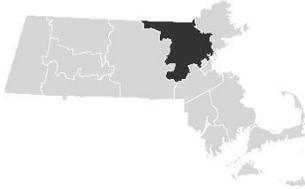


FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 7 OF 15



MIDDLESEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
ACTON, TOWN OF	250176	MARLBOROUGH, CITY OF	250203
ARLINGTON, TOWN OF	250177	MAYNARD, TOWN OF	250204
ASHBY, TOWN OF	250178	MEDFORD, CITY OF	250205
ASHLAND, TOWN OF	250179	MELROSE, CITY OF	250206
AYER, TOWN OF	250180	NATICK, TOWN OF	250207
BEDFORD, TOWN OF	255209	NEWTON, CITY OF	250208
BELMONT, TOWN OF	250182	NORTH READING, TOWN OF	250209
BILLERICA, TOWN OF	250183	PEPPERELL, TOWN OF	250210
BOXBOROUGH, TOWN OF	250184	READING, TOWN OF	250211
BURLINGTON, TOWN OF	250185	SHERBORN, TOWN OF	250212
CAMBRIDGE, CITY OF	250186	SHIRLEY, TOWN OF	250213
CARLISLE, TOWN OF	250187	SOMERVILLE, CITY OF	250214
CHELMSFORD, TOWN OF	250188	STONEHAM, TOWN OF	250215
CONCORD, TOWN OF	250189	STOW, TOWN OF	250216
DRACUT, TOWN OF	250190	SUDBURY, TOWN OF	250217
DUNSTABLE, TOWN OF	250191	TEWKSBURY, TOWN OF	250218
EVERETT, CITY OF	250192	TOWNSEND, TOWN OF	250219
FRAMINGHAM, TOWN OF	250193	TYNGSBOROUGH, TOWN OF	250220
GROTON, TOWN OF	250194	WAKEFIELD, TOWN OF	250221
HOLLISTON, TOWN OF	250195	WALTHAM, CITY OF	250222
HOPKINTON, TOWN OF	250196	WATERTOWN, TOWN OF	250223
HUDSON, TOWN OF	250197	WAYLAND, TOWN OF	250224
LEXINGTON, TOWN OF	250198	WESTFORD, TOWN OF	250225
LINCOLN, TOWN OF	250199	WESTON, TOWN OF	250226
LITTLETON, TOWN OF	250200	WILMINGTON, TOWN OF	250227
LOWELL, CITY OF	250201	WINCHESTER, TOWN OF	250228
MALDEN, CITY OF	250202	WOBURN, CITY OF	250229

REVISED:

REVISED
PRELIMINARY
06/08/2023



FEMA

FLOOD INSURANCE STUDY NUMBER
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Published Separately

Flood Insurance Rate Map (FIRM)

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	100	31 ²	98	3.3	35.7	35.7	35.7	0.0
B	320	53	208	3.0	37.0	37.0	37.0	0.0
C	440	93	365	2.2	38.4	38.4	38.4	0.0
D	530	41	225	2.4	38.5	38.5	38.5	0.0
E	620	21	73	7.5	38.5	38.5	38.5	0.0
F	770	32	108	5.0	39.7	39.7	39.8	0.1
G	1,430	32	251	2.0	46.7	46.7	46.7	0.0
H	2,140	84	312	2.2	47.7	47.7	47.8	0.1
I	2,730	23	93	5.2	49.1	49.1	49.2	0.1
J	2,860	23	115	4.2	50.4	50.4	50.4	0.0
K	3,130	113 ²	279	1.8	53.4	53.4	53.4	0.0
L	3,370	280	563	0.9	53.6	53.6	53.6	0.0
M	3,940	30	82	5.7	56.8	56.8	56.8	0.0

¹Feet above confluence with Aberjona River

²The measured top width on the FIRM may differ due to the effects of ineffective flow, the exclusion of small pocket areas due to map scale limitations, or is estimated due to HEC-RAS modeling limitations

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: SWEETWATER BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	525	30	73	3.4	159.6	155.5 ²	155.7	0.2
B	586	30	107	2.3	159.6	156.6 ²	156.9	0.3
C	1,786	17	135	1.8	163.4	163.4	163.9	0.5
D	1,836	40	261	1.0	163.4	163.4	164.0	0.6
E	2,936	26	35	7.1	174.5	174.5	174.5	0.0
F	4,236	40	128	2.0	193.1	193.1	193.8	0.7
G	4,285	40	167	1.5	193.1	193.1	193.8	0.7
H	5,126	30	104	1.8	198.7	198.7	198.9	0.2
I	5,176	30	177	1.1	198.7	198.7	198.9	0.2
J	7,106	30	92	2.1	198.7	198.7	199.1	0.4
K	7,626	*	13	8.4	204.2	204.2	204.2	0.0
L	8,146	*	26	4.2	208.9	208.9	208.9	0.0
M	8,266	*	19	5.9	212.3	212.3	212.7	0.4
N	8,316	30	88	1.2	213.6	213.6	213.6	0.0
O	8,676	*	21	5.3	216.8	216.8	216.8	0.0
P	9,170	*	29	3.8	218.8	218.8	218.9	0.1
Q	9,226	30	53	2.1	219.0	219.0	219.1	0.1
R	10,086	30	140	0.8	227.3	227.3	227.5	0.2
S	10,116	30	118	0.9	227.3	227.3	227.5	0.2

¹Feet above confluence with Stony Brook 2

²Elevation computed without consideration of backwater effects from Stony Brook 2

*Floodway coincident with channel banks

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TADMUCK BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	850	150	684	0.3	199.1	199.1	199.1	0.0
B	3,040	14	60	3.8	199.1	199.1	199.2	0.1
C	3,090	100	262	0.9	199.4	199.4	199.5	0.1
D	4,420	78	90	2.0	199.4	199.4	199.5	0.1

¹Feet above confluence with Beaver Brook 2

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TADMUCK SWAMP BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	16	140	188	0.8	179.4	174.6 ²	175.2	0.6
B	143	58	90	1.7	179.4	174.7 ²	175.3	0.6
C	259	62	104	1.5	179.4	175.2 ²	175.5	0.3
D	359	126	170	0.9	179.4	175.5 ²	175.6	0.1
E	1,151	50	145	1.1	179.4	176.0 ²	176.1	0.1

¹Feet above confluence with Assabet River

²Elevation computed without consideration of backwater effects from Assabet River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TAYLOR BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	80	260	690	0.2	149.8	145.8 ²	146.7	1.0
B	230	30	100	1.0	149.8	145.8 ²	146.7	1.0
C	355	30	80	1.1	149.8	145.9 ²	146.7	0.9
D	440	50	260	0.4	149.8	148.7 ²	149.6	1.0
E	1,905	80	30	2.9	149.8	149.6 ²	149.6	0.1

¹Feet above confluence with Coles Brook

²Elevation computed without consideration of backwater effects from Coles Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY 1 TO COLES BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	623	15	36	4.0	120.3	118.0 ²	118.9	1.0
B	1,253	8	29	5.0	124.1	124.1	124.6	0.5

¹Feet above confluence with Sudbury River

²Elevation computed without consideration of backwater effects from Sudbury River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY 1 TO SUDBURY RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	770	77	473	0.2	125.0	122.6 ²	123.0	0.4
B	1,270	30	24	4.2	125.9	125.9	126.2	0.3
C	1,420	120	1,066	0.1	126.2	126.2	126.7	0.5
D	2,720	10	31	3.2	128.6	128.6	128.7	0.1

¹Feet above confluence with Assabet River

²Elevation computed without consideration of backwater effects from Assabet River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY 2 TO ASSABET RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	500	90	110	1.8	149.8	147.1 ²	147.6	0.5
B	875	20	30	7.7	151.7	151.7	151.7	0.0
C	1,000	40	160	1.2	154.0	154.0	154.6	0.6
D	1,815	10	20	8.7	159.9	159.9	160.1	0.2
E	2,715	20	40	4.9	185.1	185.1	185.2	0.1

¹Feet above confluence with Tributary 1 to Coles Brook

²Elevation computed without consideration of backwater effects from Coles Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY 2 TO TRIBUTARY 1 TO COLES BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	53	32	156	1.5	178.7	178.7	178.7	0.0
B	845	22	111	2.2	178.8	178.8	179.0	0.2
C	1,109	23	51	4.7	179.9	179.9	180.4	0.5
D	1,639	25	55	4.4	183.4	183.4	184.2	0.8
E	2,429	67	178	1.3	184.5	184.5	186.1	0.6

¹Feet above confluence with Bogle Brook 2

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY 3 TO BOGLE BROOK 2

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	106	25	39	4.4	157.9	157.9	157.9	0.0
B	475	12	23	7.4	161.6	161.6	161.6	0.0
C	634	10	26	6.5	163.3	163.3	163.8	0.5
D	1,109	23	46	3.7	168.7	168.7	169.7	1.0
E	1,531	30	43	4.0	172.3	172.3	172.5	0.2
F	1,901	28	57	3.0	173.6	173.6	173.7	0.1
G	2,165	16	32	5.3	174.8	174.8	175.0	0.2
H	2,904	75	67	2.5	179.6	179.6	179.7	0.1
I	3,590	35	38	4.5	184.8	184.8	184.8	0.0

¹Feet above confluence with Bogle Brook 2

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY 4 TO BOGLE BROOK 2

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	434	20	66	3.1	147.3	144.8 ²	145.7	0.9
B	1,172	29	88	2.0	147.3	145.8 ²	146.5	0.7
C	2,054	21	56	3.3	148.7	148.7	149.4	0.7

¹Feet above confluence with Course Brook

²Elevation computed without consideration of backwater effects from Course Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY A TO COURSE BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	3,690	30	122	1.9	293.5	293.4 ²	293.5	0.1
B	4,770	30	107	2.1	293.7	293.7	294.2	0.5

¹Feet above confluence with Squannacook River

²Elevation computed without consideration of backwater effects from Squannacook River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY A TO SQUANNACOOK RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	900	8	9	5.9	295.6	295.6	295.6	0.0
B	1,590	10	17	3.0	301.5	301.5	301.6	0.1

¹Feet above confluence with Squannacook River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY B TO SQUANNACOOK RIVER

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,288	200	580	1.3	126.5	122.5 ²	123.2	0.7
B	3,849	20	58	1.6	140.0	140.0	140.0	0.0
C	4,715	40	233	0.4	145.6	145.6	145.7	0.1

