002726	2.04	42.06	18.30	0.43
02252__06	60	235.51	140.67	143.49	143.45	144.28	0.010916	4.49	62.53	35.23	0.93
02239__06	59	235.07	139.94	143.04		143.24	0.002709	2.44	128.31	84.85	0.47
02238PB06	58	235.07	139.69	143.12	141.79	143.20	0.000761	1.36	205.00	108.94	0.26
02238PC06	57	235.07	140.07	142.62		142.91	0.005215	2.38	98.97	64.77	0.61
02228__06	56	235.07	138.86	141.85		142.42	0.011339	3.64	72.43	54.00	0.90
02208__06	55	138.40	137.99	141.25		141.32	0.000907	1.20	115.16	53.94	0.26
02191__06	54	228.59	137.53	140.83		141.01	0.001820	1.87	123.07	51.71	0.38
02175__06	53	228.58	137.33	140.59		140.75	0.001455	1.78	133.73	62.54	0.35
02172PB06	52	228.58	136.78	140.57	139.27	140.72	0.001388	1.72	137.39	60.53	0.34
02172PC06	51	228.58	137.16	140.47		140.66	0.001878	1.95	121.33	54.29	0.39
02167BB06	50	228.58	137.38	140.48		140.60	0.001074	1.57	149.80	61.05	0.31
02167BC06	49	228.58	137.63	140.25	139.48	140.61	0.004194	2.68	85.36	36.10	0.56
02167BD06	48	228.58	134.11	137.58		137.77	0.001621	1.92	119.54	43.05	0.37
02152__06	47	228.58	132.79	137.14		137.46	0.003207	2.50	92.82	39.68	0.50
02134__06	46	184.27	131.43	135.46	135.41	136.48	0.011934	4.55	42.43	19.57	0.90
02119__06	45	124.43	130.99	134.32		134.96	0.007360	3.73	38.44	25.14	0.74
02105__06	44	120.30	130.96	133.91		134.18	0.004646	2.33	54.16	42.55	0.58
02089__06	43	117.39	130.00	132.99		133.29	0.004096	2.65	53.10	36.96	0.55
02070__06	42	134.30	129.52	132.46		132.70	0.003714	2.19	64.40	43.29	0.52
02055__06	41	134.27	128.82	131.64		132.02	0.006598	2.72	49.57	31.83	0.69
02040__06	40	134.27	127.54	131.02		131.23	0.002791	2.05	66.10	33.58	0.46
02028__06	39	134.27	127.62	130.55		130.82	0.004149	2.30	58.41	33.08	0.55
02012__06	38	134.27	127.26	129.58		129.95	0.006886	2.69	49.97	32.72	0.69
01998__06	37	134.27	126.21	128.70	128.67	129.07	0.015982	2.68	50.11	62.45	0.95
01991__06	36	134.27	125.85	128.29		128.53	0.005076	2.22	61.64	45.24	0.60
01973__06	35	134.27	125.12	127.66		127.90	0.004283	2.19	61.64	39.46	0.55
01960__06	34	134.27	124.22	127.32		127.48	0.003004	1.83	74.94	51.36	0.47
01943__06	33	138.40	123.20	126.87		127.04	0.002850	1.81	76.42	46.08	0.45
01936__06	32	149.51	123.16	126.67		126.86	0.002207	1.91	78.23	36.11	0.41
01928__06	31	244.15	123.04	125.99		126.37	0.005162	2.74	89.09	45.73	0.63
01925PB06	30	243.63	123.01	125.90	125.33	126.29	0.004791	2.74	89.21	44.10	0.61
01925PC06	29	243.63	122.96	125.90		126.26	0.004343	2.69	90.92	43.99	0.59
01911__06	28	243.94	121.88	124.81	124.73	125.41	0.008663	3.57	76.22	56.52	0.82
01895__06	27	243.34	121.22	124.02		124.28	0.004061	2.26	108.72	67.45	0.55
01879__06	26	243.33	119.27	123.58		123.79	0.002285	2.07	120.57	55.68	0.43
01864__06	25	248.53	119.47	123.00		123.34	0.004400	2.59	96.61	49.14	0.58
01848__06	24	248.53	118.88	122.04		122.62	0.006403	3.45	75.68	35.72	0.72
01835BB06	23	248.53	119.38	121.61	120.90	121.94	0.003752	2.58	96.91	44.66	0.56
01835BC06	22	248.53	113.90	116.85		117.08	0.002012	2.15	118.81	45.07	0.41
01835BD06	21	248.53	113.51	116.64		117.00	0.004946	2.68	94.14	53.41	0.62
01820__06	20	248.52	112.77	116.21		116.57	0.004064	2.74	97.47	52.72	0.57
01804__06	19	253.29	112.45	115.91		116.13	0.002134	2.13	121.51	52.82	0.43
01792BB06	18	253.29	112.00	115.39	114.41	115.77	0.003902	2.74	92.58	37.01	0.55
01792BC06	17	253.29	111.51	114.73		115.10	0.003858	2.71	93.55	35.61	0.53
01792BD06	16	253.29	111.64	114.41		115.10	0.009135	3.69	68.74	34.17	0.82
01777__06	15	253.28	111.11	114.02		114.28	0.003342	2.28	111.55	55.56	0.51
01761__06	14	253.28	109.46	113.74		113.90	0.001636	1.80	141.53	59.57	0.37
01747__06	13	253.27	109.21	113.44		113.65	0.001935	2.02	125.51	47.60	0.40
01740__06	12	253.27	108.86	113.22		113.48	0.002337	2.28	110.96	39.91	0.44
01738PB06	11	253.27	109.22	113.07	111.78	113.44	0.003082	2.70	93.69	29.42	0.48
01738PC06	10	253.27	109.11	112.91		113.33	0.003839	2.88	87.84	29.25	0.53
01732BB06	9	253.27	108.75	112.76		113.11	0.002872	2.61	98.74	38.24	0.48
01732BC06	8	253.27	107.83	112.91	110.24	113.08	0.000846	1.86	140.28	37.58	0.28
01732BD06	7	253.27	104.83	109.99		110.28	0.001932	2.38	106.38	29.60	0.40
01721__06	6	253.27	106.10	109.28		110.04	0.008972	3.87	66.29	35.01	0.84
01713__06	5	253.27	105.52	109.06		109.43	0.005686	2.69	94.60	56.22	0.65
01705__06	4	253.27	105.32	108.36		108.95	0.007857	3.41	75.27	40.43	0.77
01696__06	3	253.27	104.83	107.44	107.48	108.31	0.012181	4.20	63.53	40.94	0.97
01686BB06	2.5	253.27	103.89	106.20	106.20	107.13	0.012152	4.32	60.19	32.94	0.98

