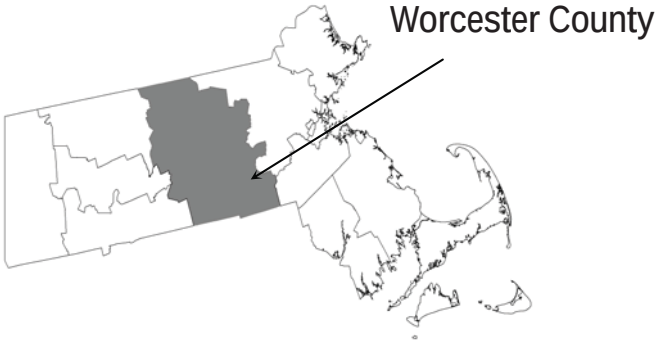
FLOOD INSURANCE STUDY

WORCESTER COUNTY, MASSACHUSETTS
(ALL JURISDICTIONS)



Volume 2 of 5

COMMUNITY NAME	COMMUNITY NUMBER
ASHBURNHAM, TOWN OF*	250290
ATHOL, TOWN OF*	250291
AUBURN, TOWN OF	250292
BARRE, TOWN OF*	250293
BERLIN, TOWN OF	250294
BLACKSTONE, TOWN OF	250295
BOLTON, TOWN OF	250296
BOYLSTON, TOWN OF	250297
BROOKFIELD, TOWN OF*	250298
CHARLTON, TOWN OF	250299
CLINTON, TOWN OF	250300
DOUGLAS, TOWN OF	250301
DUDLEY, TOWN OF	250302
EAST BROOKFIELD, TOWN OF*	250303
FITCHBURG, CITY OF*	250304
GARDNER, CITY OF*	250305
GRAFTON, TOWN OF	250306
HARDWICK, TOWN OF*	250307
HARVARD, TOWN OF	250308
HOLDEN, TOWN OF*	250309
HOPEDALE, TOWN OF	250310
HUBBARDSTON, TOWN OF*	250311
LANCASTER, TOWN OF	250312
LEICESTER, TOWN OF	530313
LEOMINSTER, CITY OF*	250314
LUNENBURG, TOWN OF*	250315
MENDON, TOWN OF	250316
MILFORD, TOWN OF	250317
MILLBURY, TOWN OF	250318
MILLVILLE, TOWN OF	250319
NEW BRAINTREE, TOWN OF*	250320
NORTH BROOKFIELD, TOWN OF*	250323
NORTHBOROUGH, TOWN OF	250321
NORTHBRIDGE, TOWN OF	250322
OAKHAM, TOWN OF*	250324
OXFORD, TOWN OF	250325
PAXTON, TOWN OF	250326
PETERSHAM, TOWN OF*	250327
PHILLIPSTON, TOWN OF*	250328
PRINCETON, TOWN OF*	250329
ROYALSTON, TOWN OF*	250330
RUTLAND, TOWN OF*	250331
SHREWSBURY, TOWN OF	250332
SOUTHBOROUGH, TOWN OF	250333
SOUTHBRIDGE, TOWN OF	250334
SPENCER, TOWN OF	250335
STERLING, TOWN OF*	250336
STURBRIDGE, TOWN OF	250337
SUTTON, TOWN OF	250338
TEMPLETON, TOWN OF*	250339
UPTON, TOWN OF	250340
UXBRIDGE, TOWN OF	250341
WARREN, TOWN OF*	250342
WEBSTER, TOWN OF	250343
WEST BOYLSTON, TOWN OF	250345
WEST BROOKFIELD, TOWN OF*	250346
WESTBOROUGH, TOWN OF	250344
WESTMINSTER, TOWN OF*	250347
WINCHENDON, TOWN OF*	250348
WORCESTER, CITY OF	250349

*Community is not included in this partial countywide Flood Insurance Study and will retain its existing, separately published FIS and/or FIRM

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
25027CV002B

REVISED
JULY 16, 2014

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Selected Flood Insurance Rate Map panels for the community contain information that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels (e.g., floodways, cross sections). In addition, former flood hazard zone designations have been changed as follows:

Old Zone	New Zone
A1 through A30	AE
B	X
C	X (Shaded)

Part or all of this Flood Insurance Study may be revised and republished at any time. In addition, part of this Flood Insurance Study may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the Flood Insurance Study. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current Flood Insurance Study components.