¹Feet above confluence with Vine Brook

²Elevation computed without consideration of backwater effects from Vine Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY B TO VINE BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	935	100	246	1.5	138.2	134.0 ²	134.8	0.8
B	1,357	20	55	6.5	139.7	139.7	139.9	0.2
C	1,848	50	255	1.4	144.6	144.6	144.9	0.3
D	2,503	50	231	1.6	144.8	144.8	145.5	0.7
E	2,825	40	94	4.9	147.3	147.3	147.5	0.2
F	3,041	60	318	1.5	155.3	155.3	155.9	0.6
G	3,775	60	312	1.5	155.7	155.7	156.4	0.7
H	4,092	40	169	2.7	155.8	155.8	156.7	0.9

¹Feet above confluence with Vine Brook

²Elevation computed without consideration of backwater effects from Vine Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY C TO VINE BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	150	80	489	0.4	90.1	90.1	91.1	1.0
B	2,260	40	185	0.9	102.7	102.7	103.5	0.8
C	3,260	20	67	2.6	104.9	104.9	105.3	0.4

¹Feet above confluence with Beaver Brook 3

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY TO BEAVER BROOK 3

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,595	103	392	0.3	180.5	178.1 ²	179.1	1.0
B	1,980	88	307	0.4	180.5	178.1 ²	179.1	1.0
C	2,920	16	20	6.3	198.7	198.7	198.7	0.0
D	3,500	16	28	4.5	211.3	211.3	211.7	0.4
E	3,795	16	19	6.5	224.2	224.2	224.3	0.1
F	4,060	17	32	3.9	228.7	228.7	229.4	0.7
G	4,770	22	54	2.3	232.4	232.4	233.2	0.8

¹Feet above confluence with Cold Spring Brook

²Elevation computed without consideration of backwater effects from Sudbury River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY TO COLD SPRING BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,320	357	1,786	0.1	78.6	73.8 ²	74.8	1.0
B	2,387	108	358	0.4	78.6	73.8 ²	74.8	1.0
C	3,913	78	306	0.4	80.6	80.6	81.2	0.6
D	4,410	60	278	0.5	80.6	80.6	81.3	0.7

¹Feet above confluence with Martins Brook

²Elevation computed without consideration of backwater effects from Martins Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY TO MARTINS BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	139	297	0.4	119.4	119.4	120.4	1.0
B	729	66	156	0.7	120.0	120.0	121.0	1.0
C	1,199	88	207	0.5	120.5	120.5	121.5	1.0
D	1,346	10	38	2.8	121.1	121.1	122.1	1.0
E	1,874	110	298	0.4	121.5	121.5	122.5	1.0
F	2,344	101	188	0.6	121.9	121.9	122.9	1.0
G	2,645	34	108	1.0	122.3	122.3	123.3	1.0
H	3,643	141	333	0.2	122.5	122.5	123.5	1.0
I	4,921	22	38	1.3	125.5	125.5	126.5	1.0
J	5,290	4	11	4.5	132.9	132.9	133.4	0.5
K	5,692	4	10	5.0	148.0	148.0	148.3	0.3
L	5,797	4	13	3.8	151.8	151.8	151.9	0.1
M	5,882	3	8	6.3	152.2	152.2	152.5	0.3
N	6,130	4	29	1.7	156.0	156.0	156.4	0.4
O	6,579	11	61	0.8	156.0	156.0	157.0	1.0
P	6,991	154	444	0.4	156.0	156.0	157.0	1.0

¹Feet above confluence with Mill Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY TO MILL BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	220	150	1,398	0.1	227.1	227.1	228.0	0.9
B	1,230	160	878	0.2	227.5	227.5	228.1	0.6
C	2,420	340	1,976	0.1	228.3	228.3	228.9	0.6
D	3,770	245	1,445	0.1	228.3	228.3	228.9	0.6
E	5,210	165	805	0.2	228.3	228.3	228.9	0.6
F	7,070	930	6,459	0.0	228.3	228.3	228.9	0.6
G	8,900	1,820	16,104	0.0	228.5	228.5	229.1	0.6
H	9,650	230	1,423	0.0	228.5	228.5	229.1	0.6
I	10,000	145	716	0.1	228.5	228.5	229.1	0.6
J	10,600	148	486	0.1	228.5	228.5	229.1	0.6
K	11,250	600	780	0.1	228.5	228.5	229.1	0.6

¹Feet above confluence with Nonacoicus Brook 1

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY TO NONACOICUS BROOK 1/LONG POND BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	940	110	311	0.5	159.4	159.4	160.3	0.9
B	2,590	35	85	1.6	163.0	163.0	163.7	0.7

¹Feet above limit of detailed study, approximately 1,155 feet below Greenwood Street

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRIBUTARY TO WAUSHAKUM POND

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,200	26	39	4.6	101.9	101.9	102.2	0.3
B	3,140	32	191	0.9	120.4	120.4	120.7	0.3
C	5,300	67	72	2.5	128.8	128.8	128.8	0.0
D	5,850	25	97	1.9	133.0	133.0	133.1	0.1
E	8,930	20	80	2.2	142.8	142.8	143.1	0.3

¹Feet above confluence with Richardson Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TROUT BROOK 1

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,200	6	8	6.7	239.5	239.5	239.6	0.1
B	3,100	5	10	5.5	268.8	268.8	269.4	0.6
C	3,360	9	6	3.5	270.5	270.5	270.8	0.3

¹Feet above confluence with Nashua River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TROUT BROOK 2

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	544	20	84	4.2	56.8	47.9 ²	47.9	0.0
B	1,056	20	57	6.2	56.8	49.2 ²	49.5	0.3
C	2,138	20	56	6.3	69.4	69.4	69.7	0.3
D	2,640	25	165	2.2	79.2	79.2	79.2	0.0
E	3,437	20	90	4.0	81.1	81.1	81.3	0.2
F	4,071	15	80	3.5	93.8	93.8	93.8	0.0
G	4,541	20	102	2.8	93.9	93.9	94.3	0.4
H	5,834	30	88	3.2	101.1	101.1	101.1	0.0
I	7,075	30	136	2.1	103.8	103.8	104.1	0.3
J	9,462	60	268	1.1	103.8	103.8	104.7	0.9
K	11,088	105	354	0.6	103.9	103.9	104.9	1.0
L	12,038	100	250	0.8	104.1	104.1	105.1	1.0

¹Feet above confluence with Merrimack River

²Elevation computed without consideration of backwater effects from Merrimack River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRULL BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,680	40	95	1.5	103.9	103.9	104.9	1.0
B	2,380	30	150	0.9	110.1	110.1	110.9	0.8
C	2,740	40	157	0.9	110.1	110.1	110.9	0.8
D	3,060	40	139	1.0	110.1	110.1	111.0	0.9
E	6,320	80	435	0.2	125.5	125.5	126.4	0.9
F	7,400	93	524	0.1	125.5	125.5	126.4	0.9
G	7,550	46	137	0.5	126.7	126.7	127.6	0.9
H	8,470	140	859	0.1	129.0	129.0	129.0	0.0

¹Feet above confluence with Trull Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: TRULL BROOK TRIBUTARY

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	520	71	131	1.4	214.9	214.9	215.6	0.7
B	3,710	115	367	0.5	221.5	221.5	222.3	0.8
C	5,695	58	79	2.4	223.5	223.5	224.1	0.6

¹Feet above limit of detailed study, approximately 2,735 feet below Radian Road

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: UNKETY BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	472	6	15	9.1	190.4	190.4	190.7	0.3
B	950	9	29	4.7	201.8	201.8	202.7	0.9
C	1,287	17	50	2.7	207.7	207.7	208.4	0.7
D	1,840	30	60	2.2	215.5	215.5	216.5	1.0
E	2,920	20	40	3.2	226.3	226.3	227.1	0.8
F	3,412	5	20	3.1	231.8	231.8	232.3	0.5
G	3,905	19	46	1.3	232.9	232.9	233.7	0.8
H	4,478	49	413	0.1	240.5	240.5	241.2	0.7

¹Feet above confluence with Nashua River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: VARNUM BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	150	65	140	6.2	101.8	96.5 ²	96.5	0.0
B	2,602	90	347	2.5	101.8	101.3 ²	101.5	0.2
C	2,929	36	144	6.0	107.8	107.8	107.9	0.1
D	3,045	93	899	1.0	123.5	123.5	123.5	0.0
E	3,055	103	1,030	0.8	123.5	123.5	123.5	0.0
F	3,294	121	1,500	0.6	123.5	123.5	123.5	0.0
G	3,556	204	2,652	0.3	123.5	123.5	123.5	0.0
H	3,723	250	2,210	0.4	123.5	123.5	123.5	0.0
I	4,636	200	1,716	0.5	124.4	124.4	124.4	0.0
J	4,930	81	747	1.2	125.5	125.5	125.6	0.1
K	5,047	85	708	1.2	125.6	125.6	125.6	0.0
L	5,217	59	507	1.7	125.6	125.6	125.6	0.0
M	5,247	59	501	1.7	125.6	125.6	125.6	0.0
N	5,255	59	507	1.7	125.6	125.6	125.6	0.0
O	5,393	301	2,317	0.4	125.6	125.6	125.7	0.1
P	6,008	284	2,472	0.4	125.6	125.6	125.7	0.1
Q	6,511	237	2,103	0.4	125.6	125.6	125.7	0.1
R	7,019	175	1,338	0.6	125.6	125.6	125.7	0.1
S	7,831	270	1,581	0.5	125.6	125.6	125.7	0.1
T	9,726	321	1,775	0.5	125.6	125.6	125.8	0.2
U	10,119	221	1,105	0.8	126.5	126.5	126.7	0.2