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
02312__06	65	314.72	144.75	147.93		148.79	0.009656	4.11	76.59	31.93	0.85
02300__06	64	314.72	143.52	147.01		147.58	0.007662	3.37	93.44	46.08	0.75
02286__06	63	189.65	143.16	145.95		146.34	0.006891	3.11	70.78	46.67	0.70
02275__06	62	146.08	142.24	144.91		145.44	0.012877	3.22	45.32	36.05	0.92
02264__06	61	96.13	141.43	144.70		144.92	0.002580	2.08	46.10	18.30	0.42
02252__06	60	274.75	140.67	143.67	143.63	144.55	0.011090	4.74	68.70	35.23	0.94
02239__06	59	274.21	139.94	143.25		143.46	0.002530	2.47	146.13	87.65	0.46
02238PB06	58	274.21	139.69	143.33	141.93	143.42	0.000764	1.43	228.03	112.28	0.26
02238PC06	57	274.21	140.07	142.77		143.10	0.005253	2.53	108.53	64.81	0.62
02228__06	56	274.21	138.86	141.96	141.93	142.62	0.011914	3.90	78.61	54.25	0.94
02208__06	55	170.14	137.99	141.51		141.60	0.000947	1.32	129.16	53.94	0.27
02191__06	54	269.10	137.53	141.11		141.31	0.001764	1.97	137.47	51.73	0.38
02175__06	53	269.10	137.33	140.89		141.06	0.001361	1.86	152.70	64.13	0.35
02172PB06	52	269.10	136.78	140.87	139.41	141.03	0.001311	1.80	155.61	60.96	0.34
02172PC06	51	269.10	137.16	140.76		140.97	0.001770	2.04	137.39	55.60	0.39
02167BB06	50	269.10	137.38	140.78		140.91	0.001037	1.66	168.18	63.32	0.31
02167BC06	49	269.09	137.63	140.52	139.67	140.93	0.004114	2.83	95.20	36.10	0.56
02167BD06	48	269.10	134.11	137.81		138.03	0.001751	2.10	129.19	43.05	0.38
02152__06	47	269.06	132.79	137.31		137.69	0.003601	2.76	99.33	39.92	0.54
02134__06	46	194.01	131.43	135.60	135.52	136.59	0.011724	4.50	45.16	20.59	0.90
02119__06	45	128.82	130.99	134.34		135.01	0.007592	3.81	39.03	25.21	0.75
02105__06	44	124.02	130.96	133.94		134.21	0.004619	2.35	55.48	43.11	0.58
02089__06	43	119.26	130.00	133.05		133.33	0.003762	2.58	55.33	36.96	0.53
02070__06	42	145.72	129.52	132.55		132.80	0.003643	2.24	68.43	43.56	0.52
02055__06	41	145.68	128.82	131.73		132.12	0.006563	2.80	52.19	31.99	0.69
02040__06	40	145.68	127.54	131.12		131.35	0.002787	2.11	69.53	33.85	0.46
02028__06	39	145.68	127.62	130.64		130.93	0.004153	2.37	61.55	33.33	0.56
02012__06	38	145.68	127.26	129.64		130.05	0.007172	2.80	51.95	32.86	0.71
01998__06	37	145.68	126.21	128.76		129.13	0.014990	2.71	53.71	62.60	0.93
01991__06	36	145.68	125.85	128.38		128.64	0.004799	2.25	65.95	45.54	0.59
01973__06	35	145.67	125.12	127.81		128.05	0.003771	2.18	67.36	39.69	0.53
01960__06	34	146.04	124.22	127.55		127.70	0.002211	1.72	87.05	52.52	0.41
01943__06	33	160.61	123.20	127.17		127.33	0.002211	1.78	90.30	46.91	0.41
01936__06	32	178.35	123.16	126.95		127.16	0.002208	2.02	88.28	37.45	0.42
01928__06	31	288.43	123.04	126.21		126.64	0.005049	2.91	99.33	45.79	0.63
01925PB06	30	288.43	123.01	126.12	125.51	126.56	0.004781	2.93	98.90	44.22	0.62
01925PC06	29	288.43	122.96	126.11		126.54	0.004374	2.88	100.53	44.08	0.60
01911__06	28	287.57	121.88	124.96	124.91	125.64	0.008948	3.81	84.88	58.11	0.84
01895__06	27	284.94	121.22	124.23		124.51	0.003777	2.36	122.75	68.26	0.54
01879__06	26	284.93	119.27	123.79		124.04	0.002306	2.21	132.87	56.45	0.44
01864__06	25	290.32	119.47	123.24		123.61	0.004180	2.70	108.08	49.41	0.58
01848__06	24	290.31	118.88	122.24		122.90	0.006592	3.69	82.72	35.95	0.74
01835BB06	23	289.03	119.38	121.83	121.06	122.21	0.003651	2.71	107.02	44.68	0.56
01835BC06	22	289.03	113.90	117.08		117.35	0.002100	2.31	129.13	45.58	0.42
01835BD06	21	289.03	113.51	116.89		117.27	0.004377	2.74	107.75	54.78	0.60
01820__06	20	289.03	112.77	116.53		116.88	0.003424	2.74	114.84	55.95	0.54
01804__06	19	304.25	112.45	116.24		116.49	0.002013	2.25	139.36	54.64	0.42
01792BB06	18	304.25	112.00	115.71	114.66	116.15	0.003772	2.91	104.96	39.01	0.55
01792BC06	17	304.24	111.51	114.97		115.42	0.004223	2.98	102.09	36.01	0.56
01792BD06	16	304.24	111.64	114.64		115.45	0.009209	3.98	76.88	35.34	0.84
01777__06	15	304.22	111.11	114.40		114.67	0.002711	2.30	133.10	57.23	0.47
01761__06	14	304.21	109.46	114.20		114.36	0.001325	1.82	169.16	60.77	0.34
01747__06	13	305.79	109.21	113.95		114.16	0.001703	2.03	150.67	51.51	0.38
01740__06	12	314.43	108.86	113.70		113.99	0.002311	2.40	131.55	47.97	0.44
01738PB06	11	314.43	109.22	113.51	112.11	113.95	0.003207	2.95	106.74	29.96	0.50
01738PC06	10	314.43	109.11	113.29		113.81	0.004070	3.17	99.16	29.36	0.55
01732BB06	9	314.43	108.75	113.18		113.58	0.002798	2.81	116.89	44.21	0.48
01732BC06	8	314.43	107.83	113.33	110.55	113.55	0.000957	2.10	156.10	37.58	0.30
01732BD06	7	314.43	104.83	110.31		110.68	0.002317	2.72	115.74	29.94	0.44
01721__06	6	314.43	106.10	109.54	109.39	110.45	0.009338	4.26	75.62	36.59	0.88
01713__06	5	314.43	105.52	109.35		109.77	0.005221	2.85	110.98	57.56	0.64
01705__06	4	314.43	105.32	108.62		109.32	0.007983	3.73	85.98	41.84	0.79
01696__06	3	314.43	104.83	107.69	107.76	108.69	0.011912	4.52	74.22	42.26	0.97
01686BB06	2.5	314.42	103.89	106.50	106.50	107.56	0.011518	4.63	70.24	33.77	0.98

HEC-RAS Risultati TR20					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	110.00	110.00	0.00	0.00	0.00
dx2	111.00	111.00	0.00	0.00	0.00
dx3	110.50	110.50	0.00	0.00	0.00
dx4	114.90	114.90	0.00	0.00	0.00
dx5	120.10	120.10	0.00	0.00	0.00
dx6	123.80	123.80	0.00	0.00	0.00
dx7	132.63	132.10	0.10	970.00	180.00
dx8	140.62	139.40	25.60	10430.00	2660.00
dx9	143.78	141.00	1.64	7270.00	7670.00
sx1	110.00	110.00	0.00	0.00	0.00
sx2	127.63	123.70	0.11	16960.00	22700.00
sx3	143.80	136.50	9.17	35000.00	130000.00

HEC-RAS Risultati TR30					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	110.00	110.00	0.00	0.00	0.00
dx2	111.00	111.00	0.00	0.00	0.00
dx3	110.50	110.50	0.00	0.00	0.00
dx4	114.90	114.90	0.00	0.00	0.00
dx5	120.10	120.10	0.00	0.00	0.00
dx6	123.80	123.80	0.00	0.00	0.00
dx7	132.69	132.10	0.17	970.00	230.00
dx8	140.75	139.40	30.50	10430.00	3970.00
dx9	143.96	141.00	12.80	8110.00	9140.00
sx1	110.00	110.00	0.00	0.00	0.00
sx2	127.77	123.70	0.21	16860.00	25090.00
sx3	143.97	136.50	54.99	35260.00	136020.00

HEC-RAS Risultati TR200					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	110.00	110.00	0.00	0.00	0.00
dx2	111.00	111.00	0.00	0.00	0.00
dx3	114.38	110.50	2.61	19140.00	26290.00
dx4	117.41	114.90	0.02	8220.00	7320.00
dx5	123.23	120.10	0.06	31050.00	35160.00
dx6	126.48	123.80	-0.14	7560.00	6640.00
dx7	132.88	132.10	2.14	1300.00	450.00
dx8	141.25	139.40	10.40	20520.00	11780.00
dx9	144.46	141.00	72.23	11240.00	13960.00
sx1	110.00	110.00	0.00	0.00	0.00
sx2	128.17	123.70	0.11	19850.00	32520.00
sx3	144.50	136.50	64.95	36460.00	155200.00

HEC-RAS Risultati TR500					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	110.00	110.00	0.00	0.00	0.00
dx2	111.00	111.00	0.00	0.00	0.00
dx3	115.03	110.50	0.03	26560.00	41200.00
dx4	117.70	114.90	0.01	9240.00	9770.00
dx5	123.48	120.10	-0.03	34840.00	43220.00
dx6	126.81	123.80	-0.29	10690.00	9400.00
dx7	133.01	132.10	4.67	1860.00	620.00
dx8	141.50	139.40	40.78	23250.00	17320.00
dx9	144.67	141.00	90.70	12230.00	16480.00
sx1	110.00	110.00	0.00	0.00	0.00
sx2	128.27	123.70	1.44	21450.00	34730.00
sx3	144.72	136.50	46.04	37140.00	163500.00