Initial Countywide FIS Effective Date: July 4, 2011

Revised Countywide FIS Effective Date: July 16, 2014

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4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent-annual-chance flood elevations; delineations of the 1- and 0.2-percent-annual-chance floodplains; and a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community.

July 2011 Partial Countywide Analysis

For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:25,000, with a contour interval of 10 feet (References 216 and 217), and a contour interval of 3 meters (References 215, 218, 219 and 220), at a scale of 1:24,000 with a contour interval of 10 feet (References 149, 155, 158, 178, 221, 214, 20 and 222), at a scale of 1:9600, with a contour interval of 10 feet (Reference 99), photo-enlarged to a scale of 1:4800, with a contour interval of 10 feet (Reference 223), and with a contour interval of 5 feet (Reference 224), at a scale of 1:2,400, with a contour interval of 5 feet (References 43, 125, 129, 130, 160, 163, 173, 176, 193, 198 and 225 through 228), and a contour interval 4 feet (References 123, 111, 133, 142, 172, 18 and 229), and 2 feet (References 171, 175 and 230), at a scale of 1:200, with a contour interval of 5 feet (References 126, 127, 128 and 182) and with a contour interval of 1 and 2 feet (References 135 and 203), and at a scale of 1:6,000, with a contour interval of 2 feet (Reference 205) and at a scale of 1:4,800, with a contour interval of 2 feet (References 231-235).

In the Town of Spencer, Muzzy Pond and Lake Whittemore have been delineated on the Digital Flood Insurance Rate Maps (DFIRMS) as Zone A. Both are areas of shallow flooding. For purposes of the NFIP, shallow flooding conditions are defined as flooding which is limited to 3.0 feet or less in depth and unrelated to or nor readily associated with channel flooding and flood profiles, and where reliable determinations of depths, extent of flooding and direction of flow by hydraulic backwater computations are extremely difficult, if not impossible.

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM. On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, AH, and AO), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of

moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM.

Approximate 1-percent-annual-chance floodplain boundaries in some portions of the study areas were taken directly from the previously printed FIS for the Towns of Berlin, Boylston, Charlton, Dudley, Harvard, Lancaster, Leicester, Shrewsbury, Southborough, Southbridge and Sturbridge (References 236 through 246). In Berlin, Shrewsbury, and Southbridge, topographic mapping was also used to delineate the 1-percent-annual-chance floodplain boundaries (References 133, 232, and 234).

Approximate 1-percent-annual-chance floodplain boundaries were delineated using the previously printed FIS for the Towns of Auburn, Millbury, Northbridge, Spencer and West Boylston and using previously printed FIRMs in Northbridge (References 247 and 248).

In the Town of Blackstone, for areas in the community studied by approximate methods, the boundary of the 1-percent-annual-chance flood was delineated by correlating field inspection and manual calculations of flood profiles to topographic mapping.

In the Town of Bolton, the approximate study areas were delineated by use of USGS quadrangle maps for Clinton and Hudson at a scale of 1:24000, with 10-foot contour intervals (Reference 249) and taken from the Town of Bolton FIS (Reference 250).

In the Town of Clinton, the flood boundaries of the streams studied by approximate methods were delineated by field inspection of the flood-prone areas and by using the appropriate Special Flood Hazard Area Maps from the Town of Clinton FIS (Reference 251).

In the Towns of Douglas, Grafton and Millville, the flood boundaries for the streams studied by approximate methods were delineated from the previous FIS reports (References 252 through 254).

For portions of the Mumford River and Southwick Brook in the Town of Douglas, the floodway is coincident with the channel banks.

In the Town of Mendon, for the areas studied by approximate methods, the boundary of the 1-percent-annual-chance flood was delineated from the previously printed FIS (Reference 255).

In the Town of Milford, for the areas studied by approximate methods, the boundary of the 1-percent-annual-chance flood was delineated from the previously printed FIS (Reference 256).

In the Town of Northborough, flood boundaries for the areas of approximate study were determined from the previously printed FIS. In Northborough, updated topographic

mapping was also used to delineate the 1-percent-annual-chance floodplain boundaries (Reference 231).

In the Town of Oxford, for the streams studied by approximate methods, the floodways were delineated using the previously printed FIS (Reference 257).

In the Town of Paxton, for the streams studied by approximate methods, the boundaries were delineated using the previously printed FIS (Reference 258). There were no streams studied in detail in Paxton.