¹Feet above confluence with Shawsheen River

²Elevation computed without consideration of backwater effects from Shawsheen River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: VINE BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
V	10,729	200	1,269	0.7	126.5	126.5	126.7	0.2
W	11,022	300	2,182	0.4	126.5	126.5	126.8	0.3
X	12,440	300	2,019	0.4	126.5	126.5	126.8	0.3
Y	15,184	300	1,573	0.4	126.5	126.5	126.9	0.4
Z	16,001	300	1,612	0.4	126.5	126.5	126.9	0.4
AA	16,453	300	1,598	0.4	126.5	126.5	126.9	0.4
AB	17,830	329	1,050	0.6	126.5	126.5	127.0	0.5
AC	18,582	48	324	2.0	132.9	132.9	132.9	0.0
AD	19,511	53	308	2.1	133.1	133.1	133.1	0.0
AE	19,904	41	285	2.3	133.9	133.9	133.9	0.0
AF	20,969	43	218	2.5	134.3	134.3	134.3	0.0
AG	22,973	53	233	2.4	135.5	135.5	135.5	0.0
AH	23,649	70	267	2.1	135.9	135.9	135.9	0.0
AI	24,381	115	701	0.8	138.3	138.3	138.3	0.0
AJ	24,672	107	556	1.0	138.3	138.3	138.3	0.0
AK	24,749	59	302	1.8	138.3	138.3	138.3	0.0
AL	25,043	69	381	1.4	143.6	143.6	143.9	0.3
AM	25,301	69	357	1.5	152.4	152.4	152.6	0.2
AN	25,337	84	373	1.5	152.4	152.4	152.6	0.2
AO	25,361	84	374	1.5	152.4	152.4	152.6	0.2
AP	26,439	185	427	1.3	152.9	152.9	153.2	0.3

¹Feet above confluence with Shawsheen River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: VINE BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AQ	27,060	159	295	1.9	153.6	153.6	154.6	1.0
AR	27,226	86	278	2.0	156.6	156.6	157.4	0.8
AS	27,279	114	324	1.7	156.6	156.6	157.4	0.8
AT	27,303	89	250	2.2	156.6	156.6	157.4	0.8
AU	27,984	302	2,802	0.1	179.3	179.3	179.4	0.1
AV	27,989	320	2,832	0.1	179.3	179.3	179.4	0.1
AW	28,263	193	3,292	0.1	179.4	179.4	179.4	0.0
AX	28,589	191	3,110	0.1	179.4	179.4	179.4	0.0
AY	29,140	183	2,916	0.1	179.4	179.4	179.4	0.0
AZ	29,582	177	2,425	0.2	179.4	179.4	179.4	0.0
BA	29,625	140	1,242	0.3	179.4	179.4	179.4	0.0
BB	29,673	184	1,569	0.3	179.4	179.4	179.4	0.0
BC	29,854	207	2,651	0.2	179.4	179.4	179.4	0.0
BD	30,181	50	593	0.7	179.4	179.4	179.4	0.0
BE	30,770	66	709	0.6	179.4	179.4	179.4	0.0
BF	31,046	46	454	0.9	179.4	179.4	179.5	0.1
BG	31,299	47	412	1.0	179.4	179.4	179.5	0.1
BH	31,606	45	402	1.0	180.9	180.9	181.1	0.2
BI	32,177	49	322	1.1	181.0	181.0	181.1	0.1
BJ	32,515	55	419	0.8	181.3	181.3	181.5	0.2
BK	33,300	54	363	0.9	181.4	181.4	181.6	0.2

¹Feet above confluence with Shawsheen River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: VINE BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BL	33,555	58	361	1.0	181.6	181.6	181.8	0.2
BM	35,210	54	293	1.2	181.7	181.7	181.9	0.2
BN	35,502	62	325	1.1	181.8	181.8	182.0	0.2
BO	35,732	47	246	1.4	181.8	181.8	182.0	0.2
BP	36,130	46	248	1.4	182.3	182.3	182.5	0.2
BQ	36,678	45	247	1.4	182.4	182.4	182.6	0.2
BR	37,014	48	217	1.6	182.5	182.5	182.7	0.2

¹Feet above confluence with Shawsheen River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: VINE BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,030	40	155	0.6	218.0	218.0	218.0	0.0
B	3,670	10	22	4.5	223.8	223.8	224.2	0.4
C	6,045	12	28	3.6	239.2	239.2	240.2	1.0

¹Feet above confluence with Nashua River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WALKER BROOK 1

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,050	500	3,484	1.0	309.1	309.1	309.8	0.7
B	4,800	1,150	8,152	0.2	309.2	309.2	309.9	0.7
C	6,400	1,205	7,426	0.2	309.2	309.2	309.9	0.7
D	9,850	20	69	9.2	319.5	319.5	319.8	0.3
E	11,440	40	214	2.9	356.6	356.6	356.6	0.0
F	12,600	15	57	11.1	385.2	385.2	385.6	0.4
G	14,000	50	189	3.3	406.5	406.5	406.9	0.4
H	15,900	45	116	5.4	416.6	416.6	416.7	0.1

¹Feet above confluence with Squannacook River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WALKER BROOK 2

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	600	37	64	3.0	256.7	245.4 ²	246.3	0.9
B	1,550	10	27	7.1	259.0	259.0	259.5	0.5
C	2,460	75	434	0.4	284.3	284.3	284.3	0.0
D	3,640	7	31	6.1	299.9	299.9	300.1	0.2
E	3,950	78	225	0.8	307.0	307.0	307.9	0.9
F	4,500	8	21	9.2	314.6	314.6	315.0	0.4

¹Feet above confluence with Sudbury River Reservoir

²Elevation computed without consideration of backwater effects from Sudbury River Reservoir

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WALKER BROOK 3

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	660	20	66	4.2	80.4	79.7 ²	80.2	0.5
B	681	10	39	7.2	80.4	79.8 ²	80.2	0.4
C	1,399	16	109	2.6	83.4	83.4	83.5	0.1
D	1,663	14	100	2.8	83.5	83.5	83.7	0.2
E	1,927	14	104	2.7	83.7	83.7	83.9	0.2
F	2,777	12	92	3.0	83.8	83.8	84.4	0.6
G	2,820	34	240	1.0	83.8	83.8	84.6	0.8
H	3,369	36	243	0.8	83.8	83.8	84.6	0.8
I	3,865	39	238	0.8	83.8	83.8	84.6	0.8
J	4,704	38	228	0.9	83.9	83.9	84.6	0.7
K	4,757	28	158	1.1	83.9	83.9	84.6	0.7
L	5,264	28	153	1.2	83.9	83.9	84.7	0.8
M	5,607	28	161	1.1	84.3	84.3	85.1	0.8
N	6,753	10	67	2.7	85.6	85.6	85.7	0.1
O	6,933	12	86	2.1	85.6	85.6	85.8	0.2
P	7,851	10	61	3.0	85.7	85.7	86.3	0.6

¹Feet above limit of detailed study, approximately 565 feet below State Route 129 Eastbound

²Elevation computed without consideration of backwater effects from Saugus River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WALKERS BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	590	31	77	1.9	6.8	5.3 ³	5.6	0.3
B	1,450	27 ²	64	2.6	6.9	6.5 ³	6.5	0.0
C	3,770	23 ²	90	1.1	7.7	7.7	7.7	0.0
D	5,730	10 ²	17	6.3	15.1	15.1	15.1	0.0
E	6,190	32	39	2.6	17.9	17.9	18.0	0.1
F	6,460	16	24	4.1	20.2	20.2	20.3	0.1

¹Feet above confluence with Alewife Brook

²The measured top width on the FIRM may differ due to the effects of ineffective flow, the exclusion of small pocket areas due to map scale limitations, or is estimated due to HEC-RAS modeling limitations

³Elevation computed without consideration of backwater effects from Alewife Brook (Little River)

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WELLINGTON BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	74	34	265	0.8	44.1	44.1	44.1	0.0
B	174	31	184	1.1	44.1	44.1	44.1	0.0
C	269	21	137	1.5	44.1	44.1	44.1	0.0
D ²	570	9	49	4.1	46.8	46.8	46.8	0.0
E ²	618	6	24	9.9	46.8	46.8	46.8	0.0
F ²	866	49	43	6.0	50.2	50.2	50.2	0.0
G ²	940	98	69	5.8	52.1	52.1	52.1	0.0
H ²	1,035	31	33	6.1	59.8	59.8	59.8	0.0
I ²	1,336	35	58	4.0	62.4	62.4	62.4	0.0
J	1,536	40	43	7.1	66.4	66.4	66.4	0.0
K	1,563	7	20	10.0	66.9	66.9	66.9	0.0
L	1,764	35	106	1.9	71.6	71.6	71.6	0.0
M	1,811	20	52	3.8	71.6	71.6	71.6	0.0
N	1,938	22	53	3.8	71.8	71.8	71.8	0.0
O	2,017	20	76	2.6	73.9	73.9	73.9	0.0
P	2,265	39	98	2.0	73.9	73.9	73.9	0.0
Q	2,513	25	70	2.8	74.0	74.0	74.0	0.0
R	2,714	125	101	2.0	75.3	75.3	75.3	0.0
S	2,915	144	146	1.4	75.4	75.4	75.4	0.0
T	3,168	111	132	1.5	75.4	75.4	75.4	0.0
U	3,448	15	54	3.7	75.4	75.4	75.4	0.0

¹Feet above confluence with Chester Brook

²Cross section not illustrated on the FIRM

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WEST CHESTER BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
V	3,501	55	201	1.0	76.7	76.7	77.6	0.9
W	3,622	75	261	0.8	76.7	76.7	77.6	0.9
X	3,670	39	192	1.0	76.7	76.7	77.6	0.9
Y	4,044	50	82	2.4	77.0	77.0	77.7	0.7
Z	4,240	26	65	3.1	77.9	77.9	78.1	0.2
AA	4,261	39	133	1.5	80.8	80.8	81.2	0.4
AB	4,319	39	408	0.5	80.8	80.8	81.2	0.4
AC	4,625	26	79	2.5	80.8	80.8	81.2	0.4
AD	4,699	27	105	1.9	84.1	84.1	84.2	0.1
AE	4,800	50	185	1.1	87.0	87.0	87.0	0.0
AF	5,011	20	70	2.8	93.3	93.3	93.5	0.2
AG	5,306	14	26	7.8	102.9	102.9	102.9	0.0
AH	5,570	32	34	5.9	114.1	114.1	114.1	0.0

¹Feet above confluence with Chester Brook

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WEST CHESTER BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,950	726	3,691	0.3	280.0	280.0	281.0	1.0
B	2,870	898	6,240	0.2	282.5	282.5	283.5	1.0
C	4,600	415	3,040	0.4	283.1	283.1	284.1	1.0
D	5,750	158	1,069	1.1	283.5	283.5	284.5	1.0
E	8,870	242	1,482	0.8	284.0	284.0	285.0	1.0
F	10,770	37	124	9.8	284.6	284.6	285.0	0.4
G	12,870	110	599	2.0	288.8	288.8	289.7	0.9
H	13,790	112	638	1.9	289.3	289.3	290.1	0.8
I	14,760	140	388	3.1	290.0	290.0	290.7	0.7
J	15,600	185	685	1.8	291.3	291.3	292.2	0.9
K	17,100	104	386	3.1	293.2	293.2	294.2	1.0