Risultati della modellistica idraulica (Durata Critica Borro di Argiano)

Condizione di valle per il Torrente Pesa (Durata Critica Torrente Terzona): Scala di Deflusso della sezione 01686__06	
Q [mc/s]	W.S. Elev [m slm]
1	104.10
2	104.15
3	104.19
4	104.22
5	104.25
6	104.28
7	104.30
8	104.32
9	104.34
10	104.36
15	104.46
20	104.55
25	104.61
30	104.67
35	104.73
40	104.78
45	104.84
50	104.89
55	104.93
60	104.98
65	105.03
70	105.06
75	105.10
80	105.14
85	105.18
90	105.22
95	105.25
100	105.29
105	105.32
110	105.36
115	105.39
120	105.43
125	105.46
130	105.49
135	105.53
140	105.56
145	105.59
150	105.62
155	105.65
160	105.68
165	105.71
170	105.74
175	105.77
180	105.80
185	105.83
190	105.86
200	105.91
205	105.94
210	105.97
215	105.99
220	106.02
225	106.05
230	106.08
235	106.10
240	106.13
245	106.15
250	106.18
255	106.20
260	106.23
265	106.26

HEC-RAS Risultati (Valori utilizzati come condizione di valle per il Borro di Argiano)			
Sezione	River Sta	Tr [anni]	Max W.S. Elev [m slm]
01721__06	6	20	107.30
01721__06	6	30	107.47
01721__06	6	200	108.20
01721__06	6	500	108.26

Risultati della modellistica idraulica (Durata Critica Torrente Terzona)

Condizione di valle per il Torrente Pesa (Durata Critica Torrente Terzona): Scala di Deflusso della sezione 01686__06	
Q [mc/s]	W.S. Elev [m slm]
1	104.10
2	104.15
3	104.19
4	104.22
5	104.25
6	104.28
7	104.30
8	104.32
9	104.34
10	104.36
15	104.46
20	104.55
25	104.61
30	104.67
35	104.73
40	104.78
45	104.84
50	104.89
55	104.93
60	104.98
65	105.03
70	105.06
75	105.10
80	105.14
85	105.18
90	105.22
95	105.25
100	105.29
105	105.32
110	105.36
115	105.39
120	105.43
125	105.46
130	105.49
135	105.53
140	105.56
145	105.59
150	105.62
155	105.65
160	105.68
165	105.71
170	105.74
175	105.77
180	105.80
185	105.83
190	105.86
200	105.91
205	105.94
210	105.97
215	105.99
220	106.02
225	106.05
230	106.08
235	106.10
240	106.13
245	106.15
250	106.18
255	106.20
260	106.23
265	106.26

HEC-RAS Risultati (Valori utilizzati come condizione di valle per il Torrente Terzona)			
Sezione	River Sta	Tr [anni]	Max W.S. Elev [m slm]
01943__06	33	20	125.83
01943__06	33	30	125.88
01943__06	33	200	126.24
01943__06	33	500	126.47

Borro di Argiano

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
1.76	3.30	0.70	1.43	0.35

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
21.320	0.323	0.180	20.041	0.320	0.206

Sintesi dei risultati del modello idrologico:

Durata critica Borro di Argiano

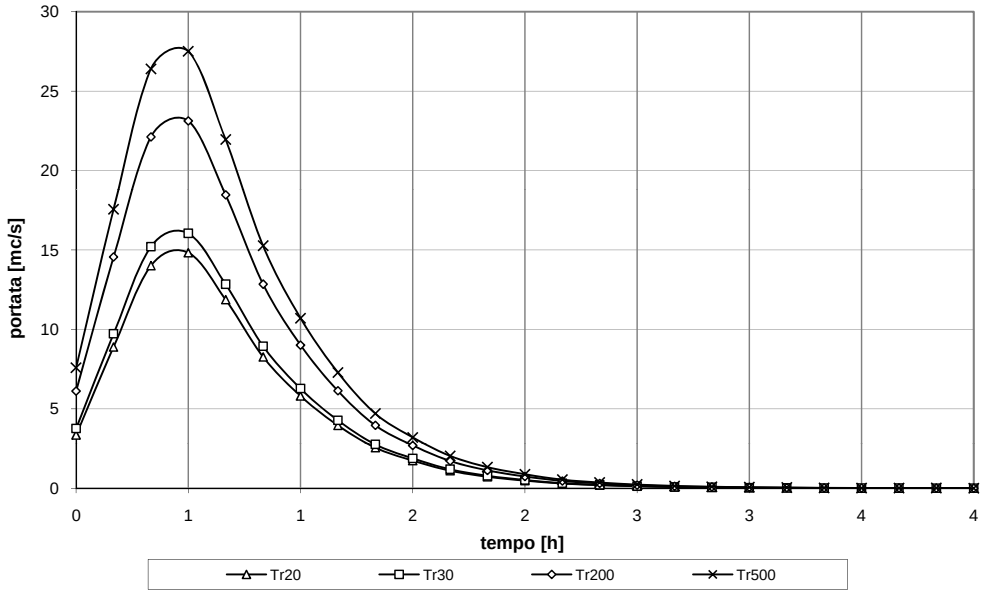
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	0.55	30.08	15.62
30	0.55	32.36	16.91
200	0.55	45.53	24.39
500	0.55	53.70	29.02

Durata critica Torrente Pesa

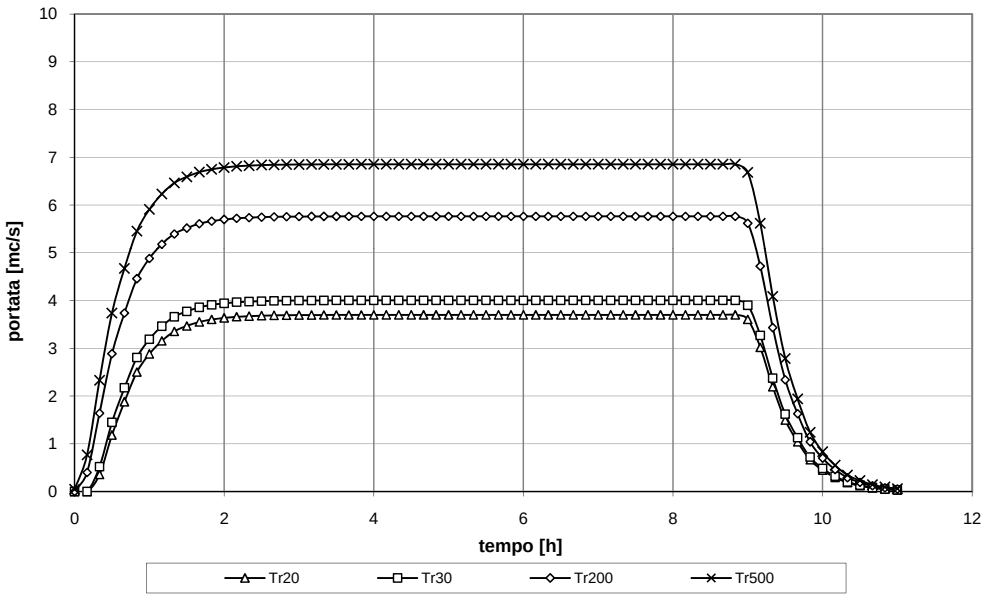
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	9.17	74.79	3.70
30	9.17	80.46	4.00
200	9.17	113.21	5.76
500	9.17	133.50	6.85

Idrogrammi di piena:

Idrogrammi di piena Borro di Argiano (Durata Critica Borro di Argiano)



Idrogrammi di piena Borro di Argiano (Durata Critica Torrente Pesa)