In the Towns of Sutton, Upton and Uxbridge, the flood boundaries for the streams studied by approximate methods were delineated using the previously printed FIS (References 259 through 261).

In the Town of Webster, for the streams studied by approximate methods, some of the 1-percent-annual-chance floodplain boundaries were updated to reflect current conditions (Reference 262).

In the Town of Westborough, flood boundaries for areas studied by approximate methods were delineated on topographic maps at a scale of 1:4,800, with a contour interval of 2 feet (Reference 233).

In the City of Worcester, approximate area flood boundaries based on the 1-percent-annual-chance water surface elevations were delineated on topographic maps at a scale of 1:1,200, with a contour interval of 2 feet (Reference 203).

Concord River Watershed Partial Countywide Analysis

For each stream studied by detailed methods in this countywide revision, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using an automated process. The process compares a ground surface DEM, created from the LiDAR data collected for the Concord River Watershed, to a water surface DEM. HEC-GeoRAS produces a Triangular Irregular Network (TIN) from the water surface elevations produced at each cross section within a model reach. This TIN is subsequently transformed into a DEM and compared to the ground surface DEM. The floodplain boundary is created at the location where the two DEMs intersect each other. This process is run twice to provide both the 1- and 0.2-percent-annual chance flood hazard lines. The location of the resulting flood boundary lines were visually verified for accuracy using the contours created from the terrain data. The boundaries were revised as necessary and tie-ins were completed where applicable. A Floodplain Boundary Standard (FBS) check was run to ensure compliance with the requirements outlined in FEMA Procedural Memorandum 38.

A similar process was completed for those streams studied by redelineation. The result is a more accurate floodplain boundary because the LiDAR data collected for this project is more accurate and has a higher resolution than the terrain data used for the mapping in the previous studies (Reference 1).

Only the 1-percent-annual-chance floodplain boundary is shown on the FIRM for all studies completed using approximate analyses. The boundary for the 1-percent-annual-chance floodplain boundary was delineated using the same process described above.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 12, Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water surface elevation (WSEL) of the base flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