¹Feet above confluence with Sudbury River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WHITEHALL BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,700	150	622	4.7	309.2	309.2	309.8	0.6
B	3,700	560	633	4.6	329.5	329.5	329.5	0.0
C	4,900	70	304	9.6	345.9	345.9	346.1	0.2

¹Feet above confluence with Walker Brook 2

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WILLARD BROOK

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY ²	WITHOUT FLOODWAY ³	WITH FLOODWAY ³	INCREASE
A	200	20	145	3.1	181.3	181.3	181.6	0.3
B	695	25	163	2.8	181.3	181.3	181.9	0.6
C	1,002	25	137	3.3	181.5	181.4	182.2	0.8
D	1,175	8	47	7.3	181.5	181.4	182.2	0.8
E	1,332	25	194	1.8	184.6	184.2	184.6	0.4
F	1,408	20	156	2.2	184.6	184.2	184.7	0.5
G	1,571	30	182	1.4	184.6	184.3	185.1	0.8
H	1,754	25	189	1.3	184.7	184.3	185.1	0.8
I	1,910	25	178	0.4	184.7	184.3	185.3	1.0
J	1,990	25	158	0.4	184.7	184.3	185.3	1.0
K	2,114	25	105	0.7	184.7	184.5	185.4	0.9
L	2,326	25	171	0.4	184.7	184.6	185.4	0.8
M	2,579	30	121	0.6	184.7	184.6	185.4	0.8
N	2,842	30	248	0.3	184.7	184.6	185.5	0.9
O	3,081	30	239	0.3	184.7	184.6	185.5	0.9
P	3,252	18	73	1.0	184.7	184.7	185.5	0.8
Q	3,441	25	96	0.7	184.7	184.7	185.6	0.9
R	4,285	30	182	0.4	184.7	184.7	185.6	0.9
S	4,450	30	179	0.4	184.7	184.7	185.6	0.9
T	4,640	30	858	0.1	184.7	184.7	185.6	0.9

¹Feet above Linden Pond Dam

²Elevations computed using unsteady flow analysis

³Elevations computed using steady flow analysis

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WINTHROP CANAL

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/ SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	4,000	155	617	2.6	259.0	259.0	259.9	0.9
B	5,350	181	769	2.1	263.5	263.5	264.3	0.8
C	6,600	220	1,226	0.2	268.4	268.4	268.5	0.1
D	7,200	90	485	0.6	268.4	268.4	268.5	0.1
E	9,350	34	68	4.1	270.8	270.8	271.4	0.6
F	11,200	21	41	6.9	286.5	286.5	286.9	0.4
G	12,900	21	38	7.3	311.5	311.5	311.9	0.4
H	13,500	20	39	7.2	323.8	323.8	324.5	0.7

¹Feet above confluence with Squannacook River

TABLE 23	FEDERAL EMERGENCY MANAGEMENT AGENCY MIDDLESEX COUNTY, MA (ALL JURISDICTIONS)	FLOODWAY DATA
		FLOODING SOURCE: WITCH BROOK

Table 24: Flood Hazard and Non-Encroachment Data for Selected Streams

[Not Applicable to this Flood Risk Project]

6.4 Coastal Flood Hazard Mapping

Flood insurance zones and BFEs including the wave effects were identified on each transect based on the results from the onshore wave hazard analyses. Between transects, elevations were interpolated using topographic maps, land-use and land-cover data, and knowledge of coastal flood processes to determine the aerial extent of flooding. Sources for topographic data are shown in Table 22.

Zone VE is subdivided into elevation zones and BFEs are provided on the FIRM.

The limit of Zone VE shown on the FIRM is defined as the farthest inland extent of any of these criteria (determined for the 1% annual chance flood condition):

- The *primary frontal dune zone* is defined in 44 CFR Section 59.1 of the NFIP regulations. The primary frontal dune represents a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes that occur immediately landward and adjacent to the beach. The primary frontal dune zone is subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune zone occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.
- The *wave runup zone* occurs where the (eroded) ground profile is 3.0 feet or more below the 2-percent wave runup elevation.
- The *wave overtopping splash zone* is the area landward of the crest of an overtopped barrier, in cases where the potential 2-percent wave runup exceeds the barrier crest elevation by 3.0 feet or more.
- The *breaking wave height zone* occurs where 3-foot or greater wave heights could occur (this is the area where the wave crest profile is 2.1 feet or more above the total stillwater elevation).
- The *high-velocity flow zone* is landward of the overtopping splash zone (or area on a sloping beach or other shore type), where the product of depth of flow times the flow velocity squared (hv^2) is greater than or equal to $200 \text{ ft}^3/\text{sec}^2$. This zone may only be used on the Pacific Coast.

The SFHA boundary indicates the limit of SFHAs shown on the FIRM as either “V” zones or “A” zones.

Table 25 indicates the coastal analyses used for floodplain mapping and the criteria used to determine the inland limit of the open-coast Zone VE and the SFHA boundary at each transect.

Table 25: Summary of Coastal Transect Mapping Considerations

[Not Applicable to this Flood Risk Project]

A LiMWA boundary has also been added in coastal areas subject to wave action for use by local communities in safe rebuilding practices. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave.

6.5 FIRM Revisions

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 30, “Map Repositories”).

6.5.1 Letters of Map Amendment

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA. A LOMA cannot be issued for properties located on the PFD (primary frontal dune).

To obtain an application for a LOMA, visit www.fema.gov/floodplain-management/letter-map-amendment-loma and download the form “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill”. Visit the “Flood Map-Related Fees” section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at www.fema.gov/online-tutorials.

For more information about how to apply for a LOMA, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

6.5.2 Letters of Map Revision Based on Fill

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA’s determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting www.fema.gov/floodplain-management/letter-map-amendment-loma.

[loma](#) for the “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill” or by calling the FEMA Mapping and Insurance eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the “Flood Map-Related Fees” section.

A tutorial for LOMR-F is available at www.fema.gov/online-tutorials.

6.5.3 Letters of Map Revision

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/mt-2-application-forms-and-instructions and download the form “MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision”. Visit the “Flood Map-Related Fees” section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Mapping and Insurance eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the Middlesex County FIRM are listed in Table 26. Please note that this table only includes LOMCs that have been issued on the FIRM panels updated by this map revision. For all other areas within this county, users should be aware that revisions to the FIS Report made by prior LOMRs may not be reflected herein and users will need to continue to use the previously issued LOMRs to obtain the most current data.

Table 26: Incorporated Letters of Map Change

Case Number	Effective Date	Flooding Source	FIRM Panel(s)
18-01-1941P	05-09-2019	Beaver Brook 3, Merrimack River	25017C0137F
18-01-0626P	12-03-2018	Ell Pond	25017C0429F, 25017C0433F
17-01-1899P	02-09-2018	Concord River	25017C0264F ¹ , 25017C0376F ¹ , 25017C0377F ¹ , 25017C0378F ¹ , 25017C0379G

¹Although a portion of LOMR 17-01-1899P falls within the scope of this map revision, panels 25017C0264F, 25017C0376F, 25017C0377F, and 25017C0378F were not revised. Therefore, users must continue to refer to the annotated FIRM attachment for this LOMR for FIRM panels 25017C0264F, 25017C0376F, 25017C0377F, and 25017C0378F.

Table 26: Incorporated Letters of Map Change

Case Number	Effective Date	Flooding Source	FIRM Panel(s)
15-01-2142P	04-08-2016	Alewife Brook (Little River)	25017C0419F
15-01-0902P	08-14-2015	Mill Brook 2, Unnamed Tributary to Mill Brook 2	25017C0378F ² , 25017C0379G
13-01-2122P	09-17-2014	Winthrop Canal	25017C0633F, 25017C0641F
10-01-1291P	12-14-2010	Aberjona River	25017C0407F, 25017C0426F

²Although a portion of LOMR 15-01-0902P falls within the scope of this map revision, panel 25017C0378F was not revised. Therefore, users must continue to refer to the annotated FIRM attachment for this LOMR for FIRM panel 25017C0378F.

6.5.4 Physical Map Revisions

Physical Map Revisions (PMRs) are an official republication of a community’s NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community’s chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit www.fema.gov and visit the “Flood Map Revision Processes” section.

6.5.5 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit www.fema.gov to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

6.5.6 Community Map History

The current FIRM presents flooding information for the entire geographic area of Middlesex County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBM) and/or Flood Boundary and Floodway Maps (FBFMs) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 27, “Community Map History.” A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.
- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or “pending” (for Preliminary FIS Reports) is shown. If the community is listed in Table 27 but not identified on the map, the community is treated as if it were unmapped.
- *Initial FHBM Effective Date* is the effective date of the first Flood Hazard Boundary Map (FHBM). This date may be the same date as the Initial NFIP Map Date.
- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.
- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community.
- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as Physical Map Revisions (PMR) of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the Flood County FIRMs in countywide format was 06/04/2010.