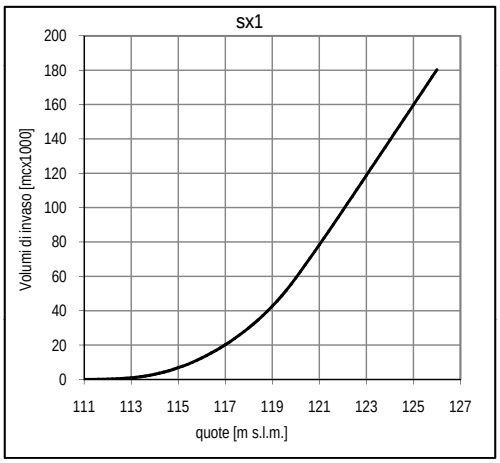


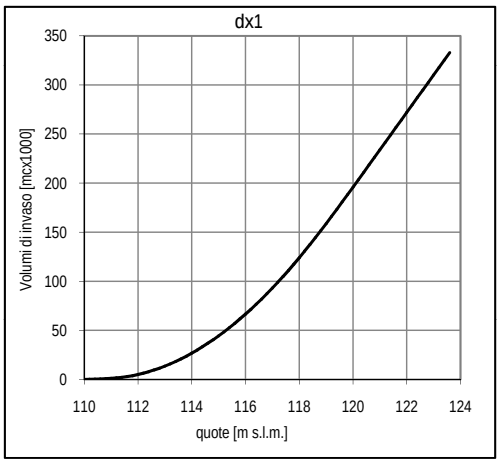
Risultati della modellistica idraulica (Durata Critica Borro di Argiano)

Condizioni al contorno di valle

Condizione di valle per il Borro di Argiano (Durata Critica Borro di Argiano): Max W.S Elev sezione 01721__06 del Torrente Pesa	
Tr [anni]	W.S. Elev [m slm]
20	107.30
30	107.47
200	108.20
500	108.26

Curve di invaso Aree di Potenziale Esondazione





HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	14.83	123.06	125.57		125.66	0.001078	1.29	11.53	5.93	0.29
00025PC11	9	14.83	121.09	122.80	123.07	123.71	0.026470	4.22	3.51	3.56	1.36
00021__11	8	14.63	120.19	121.73	121.99	122.74	0.030970	4.45	3.29	3.05	1.37
00018PB11	7	14.85	118.16	121.71		121.83	0.001846	1.51	9.82	3.21	0.28
00018PC11	6	14.85	117.78	119.03	119.62	120.99	0.080845	6.19	2.40	3.11	2.25
00016__11	5	14.83	117.34	118.60	118.98	119.78	0.043047	4.80	3.09	4.62	1.87
00008__11	4	10.86	113.85	115.47	115.55	116.01	0.020326	3.26	3.33	4.00	1.14
00003PB11	3	5.92	112.23	114.58	113.48	114.64	0.001073	1.02	5.79	3.37	0.25
00003PC11	2	5.92	112.23	113.79	113.48	113.98	0.005704	1.89	3.13	3.36	0.63
00001__11	1	5.92	106.9	107.46	107.84	108.79	0.088825	5.12	1.16	2.16	2.23

HEC-RAS Risultati TR20					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	113.23	110.00	8.90	12.31	16.16
sx1	114.42	111.00	4.44	4	4

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	16.05	123.06	125.66		125.75	0.001120	1.33	12.05	5.93	0.30
00025PC11	9	16.05	121.09	122.86	123.14	123.81	0.026688	4.30	3.73	3.72	1.37
00021__11	8	16.04	120.19	121.80	122.07	122.87	0.031373	4.59	3.50	3.05	1.37
00018PB11	7	16.02	118.16	121.83		121.95	0.001963	1.57	10.20	3.21	0.28
00018PC11	6	16.02	117.78	119.07	119.69	121.12	0.081738	6.34	2.53	3.18	2.27
00016__11	5	16.02	117.34	118.64	119.03	119.87	0.043038	4.90	3.27	4.73	1.88
00008__11	4	11.17	113.85	115.50	115.56	116.04	0.019896	3.27	3.42	4.00	1.13
00003PB11	3	5.95	112.23	114.59	113.48	114.64	0.001076	1.03	5.80	3.37	0.25
00003PC11	2	5.94	112.23	113.80	113.48	113.98	0.005702	1.89	3.14	3.36	0.63
00001__11	1	5.94	106.9	107.54	107.84	108.55	0.059277	4.45	1.34	2.18	1.81

HEC-RAS Risultati TR30					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	113.49	110	10.15	12.77	19.43
sx1	114.46	111.00	4.46	4	5

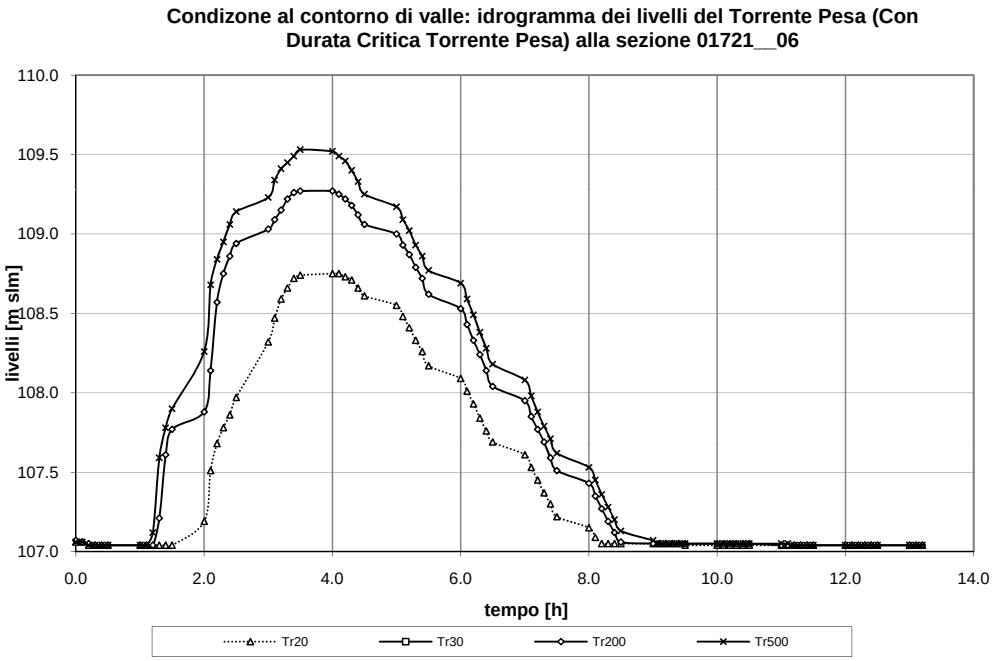
HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	18.97	123.06	125.85		125.96	0.001220	1.44	13.19	5.93	0.31
00025PC11	9	23.13	121.09	123.18	123.49	124.26	0.025680	4.59	5.04	4.41	1.37
00021__11	8	23.11	120.19	122.32	122.45	123.37	0.023965	4.55	5.08	3.05	1.12
00018PB11	7	23.10	118.16	122.48		122.66	0.002613	1.88	12.28	3.21	0.31
00018PC11	6	23.10	117.78	119.29	120.04	121.84	0.086176	7.08	3.26	3.57	2.36
00016__11	5	23.09	117.34	118.85	119.32	120.32	0.042117	5.37	4.30	5.29	1.90
00008__11	4	12.54	113.85	115.59	115.64	116.15	0.018481	3.31	3.79	4.00	1.08
00003PB11	3	6.44	112.23	114.66	113.53	114.72	0.001131	1.06	6.05	3.37	0.25
00003PC11	2	6.43	112.23	113.86	113.53	114.05	0.005603	1.93	3.34	3.37	0.62
00001__11	1	6.38	106.9	108.05		108.38	0.012355	2.56	2.49	2.33	0.79

HEC-RAS Risultati TR200					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	114.58	110.00	16.54	17.79	36.4
sx1	114.58	111.00	12.60	4	5

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	18.91	123.06	125.85		125.95	0.001219	1.44	13.17	5.93	0.31
00025PC11	9	27.51	121.09	123.37	123.67	124.48	0.024395	4.68	5.88	4.78	1.35
00021__11	8	27.50	120.19	122.58	122.68	123.70	0.023470	4.69	5.86	3.05	1.08
00018PB11	7	27.49	118.16	122.75		122.97	0.003149	2.09	13.15	3.21	0.33
00018PC11	6	27.49	117.78	119.41	120.22	122.23	0.087827	7.44	3.69	3.78	2.40
00016__11	5	27.49	117.34	118.96	119.47	120.56	0.041640	5.60	4.91	5.60	1.91
00008__11	4	13.13	113.85	115.63	115.67	116.19	0.017970	3.32	3.95	4.00	1.07
00003PB11	3	8.13	112.23	114.88	113.69	114.95	0.001341	1.20	6.78	3.37	0.27
00003PC11	2	8.11	112.23	114.05	113.68	114.26	0.005478	2.04	3.98	3.37	0.60
00001__11	1	8.1	106.9	108.29		108.65	0.011646	2.65	3.05	2.39	0.75

HEC-RAS Risultati TR500					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	114.90	110.00	21.87	19.43	42.39
sx1	114.90	111.00	16.01	5	6

Risultati della modellistica idraulica (Durata critica Torrente Pesa)



Risultati della modellistica idraulica (Durata critica Torrente Pesa)

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	3.70	123.06	124.46		124.48	0.000689	0.74	5.01	5.24	0.24
00025PC11	9	3.70	121.09	122.02	122.10	122.44	0.023024	2.86	1.29	2.23	1.20
00021__11	8	3.70	120.19	120.78	121.06	121.67	0.065488	4.18	0.89	1.98	1.99
00018PB11	7	3.74	118.16	120.08		120.11	0.000808	0.81	4.60	3.09	0.21
00018PC11	6	3.74	117.78	118.48	118.73	119.28	0.065110	3.99	0.94	2.15	1.93
00016__11	5	3.73	117.34	118.09	118.28	118.67	0.047537	3.36	1.11	3.12	1.80
00008__11	4	3.70	113.85	114.79	114.94	115.33	0.032743	3.26	1.13	1.93	1.36
00003PB11	3	3.38	112.23	114.07	113.17	114.11	0.000900	0.83	4.07	3.37	0.24
00003PC11	2	3.38	112.23	113.44	113.17	113.58	0.005640	1.65	2.05	2.72	0.61
00001__11	1	0.52	106.9	108.72		108.72	0.000022	0.13	4.1	2.42	0.03

HEC-RAS Risultati TR20					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	112.43	110.00	0.34	8.67	8.11
sx1	114.05	111.00	0.28	3	3

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	4.00	123.06	124.56		124.59	0.000611	0.72	5.56	5.52	0.23
00025PC11	9	4.00	121.09	122.05	122.14	122.49	0.023177	2.93	1.37	2.28	1.21
00021__11	8	4.00	120.19	120.81	121.10	121.74	0.066190	4.28	0.93	2.01	2.01
00018PB11	7	4.04	118.16	120.18		120.21	0.000794	0.82	4.91	3.13	0.21
00018PC11	6	4.04	117.78	118.50	118.77	119.35	0.065692	4.09	0.99	2.17	1.94
00016__11	5	4.03	117.34	118.12	118.31	118.71	0.047057	3.42	1.18	3.19	1.80
00008__11	4	4.00	113.85	114.82	114.98	115.38	0.032756	3.33	1.20	1.98	1.36
00003PB11	3	3.57	112.23	114.11	113.20	114.15	0.000926	0.85	4.18	3.37	0.24
00003PC11	2	3.56	112.23	113.47	113.20	113.61	0.005664	1.67	2.13	2.77	0.61
00001__11	1	0.52	106.9	108.83		108.83	0.000019	0.12	4.36	2.42	0.03

HEC-RAS Risultati TR30					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	112.79	110.00	0.46	9.54	11.48
sx1	114.07	111.00	0.32	3	3

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	5.76	123.06	124.88		124.91	0.000563	0.77	7.44	5.93	0.22
00025PC11	9	5.76	121.09	122.22	122.34	122.76	0.023874	3.25	1.77	2.53	1.24
00021__11	8	5.76	120.19	120.96	121.30	122.03	0.061479	4.59	1.26	2.19	1.93
00018PB11	7	5.76	118.16	120.59		120.63	0.000872	0.93	6.22	3.21	0.21
00018PC11	6	5.76	117.78	118.62	118.95	119.69	0.069052	4.58	1.26	2.38	2.01
00016__11	5	5.76	117.34	118.22	118.45	118.94	0.045407	3.75	1.54	3.51	1.81
00008__11	4	5.76	113.85	115.01	115.24	115.67	0.031658	3.59	1.61	2.26	1.36
00003PB11	3	4.70	112.23	114.26	113.34	114.31	0.001187	1.00	4.68	3.37	0.27
00003PC11	2	5.05	112.23	113.68	113.38	113.85	0.005747	1.83	2.76	3.16	0.62
00001__11	1	0.53	106.9	109.26		109.26	0.000012	0.1	5.4	2.42	0.02

HEC-RAS Risultati TR200					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	113.89	110.00	1.00	15.18	25.1
sx1	114.16	111.00	0.78	3	3

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00025PB11	10	6.85	123.06	125.00		125.04	0.000612	0.84	8.15	5.93	0.23
00025PC11	9	6.85	121.09	122.31	122.45	122.90	0.024264	3.42	2.00	2.66	1.26
00021__11	8	6.85	120.19	121.05	121.41	122.18	0.058149	4.70	1.46	2.29	1.88
00018PB11	7	6.85	118.16	120.72		120.78	0.001038	1.03	6.65	3.21	0.23
00018PC11	6	6.85	117.78	118.68	119.05	119.89	0.071928	4.87	1.41	2.49	2.06
00016__11	5	6.85	117.34	118.28	118.53	119.07	0.045223	3.93	1.74	3.69	1.83
00008__11	4	6.84	113.85	115.18	115.31	115.69	0.029620	3.17	2.16	4.00	1.37
00003PB11	3	6.54	112.23	114.66	113.54	114.72	0.001163	1.08	6.05	3.37	0.26
00003PC11	2	6.53	112.23	113.87	113.54	114.06	0.005596	1.93	3.38	3.37	0.62
00001__11	1	0.99	106.9	109.49		109.49	0.000032	0.17	5.96	2.42	0.03

HEC-RAS Risultati TR500					
Storage Area	W.S. Elev [m slm]	SA Min El [m slm]	Net Flux [mc/s]	SA Area [mq]	Volume [mc]
dx1	114.66	110.00	7.95	18.53	37.96
sx1	114.66	111.00	8.60	4	5

Borro di Canciulle

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
2.29	3.30	0.60	3.07	0.20

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
20.887	0.340	0.170	18.953	0.344	0.202

Sintesi dei risultati del modello idrologico:

Durata critica Borro di Canciulle

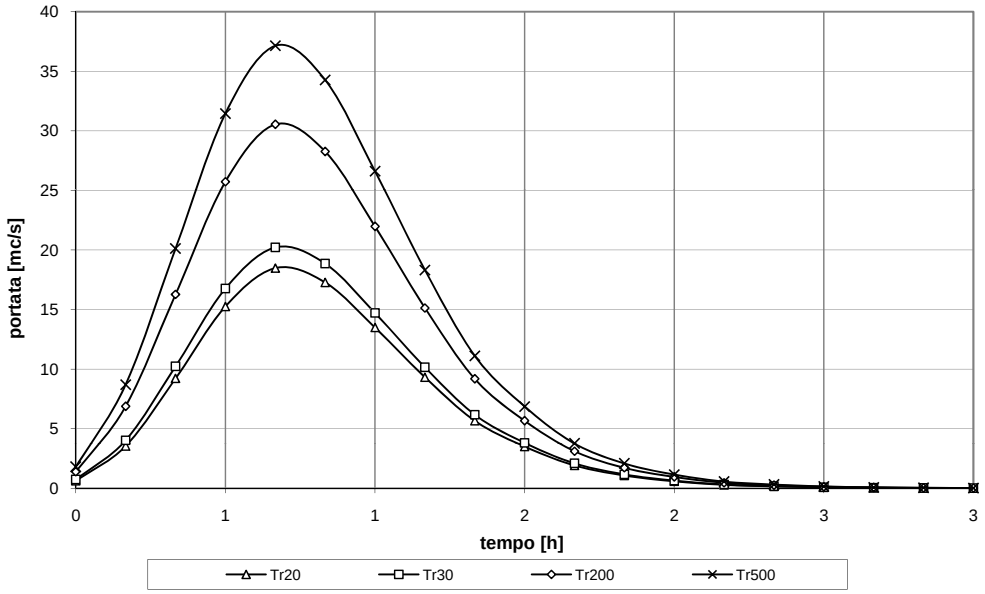
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	0.66	30.13	18.97
30	0.66	32.70	20.74
200	0.66	47.98	31.25
500	0.66	57.73	37.97