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Acton, Town of	07/26/1974	07/26/1974	11/12/1976	06/15/1978	07/07/2014 06/04/2010 01/06/1988

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Arlington, Town of	06/28/1974	06/28/1974	01/14/1977	07/05/1982	99/99/9999 06/04/2010
Ashby, Town of	04/29/1977	04/29/1977	None	08/01/1996	06/04/2010
Ashland, Town of	02/08/1974	02/08/1974	08/06/1976	07/16/1981	99/99/9999 07/07/2014 06/04/2010
Ayer, Town of	03/22/1974	03/22/1974	09/03/1976	07/19/1982	06/04/2010 03/18/1991
Bedford, Town of	09/07/1973	09/07/1973	None	09/07/1973	99/99/9999 07/06/2016 07/07/2014 06/04/2010 07/04/1988 06/15/1983 02/26/1976 07/01/1974
Belmont, Town of	07/26/1974	07/26/1974	12/10/1976	06/15/1982	99/99/9999 06/04/2010
Billerica, Town of	09/20/1974	09/20/1974	09/17/1976	11/05/1980	99/99/9999 07/06/2016 07/07/2014 06/04/2010 08/05/1985
Boxborough, Town of	09/20/1974	09/20/1974	12/17/1976	09/15/1978	07/07/2014 06/04/2010 09/08/1999
Burlington, Town of	08/09/1977	08/09/1977	None	07/05/1984	99/99/9999 07/06/2016 06/04/2010
Cambridge, City of	06/21/1974	06/21/1974	11/19/1976	07/05/1982	99/99/9999 06/04/2010
Carlisle, Town of	08/16/1974	08/16/1974	12/10/1976	10/15/1980	07/07/2014 06/04/2010 05/17/1988
Chelmsford, Town of	10/25/1974	10/25/1974	10/08/1976	06/04/1980	07/07/2014 06/04/2010 01/16/2004
Concord, Town of	09/06/1974	09/06/1974	None	06/15/1979	99/99/9999 07/07/2014 06/04/2010 06/03/1988

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Dracut, Town of	08/09/1974	08/09/1974	06/25/1976	07/02/1980	07/07/2014 06/04/2010 06/05/1989
Dunstable, Town of	11/29/1974	11/29/1974	07/16/1976	07/05/1982	06/04/2010
Everett, City of	06/07/1974	06/07/1974	07/30/1976	06/03/1986	99/99/9999 06/04/2010
Framingham, Town of	08/02/1974	08/02/1974	12/13/1977	02/03/1982	07/07/2014 06/04/2010 03/16/1992 11/19/1986 03/15/1984
Groton, Town of	09/06/1974	09/06/1974	11/12/1977	07/05/1982	06/04/2010
Holliston, Town of	08/02/1974	08/02/1974	11/05/1976	09/30/1980	99/99/9999 07/07/2014 06/04/2010 09/10/1982
Hopkinton, Town of	07/19/1974	07/19/1974	10/08/1976	07/05/1982	99/99/9999 07/07/2014 06/04/2010
Hudson, Town of	07/26/1974	07/26/1974	11/12/1976	12/15/1979	07/07/2014 06/04/2010
Lexington, Town of	06/28/1974	06/28/1974	12/10/1976	06/01/1978	99/99/9999 07/06/2016 06/04/2010 09/30/1983
Lincoln, Town of	12/13/1974	12/13/1974	10/15/1976	06/01/1978	99/99/9999 07/06/2016 07/07/2014 06/04/2010 06/17/1986
Littleton, Town of	07/19/1974	07/19/1974	08/20/1976	06/15/1983	07/07/2014 06/04/2010
Lowell, City of	05/31/1974	05/31/1974	None	04/16/1979	07/07/2014 06/04/2010 09/30/1992 05/15/1991 02/15/1984
Malden, City of	07/26/1974	07/26/1974	05/24/1977	05/19/1987	99/99/9999 06/04/2010 08/20/2002

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Marlborough, City of	07/26/1974	07/26/1974	11/15/1977	01/06/1982	07/07/2014 06/04/2010
Maynard, Town of	07/26/1974	07/26/1974	12/10/1976	06/15/1979	07/07/2014 06/04/2010
Medford, City of	07/26/1974	07/26/1974	09/24/1976	06/03/1986	99/99/9999 06/04/2010
Melrose, City of	06/28/1974	06/28/1974	06/18/1976	08/05/1986	99/99/9999 06/04/2010
Natick, Town of	07/26/1974	07/26/1974	04/09/1976	02/01/1980	99/99/9999 07/07/2014 06/04/2010
Newton, City of	06/28/1974	06/28/1974	None	06/01/1978	99/99/9999 06/04/2010 06/04/1990 07/17/1986 11/02/1983
North Reading, Town of	08/30/1974	08/30/1974	None	04/03/1978	99/99/9999 06/04/2010 06/16/2004 03/05/1996 04/03/1989 01/06/1983
Pepperell, Town of	08/02/1974	08/02/1974	08/13/1976	07/02/1981	06/04/2010 06/02/1993
Reading, Town of	06/21/1977	06/21/1977	None	07/02/1981	99/99/9999 06/04/2010
Sherborn, Town of	05/27/1977	05/27/1977	None	06/18/1980	99/99/9999 07/07/2014 06/04/2010
Shirley, Town of	06/28/1974	06/28/1974	11/19/1976	07/05/1983	06/04/2010
Somerville, City of	07/26/1974	07/26/1974	11/26/1976	07/17/1986	99/99/9999 06/04/2010
Stoneham, Town of	08/02/1974	08/02/1974	12/13/1977	07/03/1986	99/99/9999 06/04/2010
Stow, Town of	10/18/1974	10/18/1974	12/06/1977	08/01/1979	07/07/2014 06/04/2010
Sudbury, Town of	08/23/1974	08/23/1974	12/10/1976	06/01/1982	07/07/2014 06/04/2010 11/20/1998

Table 27: Community Map History

Community Name	Initial Identification Date	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
Tewksbury, Town of	12/10/1971	12/10/1971	08/02/1974	07/18/1977	99/99/9999 07/06/2016 07/07/2014 06/04/2010 07/02/1981
Townsend, Town of	09/20/1974	09/20/1974	08/13/1976	08/02/1982	06/04/2010
Tyngsborough, Town of	08/02/1974	08/02/1974	11/26/1976	09/02/1982	06/04/2010
Wakefield, Town of	08/02/1974	08/02/1974	None	10/17/1978	99/99/9999 06/04/2010 09/02/1988
Waltham, City of	06/28/1974	06/28/1974	04/15/1977	12/18/1979	99/99/9999 06/04/2010 07/05/1984 12/19/1979
Watertown, Town of	06/28/1974	06/28/1974	12/03/1976	09/30/1980	99/99/9999 06/04/2010
Wayland, Town of	07/26/1974	07/26/1974	12/24/1976	06/01/1982	99/99/9999 07/07/2014 06/04/2010 02/19/1986
Westford, Town of	10/18/1974	10/18/1974	08/06/1976	06/15/1983	07/07/2014 06/04/2010
Weston, Town of	07/26/1974	07/26/1974	10/01/1976	07/02/1980	99/99/9999 07/07/2014 06/04/2010
Wilmington, Town of	03/01/1974	03/01/1974	07/02/1976	06/15/1982	99/99/9999 07/06/2016 06/04/2010 06/02/1999 01/18/1989
Winchester, Town of	07/19/1974	07/19/1974	11/19/1976	06/18/1980	99/99/9999 06/04/2010
Woburn, City of	08/02/1974	08/02/1974	06/28/1977	07/02/1980	99/99/9999 06/04/2010

SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

7.1 Contracted Studies

Table 28 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Aberjona River (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Reading, Town of
Aberjona River (detailed)	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Arlington, Town of; Medford, City of; Reading, Town of; Winchester, Town of; Woburn, City of
Aberjona River North Spur	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Reading, Town of; Wilmington, Town of; Woburn, City of
Aberjona River Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Woburn, City of
Alewife Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Arlington, Town of; Belmont, Town of
Alewife Brook (detailed)	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Arlington, Town of; Belmont, Town of; Cambridge, City of; Somerville, City of
Althea Lake	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of
Angelica Brook	2/3/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Framingham, Town of
Ashley Street ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Assabet Branch No. 3	6/1/1979	Harris-Toups Associates	H-4024	December 1977	Hudson, Town of
Assabet Branch No. 4	6/1/1979	Harris-Toups Associates	H-4024	December 1977	Hudson, Town of
Assabet River	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Concord, of Town; Acton, of Town; Maynard, of Town; Stow, of Town; Hudson, of Town; Marlborough, of City