Durata critica Torrente Pesa

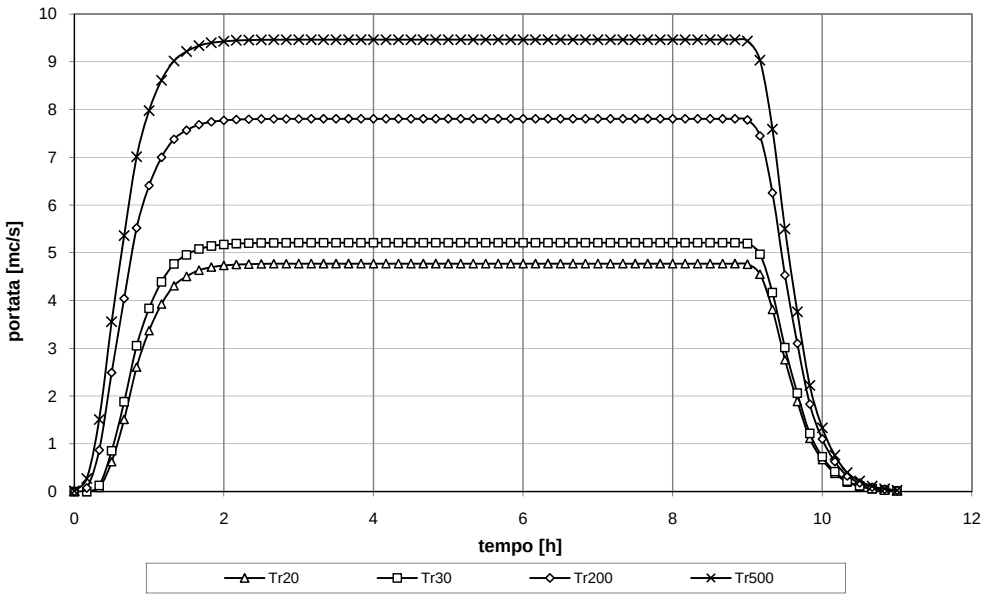
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	9.17	74.40	4.77
30	9.17	80.75	5.21
200	9.17	118.47	7.81
500	9.17	142.55	9.46

Idrogrammi di piena:

Idrogrammi di piena Borro di Canciulle (Durata Critica Borro di Canciulle)



Idrogrammi di piena Borro di Canciulle (Durata Critica Torrente Pesa)



Risultati della modellistica idraulica (Durata Critica Borro di Canciulle)

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	18.46	132.18	134.64		134.87	0.008327	2.12	8.69	10.30	0.74
00038PB11	5	18.46	132.06	134.69		134.83	0.004108	1.65	11.17	11.49	0.54
00038PC11	4	18.46	129.86	130.94	131.34	132.27	0.042125	5.10	3.62	4.26	1.77
00029__11	3	18.44	125.39	126.75	127.23	128.21	0.042543	5.35	3.45	3.46	1.71
00011__11	2	18.42	117.13	119.26	119.75	120.75	0.049272	5.4	3.41	3.17	1.66
00003__11	1	18.41	115.34	116.49	116.72	117.2	0.0231	3.73	4.94	7.39	1.46

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	20.22	132.18	134.74		134.96	0.007434	2.06	9.84	11.56	0.71
00038PB11	5	20.20	132.06	134.79		134.92	0.003645	1.64	12.29	11.62	0.51
00038PC11	4	20.19	129.86	131.00	131.42	132.40	0.042029	5.24	3.85	4.28	1.76
00029__11	3	20.18	125.39	126.83	127.32	128.34	0.042423	5.46	3.70	3.58	1.72
00011__11	2	20.15	117.13	119.33	119.85	120.9	0.049898	5.55	3.63	3.28	1.68
00003__11	1	20.14	115.34	116.54	116.78	117.28	0.023097	3.8	5.3	7.74	1.46

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	30.55	132.18	135.24		135.43	0.003942	1.94	15.71	12.20	0.55
00038PB11	5	30.52	132.06	135.27		135.41	0.002563	1.69	18.02	12.23	0.45
00038PC11	4	30.52	129.86	131.30	132.03	133.09	0.041835	5.93	5.14	4.39	1.75
00029__11	3	30.49	125.39	127.18	127.78	129.02	0.042168	6.01	5.07	4.18	1.74
00011__11	2	30.45	117.13	119.67	120.32	121.69	0.052842	6.29	4.84	3.83	1.78
00003__11	1	30.44	115.34	116.78	117.09	117.65	0.023065	4.14	7.36	9.44	1.5

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	37.15	132.18	135.53		135.72	0.003113	1.93	19.29	12.56	0.50
00038PB11	5	37.12	132.06	135.55		135.70	0.002207	1.72	21.54	12.59	0.42
00038PC11	4	37.12	129.86	131.47	132.22	133.47	0.041624	6.27	5.92	4.45	1.73
00029__11	3	37.07	125.39	127.37	128.03	129.39	0.042047	6.29	5.89	4.49	1.75
00011__11	2	37.03	117.13	119.85	120.58	122.12	0.054251	6.68	5.55	4.09	1.83
00003__11	1	37.01	115.34	116.98	117.19	117.74	0.024545	3.87	9.57	14.46	1.52

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.02304 valida per tutti i tempi di ritorno.

Risultati della modellistica idraulica (Durata critica Torrente Pesa)

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	4.77	132.18	133.25		133.42	0.009158	1.84	2.59	3.87	0.72
00038PB11	5	4.77	132.06	133.32		133.37	0.001237	0.98	4.86	3.87	0.28
00038PC11	4	4.77	129.86	130.36	130.54	130.98	0.044332	3.50	1.36	3.48	1.78
00029__11	3	4.77	125.39	125.99	126.22	126.73	0.044737	3.81	1.25	2.45	1.70
00011__11	2	4.77	117.13	118.42	118.62	119.1	0.040993	3.65	1.31	1.83	1.38
00003__11	1	4.77	115.34	115.98	116.07	116.32	0.023283	2.60	1.83	4.79	1.34

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	5.21	132.18	133.30		133.48	0.008483	1.85	2.82	3.87	0.69
00038PB11	5	5.21	132.06	133.38		133.44	0.001295	1.02	5.10	3.87	0.28
00038PC11	4	5.21	129.86	130.38	130.58	131.04	0.043719	3.59	1.45	3.49	1.78
00029__11	3	5.21	125.39	126.02	126.27	126.81	0.044965	3.92	1.33	2.48	1.71
00011__11	2	5.21	117.13	118.46	118.68	119.18	0.041733	3.75	1.39	1.89	1.39
00003__11	1	5.21	115.34	116.00	116.10	116.37	0.023237	2.67	1.95	4.91	1.35

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	7.81	132.18	133.63		133.82	0.006405	1.92	4.07	3.88	0.60
00038PB11	5	7.81	132.06	133.71		133.79	0.001582	1.23	6.36	3.88	0.31
00038PC11	4	7.81	129.86	130.52	130.79	131.35	0.042125	4.06	1.93	3.57	1.76
00029__11	3	7.81	125.39	126.20	126.52	127.17	0.043554	4.36	1.79	2.63	1.69
00011__11	2	7.81	117.13	118.69	118.97	119.59	0.044158	4.21	1.86	2.24	1.48
00003__11	1	7.81	115.34	116.13	116.26	116.59	0.023188	2.99	2.61	5.49	1.39

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00043__11	6	9.46	132.18	133.82		134.02	0.005805	1.97	4.81	3.89	0.56
00038PB11	5	9.46	132.06	133.90		133.99	0.001727	1.33	7.09	3.89	0.32
00038PC11	4	9.46	129.86	130.60	130.89	131.52	0.040736	4.27	2.22	3.61	1.74
00029__11	3	9.46	125.39	126.31	126.65	127.37	0.042757	4.57	2.07	2.73	1.67
00011__11	2	9.46	117.13	118.81	119.13	119.81	0.045132	4.44	2.13	2.43	1.52
00003__11	1	9.46	115.34	116.20	116.34	116.70	0.023142	3.16	3.00	5.80	1.40

Condizione al contorno di valle: pendenza di moto uniforme pari a 0.02304 valida per tutti i tempi di ritorno.

Torrente Terzona

Analisi idrologica

Modello di Infiltrazione: Metodo intercettazione iniziale e Ks
Modello di Formazione dell'Onda di Piena: Metodo di Nash GIUH

Parametri geomorfologici:

A *[kmq]*	*Ia* *[mm]*	*Ks* *[mm/h]*	*n* *-*	*k* *[h]*
21.65	9.72	2.02	2.76	0.56

Parametri pluviometrici:

A1	*N1*	*M1*	*A*	*N*	*M*
20.493	0.355	0.160	17.964	0.365	0.200

Sintesi dei risultati del modello idrologico:

Durata critica Torrente Terzona

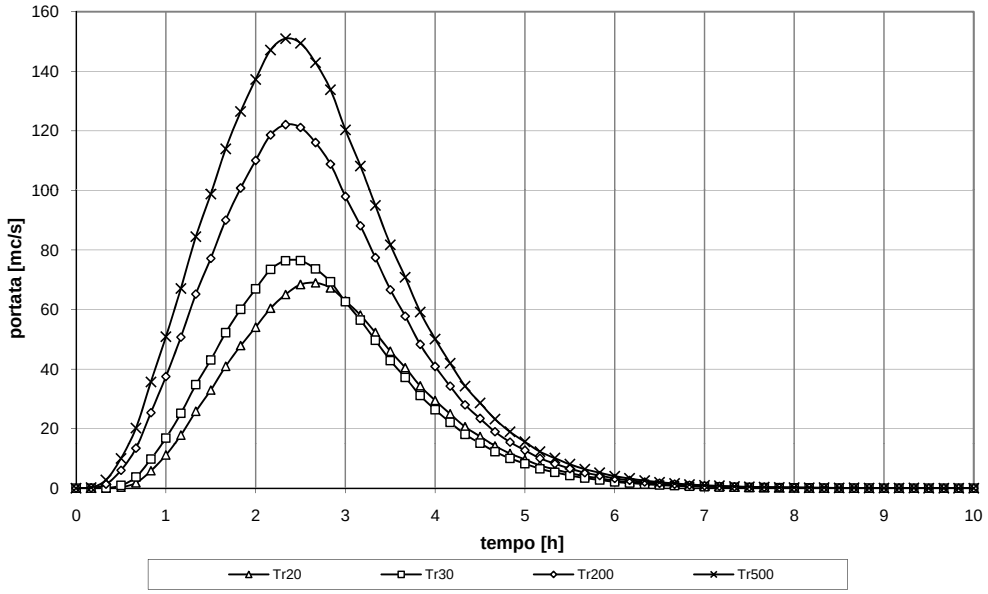
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	2.43	45.25	69.27
30	2.19	47.24	76.96
200	2.19	69.04	122.64
500	2.19	82.93	151.52

Durata critica Torrente Pesa

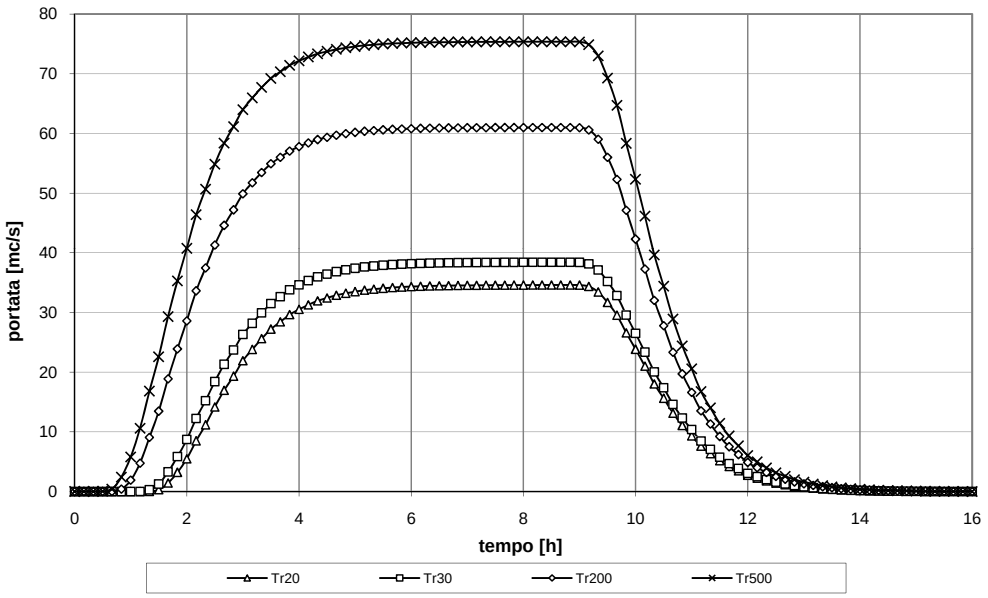
TR *[anni]*	*d* *[h]*	*P* *[mm]*	*Qmax* *[mc/s]*
20	9.17	73.44	34.60
30	9.17	79.64	38.42
200	9.17	116.39	60.99
500	9.17	139.80	75.37

Idrogrammi di piena:

Idrogrammi di piena Torrente Terzona (Durata Critica Torrente Terzona)



Idrogrammi di piena Torrente Terzona (Durata Critica Torrente Pesa)



Risultati della modellistica idraulica (Durata Critica Torrente Terzona)

Condizioni al contorno di valle

Condizione di valle per il Torrente Terzona (Durata Critica Torrente Terzona): Max W.S Elev sezione 01943__06 del Torrente Pesa	
Tr [anni]	W.S. Elev [m slm]
20	125.83
30	125.88
200	126.24
500	126.47

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	68.98	130.08	132.34	132.64	133.54	0.015667	4.86	14.19	10.00	1.30
00031__11	12	68.97	129.26	131.30	131.36	132.10	0.009992	3.96	17.40	12.20	1.06
00028__11	11	68.97	128.89	130.95	131.17	131.94	0.015221	4.42	15.62	12.50	1.26
00022__11	10	68.96	127.93	130.01	130.17	130.85	0.013678	4.08	16.90	14.45	1.20
00017__11	9	68.96	127.47	129.40	129.59	130.38	0.014151	4.37	15.80	11.88	1.21
00015PB11	8	68.96	127.40	129.42	129.00	129.61	0.002668	1.91	36.17	28.64	0.54
00015PC11	7	68.96	127.40	128.99	129.00	129.42	0.010268	2.89	23.82	28.33	1.01
00014BB11	6	68.96	127.45	128.97	128.55	129.19	0.002947	2.06	33.49	26.09	0.58
00014BC11	5	68.96	126.12	127.43	127.38	127.96	0.008136	3.21	21.47	18.07	0.94
00013BB11	4	68.96	126.01	127.45		127.90	0.006287	2.95	23.38	18.22	0.83
00012__11	2	68.96	125.3	127.38	127.53	128.2	0.014039	4	17.22	14.98	1.19
00004__11	1	3	124.2	125.83	124.78	125.83	0.000082	0.28	10.63	10.75	0.09

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	76.43	130.08	132.44	132.77	133.72	0.015850	5.03	15.20	10.24	1.32
00031__11	12	76.42	129.26	131.39	131.47	132.26	0.010183	4.13	18.53	12.32	1.07
00028__11	11	76.43	128.89	131.04	131.28	132.10	0.015304	4.58	16.70	12.63	1.27
00022__11	10	76.43	127.93	130.09	130.28	130.99	0.013669	4.21	18.14	14.76	1.21
00017__11	9	76.42	127.47	129.49	129.70	130.54	0.014515	4.56	16.78	11.98	1.23
00015PB11	8	76.42	127.40	129.52	129.06	129.71	0.002596	1.97	38.88	28.68	0.54
00015PC11	7	76.42	127.40	129.08	129.06	129.51	0.009104	2.90	26.37	28.48	0.96
00014BB11	6	76.81	127.45	129.07	128.63	129.30	0.002879	2.12	36.16	26.32	0.58
00014BC11	5	76.81	126.12	127.51	127.47	128.08	0.008165	3.34	22.99	18.20	0.95
00013BB11	4	76.79	126.01	127.54		128.02	0.006430	3.09	24.89	18.35	0.85
00012__11	2	76.71	125.3	127.46	127.63	128.34	0.014085	4.16	18.45	15.15	1.2
00004__11	1	3	124.2	125.88	124.78	125.88	0.000072	0.27	11.17	11.02	0.09

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	122.08	130.08	132.97	133.48	134.68	0.017040	5.79	21.09	12.07	1.40
00031__11	12	122.06	129.26	131.88	132.08	133.12	0.011358	4.93	24.75	13.23	1.15
00028__11	11	122.06	128.89	131.50	131.86	132.97	0.015738	5.38	22.69	13.33	1.32
00022__11	10	122.05	127.93	130.55	130.81	131.74	0.013462	4.83	25.26	16.42	1.24
00017__11	9	122.04	127.47	129.92	130.31	131.48	0.016361	5.52	22.09	12.48	1.33
00015PB11	8	122.04	127.40	130.01	129.39	130.28	0.002441	2.30	53.12	28.90	0.54
00015PC11	7	122.04	127.40	129.46		130.01	0.007593	3.28	37.26	28.65	0.92
00014BB11	6	122.04	127.45	129.58	128.99	129.89	0.002751	2.44	49.93	28.06	0.58
00014BC11	5	122.04	126.12	127.96	127.92	128.74	0.007986	3.90	31.32	18.93	0.97
00013BB11	4	122.04	126.01	127.97		128.67	0.006856	3.70	32.99	19.03	0.90
00012__11	2	122.04	125.3	127.89	128.2	129.09	0.013992	4.84	25.19	16.04	1.23
00004__11	1	3	124.2	126.24	124.78	126.24	0.00003	0.19	15.51	12.76	0.06