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Baddacook Brook (detailed)	1/5/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Groton, Town of
Baddacook Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of
Baddacook Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of
Baiting Brook	3/16/1992	Dewberry & Davis	unknown	July 1989	Framingham, Town of
Bancroft Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Bartlett Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Bartlett Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Bartlett Brook Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Bartlett Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Bayberry Hill Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Bear Meadow Brook	1/2/1981	Anderson-Nichols & Co.	H-4524	August 1978	North Reading, Town of; Reading, Town of
Bear Meadow Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of; Reading, Town of
Bear Meadow Brook Tributary A1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of; Reading, Town of
Bear Meadow Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Reading, Town of
Bear Meadow Brook Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Reading, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Beaver Brook 1 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Belmont, Town of; Lexington, Town of; Waltham, City of
Beaver Brook 1 (detailed)	7/5/1984	C.E. Maguire, Inc.	H-4523	April 1978	Belmont, Town of; Waltham, City of
Beaver Brook 2	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Chelmsford, Town of; Westford, Town of
Beaver Brook 2 - Split 1	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Chelmsford, Town of
Beaver Brook 2 - Split 2	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Chelmsford, Town of
Beaver Brook 2 - Split 3	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Chelmsford, Town of
Beaver Brook 3	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of; Lowell, City of
Beaver Brook 4 (detailed) (lower)	12/15/1982	Schoenfeld Associates	H-4794	October 1980	Littleton, Town of; Westford, Town of
Beaver Brook 4 (detailed) (upper)	3/15/1978	Harris-Toups Associates	H-4024	April 1977	Boxborough, Town of
Beaver Brook 4 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Boxborough, Town of
Beaver Brook 4 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Beaver Brook 4 Tributary A1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Beaver Brook 4 Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Beaver Brook 4 Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Boxborough, Town of
Beaver Brook 4 Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Boxborough, Town of
Beaver Brook 4 Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Boxborough, Town of
Beaver Brook 4 Tributary E1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Boxborough, Town of
Beaver Brook 5 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lexington, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Beaver Brook 5 (detailed)	12/1/1977	Harris-Toups Associates	H-4024	April 1977	Lexington, Town of
Beaver Brook 6	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of; Hopkinton, Town of
Beaver Brook 6 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Beaver Brook 6 Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Beaver Brook 6 Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Beaver Dam Brook	8/1/1979	Harris-Toups Associates	H-4024	May 1978	Ashland, Town of; Framingham, Town of; Natick, Town of
Beaver Pond Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Bennetts Brook (detailed)	1/19/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Ayer, Town of; Littleton, Town of
Bennetts Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ayer, Town of; Littleton, Town of
Bennetts Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Bennetts Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Bennetts Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ayer, Town of; Littleton, Town of
Bennetts Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Bennetts Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ayer, Town of; Littleton, Town of
Bennetts Brook Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Bennetts Brook Tributary F1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Bennetts Brook Tributary G	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ayer, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Bennetts Brook Tributary H	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ayer, Town of
Bennetts Pond Brook	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of
Birch Meadow Brook	3/16/1992	Dewberry & Davis	unknown	July 1989	Framingham, Town of
Bixby Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Bixby Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Black Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lowell, City of
Black Brook 4	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Black Brook 4 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Black Brook 4 Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Tyngsborough, Town of
Black Brook 4 Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Black Brook 4 Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Black Pond	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Littleton, Town of
Blue Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Bogastow Brook	3/1/1980	C.E. Maguire, Inc.	H-4523	December 1978	Holliston, Town of; Sherborn, Town of
Bogastow Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Sherborn, Town of
Bogastow Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Bogle Brook 1 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Natick, Town of
Bogle Brook 1 (detailed)	8/1/1979	Harris-Toups Associates	H-4024	May 1978	Natick, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Bogle Brook 2	1/1/1980	C.E. Maguire, Inc.	H-4523	May 1978	Natick, Town of; Weston, Town of
Boons Pond Branch	2/1/1979	Harris-Toups Associates	H-4024	December 1977	Stow, Town of
Boston Harbor	3/16/2016	STARR	HSFEHQ-09-D-0370 (Suffolk County)	May 2015	Everett, City of; Somerville, City of
Boutwell Brook	12/15/1982	Cullinan Engineering	H-4797	January 1981	Westford, Town of
Bow Brook (detailed)	1/5/1983	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Shirley, Town of
Bow Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Bow Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Branch of Assabet River	2/1/1979	Harris-Toups Associates	H-4024	December 1977	Stow, Town of
Branch of Elizabeth Brook 1	2/1/1979	Harris-Toups Associates	H-4024	December 1977	Stow, Town of
Broad Meadow Brook	7/6/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Marlborough, City of
Brook A	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Brook from Washakum Pond	2/3/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Framingham, Town of
Brookhaven Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lexington, Town of; Waltham, City of
Brooks Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Medford, City of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Butter Brook (lower)	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1985	Acton, Town of
Butter Brook (upper)	12/15/1982	Cullinan Engineering	H-4797	January 1981	Westford, Town of
Catacoonamug Brook (detailed)	1/5/1983	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Shirley, Town of
Catacoonamug Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Charles River (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Hopkinton, Town of
Charles River (detailed) (lower)	99/99/9999	USGS	HSFE01-14-X-0075	June 2017	Newton, City of; Waltham, City of; Watertown, Town of; Weston, Town of
Charles River (detailed) (upper)	8/1/1979	Harris-Toups Associates	H-4024	May 1978	Natick, Town of; Newton, City of; Sherborn, Town of
Cheese Cake Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Newton, City of
Cheese Cake Brook (detailed)	11/2/1983	Schoenfeld Associates	H-4794	November 1981	Newton, City of
Cheese Cake Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Newton, City of
Cherry Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Cherry Brook (detailed)	1/1/1980	C.E. Maguire, Inc.	H-4523	May 1978	Weston, Town of
Cherry Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Chester Brook	7/5/1984	C.E. Maguire, Inc.	H-4523	April 1978	Waltham, City of
Chicken Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2017	Holliston, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Chicopee Row ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Claypit Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of; Lowell, City of
Cochituate Brook	2/3/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Framingham, Town of
Cold Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Cold Brook 1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Cold Spring Brook (lower)	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Ashland, Town of
Cold Spring Brook (upper)	1/16/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Ashland, Town of; Hopkinton, Town of
Coldspring Brook pond	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Coles Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1976	Acton, Town of
Collins Brook	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Conant Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1976	Acton, Town of
Concord River	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Bedford, Town of; Billerica, Town of; Carlisle, Town of; Chelmsford, Town of; Concord, Town of; Lowell, City of; Tewksbury, Town of
Content Brook (detailed) (lower)	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Content Brook (detailed) (upper)	11/5/1985	Schoenfeld Associates	EMW-C-0280	July 1983	Billerica, Town of
Content Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of; Tewksbury, Town of
Content Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Course Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Framingham, Town of; Natick, Town of; Sherborn, Town of
Cow Pond Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of; Tyngsborough, Town of
Cow Pond Brook (detailed)	1/5/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Groton, Town of
Cow Pond Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of
Cow Pond Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of
Cranberry Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Crooked Springs Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Chelmsford, Town of
Crystal Lake 1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Newton, City of
Crystal Lake 2	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Stoneham, Town of; Wakefield, Town of
Cummings Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Woburn, City of
Cummings Brook (detailed)	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Woburn, City of
Dakins Brook	6/3/1988	Camp Dresser & McKee	H-3861	April 1977	Concord, Town of

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Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Danforth Brook	6/1/1979	Harris-Toups Associates	H-4024	December 1977	Hudson, Town of
Darby Brook (detailed)	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Darby Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Dark Hollow Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Stoneham, Town of
Davis Brook	8/1/1979	Harris-Toups Associates	H-4024	May 1978	Natick, Town of
Dead Pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Deep Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Chelmsford, Town of; Tyngsborough, Town of; Westford, Town of
Deep Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Chelmsford, Town of; Westford, Town of
Deer Brook	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Dirty Meadow Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of; Sherborn, Town of
Dirty Meadow Brook (detailed)	3/1/1980	C.E. Maguire, Inc.	H-4523	December 1978	Holliston, Town of
Doleful Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Stoneham, Town of
Dopping Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of; Sherborn, Town of
Dopping Brook (detailed)	3/1/1980	C.E. Maguire, Inc.	H-4523	December 1978	Holliston, Town of; Sherborn, Town of
Dopping Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of; Sherborn, Town of
Double Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Dudley Brook	12/1/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Sudbury, Town of

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Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Dug Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Natick, Town of
East Outlet	3/16/1992	Dewberry & Davis	unknown	July 1989	Framingham, Town of
Eastern Canal	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lowell, City of
Elizabeth Brook 1	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Stow, Town of
Elizabeth Brook 2	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Boxborough, Town of; Harvard, Town of
Eli Pond	N/A (LOMR)	N/A	18-01-0626P	December 2018	Melrose, City of
Elliott Street swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Elm Brook (detailed)	7/4/1988	C.E. Maguire, Inc.	H-4523	April 1979	Bedford, Town of
Elm Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Concord, Town of; Lincoln, Town of
Elm Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lincoln, Town of
Elm Street pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Emerson Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Emerson Brook Tributary A1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Emerson Brook Tributary A2	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Farley Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Chelmsford, Town of
Farley Brook Split 1	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Chelmsford, Town of
Farm Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Sherborn, Town of
Farrar Pond Brook	6/17/1986	Schoenfeld Associates	EMW-C-0280	March 1983	Lincoln, Town of
Fawn Lake	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Bedford, Town of

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Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Fells Reservoir	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of; Stoneham, Town of
Fellsmere Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Malden, City of
First Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of
Fiske Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of
Flat Pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Fort Hill swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Fort Meadow Brook	6/1/1979	Harris-Toups Associates	H-4024	December 1977	Hudson, Town of
Fort Pond Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1985	Acton, Town of; Boxborough, Town of; Concord, Town of
Fort Pond Brook Branch 1	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Acton, Town of; Maynard, Town of
Fort Pond Brook Branch 2	3/15/1978	Harris-Toups Associates	H-4024	April 1977	Boxborough, Town of
Gilson Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Gilson Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Grass Pond	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Grassy Pond Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1985	Acton, Town of
Graves Pond Brook (detailed)	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Graves Pond Brook (approximate) (lower)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Graves Pond Brook (approximate) (upper)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Great Road Tributary	12/15/1982	Schoenfeld Associates	H-4794	October 1980	Littleton, Town of
Greens Brook	6/2/1993	Green International	EMW-89-C-2820	December 1989	Pepperell, Town of
Greenwood Street ponding	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of; Wakefield, Town of
Groton School Pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Guggins Brook	3/15/1978	Harris-Toups Associates	H-4024	April 1977	Acton, Town of; Boxborough, Town of
Gulf Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Gulf Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Gulf Brook Tributary A1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Gulf Brook Tributary A2	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Gulf Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Gumpas Pond Brook	unknown	USACE	IAA-H-7-76, IAA-H-10-77	May 1978	Dracut, Town of
Hales Brook	12/1/1979	Camp Dresser & McKee	H-3861	March 1978	Chelmsford, Town of; Lowell, City of
Halls Brook	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Woburn, City of
Hammond Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Newton, City of
Hanlon Road swamp	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Hauk Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Hauk Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Hawley Road ponding	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of; Wakefield, Town of
Hayward Brook	2/19/1986	Dewberry & Davis	unknown	April 1985	Wayland, Town of
Heald Street ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Heath Brook (detailed)	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Heath Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Heath Hen Meadow Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Acton, Town of; Stow, Town of
Heath Hen Meadow Brook Split 1	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Acton, Town of; Stow, Town of
Heron Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Wakefield, Town of
Hobbs Brook 1 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lexington, Town of; Lincoln, Town of; Waltham, City of
Hobbs Brook 1 (detailed)	1/1/1980	C.E. Maguire, Inc.	H-4523	May 1978	Waltham, City of; Weston, Town of
Hobbs Brook 2 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of
Hobbs Brook 2 (detailed)	6/17/1986	Schoenfeld Associates	EMW-C-0280	March 1983	Lincoln, Town of
Hobbs Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Hobbs Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Waltham, City of; Weston, Town of
Hobbs Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lexington, Town of; Waltham, City of
Hobbs Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of
Hobbs Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of
Hog Brook	6/1/1979	Harris-Toups Associates	H-4024	December 1977	Hudson, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Hollis Street pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Hollis Street swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Hop Brook	7/6/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Marlborough, City of; Sudbury, Town of
Hopping Brook	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of; Hopkinton, Town of
Hopping Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Hopping Brook Tributary D1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of
Hopping Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Holliston, Town of; Hopkinton, Town of
Horn Pond Brook/ Fowle Brook	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Winchester, Town of; Woburn, City of
Inch Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1985	Acton, Town of
Indian Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Hopkinton, Town of
Indian Brook 2	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Natick, Town of; Sherborn, Town of
Ipswich River (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Burlington, Town of
Ipswich River (detailed)	99/99/9999	USGS	HSFE01-14-X-0075	June 2017	North Reading, Town of; Reading, Town of; Wilmington, Town of
Ipswich River Diversion	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Wilmington, Town of
Ipswich River Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of; Wilmington, Town of
Ipswich River Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Reading, Town of; Wilmington, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
James Brook	1/5/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Ayer, Town of; Groton, Town of
James Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ayer, Town of
James Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ayer, Town of
James Brook Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ayer, Town of
Jar Brook	3/1/1980	C.E. Maguire, Inc.	H-4523	December 1978	Holliston, Town of
Jenny Dugan Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Concord, Town of
Jodi Drive ponding	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Joint Grass Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Joint Grass Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Joint Grass Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Joint Grass Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Joint Grass Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Joint Grass Brook Tributary D1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Joint Grass Brook Tributary D2	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Jones Brook (detailed)	11/5/1985	Schoenfeld Associates	EMW-C-0280	July 1983	Billerica, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Jones Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of
Keyes Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of; Westford, Town of
Keyes Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Kiln Brook (detailed)	12/1/1977	Harris-Toups Associates	H-4024	April 1977	Lexington, Town of
Kiln Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
Kiln Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
Kiln Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
King Street Tributary	12/15/1982	Schoenfeld Associates	H-4794	October 1980	Littleton, Town of
Lake Maspenock	99/99/9999	USGS	HSFE01-14-X-0075	December 2021	Hopkinton, Town of
Lake Quannapowitt	4/1/1978	Camp Dresser & McKee	H-3861	December 1976	Wakefield, Town of
Landham-Allowance Brook	12/1/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Framingham, Town of; Sudbury, Town of; Wayland, Town of
Laurelwoods Drive swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Lawrence Brook	3/2/1982	Cullinan Engineering	H-4797	January 1981	Tyngsborough, Town of
Little Brook	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Woburn, City of
Locke Brook (detailed)	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Locke Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of; Townsend, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Locke Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Long Pond Brook (detailed)	1/19/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Ayer, Town of
Long Pond Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ayer, Town of; Groton, Town of
Long Pond Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ayer, Town of
Lower Spot Pond Brook	5/19/1987	Camp Dresser & McKee	EMW-84-C-1601	October 1985	Malden, City of; Melrose, City of
Lubbers Brook	6/2/1999	Green International	EMB-96-CO-0403	April 1997	Billerica, Town of; Wilmington, Town of
Malden River	5/19/1987	Camp Dresser & McKee	EMW-84-C-1601	October 1985	Everett, City of; Malden, City of; Medford, City of
Malden River Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Malden, City of; Melrose, City of
Mallard Way ponding	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Burlington, Town of
Maple Meadow Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Burlington, Town of; Wilmington, Town of; Woburn, City of
Maple Meadow Brook (detailed)	6/15/1982	Anderson-Nichols & Co.	H-4524	August 1978	Wilmington, Town of
Marginal Brook	2/15/1984	USACE	H-2-73	February 1984	Lowell, City of
Marshall Brook	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Martins Brook	1/18/1989	Dewberry & Davis	unknown	November 1986	North Reading, Town of; Wilmington, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Martins Pond Brook (detailed)	1/5/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Groton, Town of
Martins Pond Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of
Martins Pond Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of
Martins Pond Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of
Mascuppic Brook	3/2/1982	Cullinan Engineering	H-4797	January 1981	Tyngsborough, Town of
Mason Brook	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Mason Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Mayo Road ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
McCann's Hill swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
McKee Brook pond	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of
Meadow Brook (detailed)	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Meadow Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Meadow Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Meadow Brook Tributary A1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Meadow River Branch	5/17/1988	Harris-Toups Associates	H-4024	April 1978	Carlisle, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Merrimack Canal	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lowell, City of
Merrimack River	9/30/1992	Roald Haestad	EMW-90-C-3126	March 1991	Chelmsford, Town of; Dracut, Town of; Lowell, City of; Tewksbury, Town of; Tyngsborough, Town of
Merrimack River Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of
Merrimack River Tributary E1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Tyngsborough, Town of
Merrimack River Tributary E1A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Merrimack River Tributary E2	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Tyngsborough, Town of
Merrimack River Tributary E2A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of
Merrimack River Tributary E2A1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of
Merrimack River Tributary E2B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Tyngsborough, Town of
Merrimack River Tributary E2C	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Tyngsborough, Town of
Merrimack River Tributary E3	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of; Westford, Town of
Merrimack River Tributary E4	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of; Westford, Town of
Merrimack River Tributary E5	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Tyngsborough, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Merrimack River Tributary E5A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of
Merrimack River Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Tyngsborough, Town of
Merrimack River Tributary F1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of
Merrimack River Tributary F2	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Middlesex Canal (detailed)	11/5/1985	Schoenfeld Associates	EMW-C-0280	July 1983	Billerica, Town of
Middlesex Canal (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of
Middlesex Turnpike ponding	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of
Mill Brook 1	2/19/1986	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Wayland, Town of
Mill Brook 2	N/A (LOMR)	N/A	15-01-0902P	August 2015	Concord, Town of
Mill Brook 3	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Arlington, Town of; Lexington, Town of
Mill Pond Tributary	12/15/1982	Schoenfeld Associates	H-4794	October 1980	Littleton, Town of
Mill River (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Wakefield, Town of
Mill River (detailed) (lower)	4/1/1978	Camp Dresser & McKee	H-3861	December 1976	Wakefield, Town of
Mill River (detailed) (upper)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Wakefield, Town of
Mill River 2 (upper)	99/99/9999	USGS	HSFE01-14-X-0075	December 2021	Hopkinton, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Millstone Hill swamp	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Mine Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Mineway Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Mongo Brook	7/4/1988	C.E. Maguire, Inc.	H-4523	April 1979	Bedford, Town of
Morse Brook	1/5/1983	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Shirley, Town of
Mount Lebanon Street pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Mowry Brook	7/6/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Marlborough, City of
Mud Pond Brook (detailed)	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Mud Pond Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of; Wilmington, Town of
Muddy Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Acton, Town of
Mulpus Brook	1/5/1983	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Shirley, Town of
Munroe Brook	12/1/1977	Harris-Toups Associates	H-4024	April 1977	Arlington, Town of; Lexington, Town of
Mystic River	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Arlington, Town of; Medford, City of; Somerville, City of
Nagog Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1985	Acton, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Nashoba Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1985	Acton, Town of; Concord, Town of
Nashua River	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ayer, Town of; Dunstable, Town of; Groton, Town of; Pepperell, Town of; Shirley, Town of
Nashua River Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nashua River Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of
Nashua River Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nashua River Tributary H	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Nashua Road ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
New Meadow	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
New Meadow Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
New Meadow Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Nissitissit River	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nissitissit River Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nissitissit River Tributary A1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nissitissit River Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nissitissit River Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nissitissit River Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Nissitissit River Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Nonacoicus Brook 1	1/19/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Ayer, Town of
Nonacoicus Brook 2	1/19/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Ayer, Town of
North Lexington Brook (detailed)	12/1/1977	Harris-Toups Associates	H-4024	April 1977	Bedford, Town of; Lexington, Town of
North Lexington Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
North Lexington Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
North Lexington Brook Tributary A1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
North Lexington Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
North Reservoir	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Stoneham, Town of; Winchester, Town of
Northern Canal	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lowell, City of
Norumbega Reservoir	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Pages Brook	5/17/1988	Harris-Toups Associates	H-4024	April 1978	Billerica, Town of; Carlisle, Town of
Pages Brook Branch	5/17/1988	Harris-Toups Associates	H-4024	April 1978	Carlisle, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Pantry Brook	12/1/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Sudbury, Town of
Paul Brook	11/2/1983	Schoenfeld Associates	H-4794	November 1981	Newton, City of
Pawtucket Canal	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lowell, City of
Pearl Hill Brook (detailed)	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Pearl Hill Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of; Townsend, Town of
Pearl Hill Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Pearl Hill Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Pearl Hill Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Peppermint Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Peppermint Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Pine Brook	2/19/1986	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Wayland, Town of
Pines River	3/16/2016	STARR	HSFEHQ-09-D-0370 (Suffolk County)	May 2015	Everett, City of; Malden, City of
Pole Brook	6/17/1986	Harris-Toups Associates	H-4024	May 1977	Lincoln, Town of
Pratts Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Acton, Town of; Maynard, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Pumpkin Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Putnam Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Chelmsford, Town of
Quarter Mile Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Medford, City of; Stoneham, Town of
Reedy Meadow Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of; Pepperell, Town of