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	150.97	130.08	133.25	133.80	135.16	0.017614	6.12	24.68	13.38	1.44
00031__11	12	150.94	129.26	132.14	132.40	133.59	0.011785	5.34	28.27	13.54	1.18
00028__11	11	150.93	128.89	131.75	132.18	133.45	0.015997	5.78	26.10	13.70	1.34
00022__11	10	150.92	127.93	130.80	131.09	132.13	0.013186	5.12	29.50	17.18	1.25
00017__11	9	150.92	127.47	130.17	130.64	131.99	0.016986	5.98	25.23	12.77	1.36
00015PB11	8	150.91	127.40	130.29	129.58	130.60	0.002380	2.46	61.23	29.02	0.54
00015PC11	7	150.91	127.40	129.70		130.30	0.006690	3.41	44.24	28.76	0.88
00014BB11	6	150.91	127.45	129.87	129.20	130.21	0.002698	2.59	58.21	29.22	0.59
00014BC11	5	150.91	126.12	128.23	128.21	129.10	0.008220	4.13	36.50	20.54	0.99
00013BB11	4	150.91	126.01	128.22		129.03	0.007367	3.98	37.87	20.54	0.94
00012__11	2	150.91	125.3	128.14	128.51	129.5	0.013777	5.16	29.23	16.55	1.24
00004__11	1	2.99	124.2	126.47	124.78	126.47	0.000018	0.16	18.52	13.36	0.04

Risultati della modellistica idraulica (Durata critica Torrente Pesa)

Condizione di valle per il Torrente Terzona (Durata Critica Torrente Pesa): Max W.S Elev sezione 01943__06 del Torrente Pesa	
Tr [anni]	W.S. Elev [m slm]
20	126.14
30	126.26
200	126.86
500	127.18

HEC-RAS Risultati TR20											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	34.55	130.08	131.75	131.91	132.53	0.014217	3.91	8.83	8.15	1.20
00031__11	12	34.55	129.26	130.80	130.78	131.26	0.008988	3.03	11.41	11.53	0.97
00028__11	11	34.55	128.89	130.47	130.59	131.10	0.014845	3.50	9.86	11.38	1.20
00022__11	10	34.55	127.93	129.53	129.62	130.08	0.013886	3.30	10.48	12.56	1.15
00017__11	9	34.55	127.47	128.96	129.01	129.50	0.011865	3.25	10.63	11.37	1.07
00015PB11	8	34.55	127.40	128.91	128.57	129.04	0.003435	1.61	21.48	27.19	0.58
00015PC11	7	34.55	127.40	128.48	128.57	128.91	0.014332	2.91	11.89	18.22	1.15
00014BB11	6	34.55	127.45	128.46	128.16	128.60	0.003326	1.69	20.46	23.88	0.58
00014BC11	5	34.55	126.12	126.98		127.31	0.008821	2.56	13.48	17.34	0.93
00013BB11	4	34.55	126.01	127.01		127.26	0.005879	2.25	15.36	17.53	0.77
00012__11	2	34.55	125.3	126.93	127	127.45	0.014037	3.19	10.82	13.46	1.14
00004__11	1	3.00	124.20	126.14	124.78	126.14	0.000038	0.21	14.25	12.50	0.06

HEC-RAS Risultati TR30											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	38.36	130.08	131.83	132.01	132.66	0.014481	4.05	9.48	8.42	1.22
00031__11	12	38.36	129.26	130.86	130.85	131.37	0.009120	3.16	12.16	11.62	0.98
00028__11	11	38.36	128.89	130.53	130.67	131.20	0.014924	3.63	10.56	11.52	1.21
00022__11	10	38.36	127.93	129.59	129.69	130.18	0.013808	3.40	11.28	12.84	1.16
00017__11	9	38.36	127.47	129.02	129.08	129.61	0.012025	3.39	11.33	11.44	1.09
00015PB11	8	38.36	127.40	128.98	128.62	129.11	0.003345	1.64	23.38	28.12	0.57
00015PC11	7	38.36	127.40	128.55	128.62	128.98	0.014814	2.92	13.15	20.57	1.16
00014BB11	6	38.36	127.45	128.52	128.21	128.68	0.003294	1.74	22.05	24.40	0.58
00014BC11	5	38.36	126.12	127.04		127.40	0.008584	2.64	14.52	17.44	0.92
00013BB11	4	38.36	126.01	127.07		127.35	0.005817	2.33	16.47	17.62	0.77
00012__11	2	38.36	125.3	127	127.08	127.55	0.013629	3.28	11.68	13.58	1.13
00004__11	1	3.00	124.20	126.26	124.78	126.26	0.000029	0.19	15.77	12.81	0.05

HEC-RAS Risultati TR200											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	60.95	130.08	132.22	132.49	133.33	0.015534	4.68	13.03	9.72	1.29
00031__11	12	60.95	129.26	131.20	131.23	131.92	0.009772	3.78	16.14	12.07	1.04
00028__11	11	60.95	128.89	130.85	131.05	131.77	0.015226	4.24	14.39	12.35	1.25
00022__11	10	60.95	127.93	129.91	130.06	130.69	0.013733	3.93	15.51	14.09	1.20
00017__11	9	60.95	127.47	129.32	129.47	130.19	0.013619	4.13	14.74	11.78	1.18
00015PB11	8	60.95	127.40	129.32	128.92	129.49	0.002746	1.84	33.20	28.59	0.54
00015PC11	7	60.95	127.40	128.88	128.92	129.32	0.011596	2.92	20.86	26.89	1.06
00014BB11	6	60.95	127.45	128.86	128.47	129.06	0.003028	1.99	30.68	25.84	0.58
00014BC11	5	60.95	126.12	127.37		127.83	0.007504	2.99	20.36	17.97	0.90
00013BB11	4	60.95	126.01	127.41		127.78	0.005424	2.69	22.65	18.16	0.77
00012__11	2	60.95	125.3	127.35	127.42	128.02	0.011882	3.63	16.78	14.92	1.09
00004__11	1	3.00	124.20	126.86	124.78	126.86	0.000009	0.13	23.93	14.38	0.03

HEC-RAS Risultati TR500											
Sezione	River Sta	Q Total [mc/s]	Min Ch El [m slm]	W.S. Elev [m slm]	Crit. W.S. [m slm]	E.G. Elev [m slm]	E.G. Slope [m/m]	Vel Chnl [m/s]	Flow Area [mq]	Top Width [m]	Froude [-]
00038__11	13	75.33	130.08	132.42	132.75	133.70	0.015831	5.00	15.05	10.21	1.32
00031__11	12	75.33	129.26	131.38	131.46	132.24	0.010160	4.10	18.36	12.31	1.07
00028__11	11	75.33	128.89	131.02	131.26	132.08	0.015297	4.55	16.54	12.61	1.27
00022__11	10	75.33	127.93	130.08	130.26	130.97	0.013679	4.19	17.96	14.71	1.21
00017__11	9	75.33	127.47	129.47	129.69	130.52	0.014466	4.53	16.63	11.96	1.23
00015PB11	8	75.33	127.40	129.50	129.05	129.70	0.002606	1.96	38.49	28.67	0.54
00015PC11	7	75.33	127.40	129.07	129.05	129.49	0.009264	2.90	26.00	28.47	0.97
00014BB11	6	75.66	127.45	129.06	128.62	129.29	0.002889	2.12	35.77	26.29	0.58
00014BC11	5	75.66	126.12	127.56		128.08	0.007040	3.17	23.89	18.28	0.88
00013BB11	4	75.64	126.01	127.62		128.04	0.005228	2.87	26.36	18.48	0.77
00012__11	2	75.57	125.3	127.56	127.62	128.29	0.010859	3.8	19.91	15.35	1.06
00004__11	1	3.00	124.20	127.18	124.78	127.18	0.000005	0.10	28.66	15.21	0.02