Reedy Meadow Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Reedy Meadow swamp 1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Reedy Meadow swamp 2	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Reedy Meadow swamp 3	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Richardson Brook	N/A (LOMR)	N/A	15-01-0572P	September 2015	Dracut, Town of
River Meadow Brook (lower)	2/15/1984	USACE	H-2-73	February 1984	Lowell, City of
River Meadow Brook (upper)	1/16/2004	Roald Haestad	EMB-1999-CO-0564	October 2001	Chelmsford, Town of
River Street ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of
Robinson Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Roosevelt Park ponding	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Malden, City of
Run Brook	12/1/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Sudbury, Town of
Salmon Brook	1/5/1982	Schoenfeld Associates	H-4794	February 1980	Dunstable, Town of
Salmon Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Salmon Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Salmon Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Salmon Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of; Groton, Town of
Salmon Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dunstable, Town of
Salmon Brook Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of; Tyngsborough, Town of
Salmon Brook Tributary G	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tyngsborough, Town of
Sandy Brook	1/5/1984	Schoenfeld Associates	H-4794	March 1981	Burlington, Town of
Saugus River	99/99/9999	USGS	HSFE01-14-X-0075	June 2017	Wakefield, Town of
Saunders Brook	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Sawmill Brook 1 (approximate) (lower)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Wilmington, Town of
Sawmill Brook 1 (approximate) (upper)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Burlington, Town of
Sawmill Brook 1 (detailed)	1/5/1984	Schoenfeld Associates	H-4794	March 1981	Burlington, Town of
Sawmill Brook 2	6/3/1988	Schoenfeld Associates	EMW-C-0280	February 1984	Concord, Town of
Sawmill Brook 3	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Newton, City of
Sawmill Brook 3 Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Newton, City of
Scarlet Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of; Lowell, City of; Tyngsborough, Town of
Schneider Brook	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Woburn, City of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Seaverns Brook	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Seaverns Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Sewall Brook	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Sherborn, Town of
Shakers Glen Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Woburn, City of
Shakers Glen Brook (detailed)	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Woburn, City of
Shawsheen River	7/6/2016	URS, STARR	HSFEHQ-06-D-0162, HSFEHQ-09-D-0370	April 2015	Bedford, Town of; Billerica, Town of; Lexington, Town of; Tewksbury, Town of; Wilmington, Town of
Shawsheen River Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of
Shawsheen River Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of; Burlington, Town of
Shawsheen River Tributary F1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Billerica, Town of; Burlington, Town of
Shawsheen River Tributary G	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Bedford, Town of
Sherman Lane pond	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Bedford, Town of
Shipley Hills swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Shirley Street ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Shute Brook	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of
Silver Lake Outlet	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Wilmington, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Skug River	4/3/1989	USACE	IAA-H-10-77	May 1979	North Reading, Town of
Skug River Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of; Wilmington, Town of
Skug River Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Skug River Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Skug River Tributary C1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Skug River Tributary C2	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Skug River Tributary C3	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Skug River Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Smelt Brook 1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Medford, City of; Stoneham, Town of
Snake Brook	2/19/1986	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Natick, Town of; Wayland, Town of
Snake Meadow Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of; Westford, Town of
Snake Meadow Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of; Westford, Town of
South Branch Souhegan River	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ashby, Town of
South Branch Souhegan River Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ashby, Town of
South Branch Souhegan River Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ashby, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
South Branch Souhegan River Tributary B2	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Ashby, Town of
South Meadow Brook	6/4/1990	Dewberry & Davis	unknown	July 1988	Newton, City of
South Row Road swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Spaulding Brook	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Spaulding Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Spencer Brook (lower)	6/3/1988	Schoenfeld Associates	EMW-C-0280	February 1984	Concord, Town of
Spencer Brook (upper)	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Carlisle, Town of; Concord, Town of
Spot Pond Brook	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of; Stoneham, Town of
Spring Brook	7/4/1988	C.E. Maguire, Inc.	H-4523	April 1979	Bedford, Town of
Spring Brook pond	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Bedford, Town of; Billerica, Town of
Spruce Swamp Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Spruce Swamp Brook pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Squannacook River	1/5/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Groton, Town of; Shirley, Town of; Townsend, Town of
Squannacook River Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of; Townsend, Town of
Squannacook River Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of; Townsend, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Squannacook River Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Squannacook River Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Star House Lane swamp 1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Star House Lane swamp 2	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Star House Lane swamp 3	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of
Stewart Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Stewart Brook lower swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Stewart Brook upper swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Stony Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Framingham, Town of
Stony Brook 1 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of; Weston, Town of
Stony Brook 1 (detailed) (lower)	1/1/1980	C.E. Maguire, Inc.	H-4523	May 1978	Waltham, City of; Weston, Town of
Stony Brook 1 (detailed) (upper)	6/17/1986	Schoenfeld Associates	EMW-C-0280	March 1983	Lincoln, Town of
Stony Brook 1 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Stony Brook 1 Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Stony Brook 1 Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Stony Brook 1 Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of; Weston, Town of
Stony Brook 1 Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of; Weston, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Stony Brook 1 Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of
Stony Brook 1 Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of
Stony Brook 1 Tributary F1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of
Stony Brook 2 (detailed)	12/15/1982	Cullinan Engineering	H-4797	January 1981	Chelmsford, Town of; Westford, Town of
Stony Brook 2 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Chelmsford, Town of; Westford, Town of
Stony Brook 2 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Chelmsford, Town of
Stony Brook 2 Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Groton, Town of; Westford, Town of
Stony Brook Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Lincoln, Town of
Strawberry Meadow	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Strawberry Meadow Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Strawberry Meadow Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Strawberry Meadow Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Strong Water Brook	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Sucker Brook 1 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Sucker Brook 2	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Sucker Brook 2 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Sudbury River	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Ashland, Town of; Concord, Town of; Framingham, Town of; Lincoln, Town of; Sudbury, Town of; Wayland, Town of
Sutton Brook (detailed)	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Sutton Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Wilmington, Town of
Sutton Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Wilmington, Town of
Swains Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Melrose, City of
Sweetwater Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Stoneham, Town of
Sweetwater Brook (detailed)	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Stoneham, Town of; Woburn, City of
Tadmuck Brook (detailed)	12/15/1982	Cullinan Engineering	H-4797	January 1981	Westford, Town of
Tadmuck Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Westford, Town of
Tadmuck Swamp Brook	12/15/1982	Cullinan Engineering	H-4797	January 1981	Westford, Town of
Taylor Brook	12/1/1978	Harris-Toups Associates	H-4024	July 1977	Maynard, Town of
Trap Swamp Brook pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Trapfall Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Trapfall Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Trapfall Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Trapfall Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Trapfall Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Trapfall Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Trapfall Brook Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Tributary 1 to Coles Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1976	Acton, Town of
Tributary 1 to Sudbury River	6/3/1988	Schoenfeld Associates	EMW-C-0280	February 1984	Concord, Town of
Tributary 2 to Assabet River	6/3/1988	Schoenfeld Associates	EMW-C-0280	February 1984	Concord, Town of
Tributary 2 to Tributary 1 to Coles Brook	1/6/1988	Camp Dresser & McKee	EMW-84-C-1601	December 1976	Acton, Town of
Tributary 3 to Bogle Brook 2 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Weston, Town of
Tributary 3 to Bogle Brook 2 (detailed)	1/1/1980	C.E. Maguire, Inc.	H-4523	May 1978	Weston, Town of
Tributary 4 to Bogle Brook 2	1/1/1980	C.E. Maguire, Inc.	H-4523	May 1978	Weston, Town of
Tributary A to Cold Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Tributary A to Course Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Sherborn, Town of
Tributary A to Dudley Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Tributary A to Hop Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Tributary A to Ipswich River	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	North Reading, Town of
Tributary A to Pantry Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Tributary A to Squannacook River (detailed)	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Tributary A to Squannacook River (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Tributary A1 to Squannacook River	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Tributary A1A to Squannacook River	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Tributary A2 to Squannacook River	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Tributary B to Hop Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Tributary B to Squannacook River	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Tributary B to Vine Brook	1/5/1984	Schoenfeld Associates	H-4794	March 1981	Burlington, Town of
Tributary C to Vine Brook	1/5/1984	Schoenfeld Associates	H-4794	March 1981	Burlington, Town of
Tributary to Beaver Brook 3 (detailed)	6/5/1989	USACE	EMW-E-0941	July 1986	Dracut, Town of
Tributary to Beaver Brook 3 (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Tributary to Cold Spring Brook	1/16/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Ashland, Town of
Tributary to Indian Brook	6/7/2014	STARR	EMP-2003-CO-2606	October 2012	Hopkinton, Town of
Tributary to Martins Brook	1/18/1989	Dewberry & Davis	unknown	November 1986	Wilmington, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Tributary to Mill Brook	7/4/1988	C.E. Maguire, Inc.	H-4523	April 1979	Bedford, Town of
Tributary to Nonacoicus Brook 1	1/19/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Ayer, Town of
Tributary to Waushakum Pond	1/16/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Ashland, Town of
Trout Brook	11/20/1998	Green International	EMW-94-C-4406	February 1996	Sudbury, Town of
Trout Brook 1	6/5/1989	USACE	EMW-E-0941	July 1986	Dracut, Town of
Trout Brook 1 Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Dracut, Town of
Trout Brook 2	1/5/1983	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Shirley, Town of
Trull Brook (detailed)	1/2/1981	Anderson-Nichols & Co.	H-3707	December 1978	Tewksbury, Town of
Trull Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Trull Brook Tributary	2/15/1984	USACE	H-2-73	February 1984	Lowell, City of; Tewksbury, Town of
Trull Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Tewksbury, Town of
Tyler Road swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Unkety Brook (approximate) (lower)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of; Pepperell, Town of
Unkety Brook (approximate) (upper)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Unkety Brook (detailed)	1/5/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Groton, Town of
Unkety Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of
Unkety Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of
Unkety Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Unkety Brook Tributary C1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Pepperell, Town of
Unkety Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of; Groton, Town of
Unkety Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of; Groton, Town of
Unkety ponding	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Dunstable, Town of
Unnamed Tributary to Mill Brook 2	N/A (LOMR)	N/A	15-01-0902P	August 2015	Concord, Town of
Valley Pond	6/17/1986	Harris-Toups Associates	H-4024	May 1977	Lincoln, Town of
Varnum Brook	6/2/1993	Green International	EMW-89-C-2820	December 1989	Pepperell, Town of
Vine Brook (detailed)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Bedford, Town of; Burlington, Town of; Lexington, Town of
Vine Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
Vine Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Burlington, Town of
Vine Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Burlington, Town of; Lexington, Town of
Vine Brook Tributary F	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of
Vine Brook Tributary G	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lexington, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Vinton Pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Walker Brook 1	1/5/1983	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Shirley, Town of
Walker Brook 2	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Walker Brook 3	7/6/1981	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Marlborough, City of
Walkers Brook	1/2/1981	Anderson-Nichols & Co.	H-4524	August 1978	Reading, Town of
Warner Road swamp	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Warren Road pond	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Washington Street ponding	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Sherborn, Town of
Wellington Brook	6/4/2010	ENSR	EMB-2001-CO-0670	June 2005	Belmont, Town of; Cambridge, City of
West Chester Brook	7/5/1984	C.E. Maguire, Inc.	H-4523	August 1983	Waltham, City of
Western Canal	99/99/9999	USGS	HSFE01-14-X-0075	June 2019	Lowell, City of
Whitehall Brook	1/5/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	November 1979	Hopkinton, Town of
Whitney Road swamp 1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of
Whitney Road swamp 2	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Shirley, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Whittemore Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Woburn, City of
Willard Brook (detailed)	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Willard Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of; Townsend, Town of
Willard Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Willard Brook Tributary B	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Willard Brook Tributary B1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Willard Brook Tributary C	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Willard Brook Tributary C1	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Willard Brook Tributary D	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Willard Brook Tributary E	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Ashby, Town of
Winter Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Winchester, Town of
Winthrop Canal	N/A (LOMR)	N/A	13-01-2122P	September 2014	Holliston, Town of
Witch Brook (detailed)	2/2/1982	Howard, Needles, Tammen, and Bergendoff	H-4004	January 1978	Townsend, Town of
Witch Brook (approximate)	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Witch Brook Tributary A	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Wolf Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Townsend, Town of
Wrangling Brook	99/99/9999	USGS	HSFE01-14-X-0075	November 2019	Groton, Town of

Table 28: Summary of Contracted Studies Included in this FIS Report

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Wrights Pond	99/99/9999	USGS	HSFE01-14-X-0075	April 2018	Medford, City of

7.2 Community Meetings

The dates of the community meetings held for this Flood Risk Project and previous Flood Risk Projects are shown in Table 29. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.