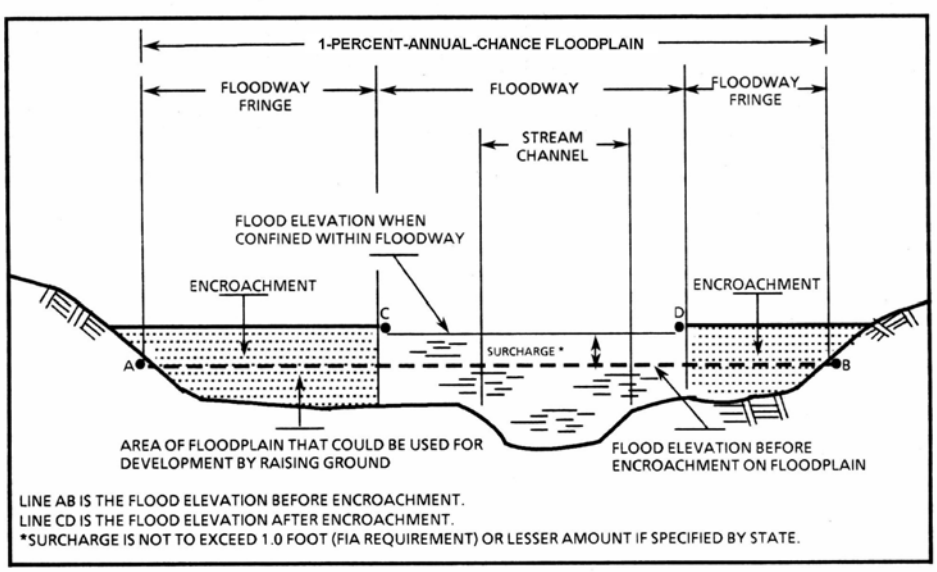

Figure 1. Floodway Schematic

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	111,999	79 / 363 [2]	2158	1.1	214.0	214.0	214.5	0.5
B	113,023	154 / 233 [2]	1305	1.8	214.2	214.2	214.8	0.6
C	113,336	152	1033	2.3	214.3	214.3	214.9	0.6
D	116,245	228	1301	1.8	215.6	215.6	216.4	0.8
E	117,076	342	1798	1.3	215.8	215.8	216.7	0.9
F	119,234	112	706	0.9	216.0	216.0	216.9	0.9
G	125,629	521	6758	0.4	232.6	232.6	232.7	0.1
H	125,860	295	5896	0.4	232.6	232.6	232.7	0.1
I	128,566	439	6812	0.4	232.6	232.6	232.7	0.1
J	131,131	40	209	9.3	232.6	232.6	233.0	0.4
K	132,287	170	820	2.4	237.6	237.6	238.5	0.9
L	133,011	35	195	10.0	240.4	240.4	240.4	0.0
M	133,111	49	351	5.6	243.7	243.7	243.7	0.0
N	133,201	50	518	3.8	243.9	243.9	243.9	0.0
O	133,259	90	898	2.2	249.8	249.8	249.8	0.0
P	133,322	140	621	3.2	251.5	251.5	251.5	0.0
Q	133,417	180	1457	1.4	251.6	251.6	251.6	0.0
R	133,491	180	1445	1.4	251.6	251.6	251.6	0.0
S	133,591	250	3055	0.6	251.7	251.7	251.7	0.0
T	133,692	200	1898	1.0	251.7	251.7	251.7	0.0
U	134,331	120	860	2.2	251.7	251.7	251.7	0.0
V	135,529	80	424	4.6	252.0	252.0	252.0	0.0
W	136,448	80	368	5.0	253.4	253.4	253.7	0.3
X	136,548	47	320	5.8	253.5	253.5	253.9	0.4
Y	136,648	34	272	6.9	253.6	253.6	254.0	0.4
Z	137,889	38	257	6.7	257.0	257.0	257.2	0.2
AA	137,990	14	165	10.5	262.6	262.6	262.6	0.0

[1] FEET ABOVE CONFLUENCE WITH CONCORD RIVER

[2] WIDTH WITHIN THE COUNTY / TOTAL WIDTH

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

ASSABET RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	138,111	53	428	4.0	266.1	266.1	266.3	0.2
AC	138,211	60	507	3.4	266.3	266.3	266.5	0.2

[1] FEET ABOVE CONFLUENCE WITH CONCORD RIVER

[2] WIDTH WITHIN THE COUNTY / TOTAL WIDTH

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

ASSABET RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	159,444	25	137	5.4	274.1	274.1	275.1	1.0
B	160,642	30	145	5.1	276.9	276.9	277.3	0.4
C	161,645	40	191	3.8	278.4	278.4	278.9	0.5
D	161,761	37	122	6.0	279.5	279.5	280.5	1.0
E	161,862	15	63	11.7	281.5	281.5	281.5	0.0
F	162,210	25	83	8.9	284.3	284.3	285.3	1.0
G	162,342	64	144	5.1	286.9	286.9	286.9	0.0
H	162,701	35	100	7.3	286.9	286.9	286.9	0.0
I	162,817	18	87	8.5	286.9	286.9	287.9	1.0
J	162,934	38	96	7.6	288.2	288.2	288.2	0.0
K	163,451	23	73	10.1	295.9	295.9	295.9	0.0
L	163,562	25	126	5.9	297.3	297.3	298.3	1.0
M	163,673	20	69	10.6	298.0	298.0	298.3	0.3
N	164,771	25	75	9.8	311.5	311.5	311.5	0.0

[1] FEET ABOVE CONFLUENCE WITH CONCORD RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

ASSABET RIVER (LOWER REACH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	116	240	0.5	312.3	312.3	313.3	1.0
B	830	9	15	7.5	319.5	319.5	319.5	0.0
C	2,180	10	25	4.5	330.1	330.1	330.5	0.4
D	2,294	10	27	4.2	330.8	330.8	331.8	1.0
E	2,408	10	25	4.6	331.8	331.8	332.0	0.2
F	2,828	6	14	6.5	333.8	333.8	334.3	0.5
G	2,955	6	19	4.7	334.4	334.4	335.4	1.0
H	3,081	37	31	2.9	335.7	335.7	336.0	0.3
I	3,881	6	11	7.9	351.6	351.6	351.8	0.2

[1] FEET ABOVE MOUTH AT ASSABET RESEVOIR

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

ASSABET RIVER (UPPER REACH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	750	30	117	1.3	268.8	268.8	268.8	0.0
B	861	8	19	8.4	268.9	268.9	268.9	0.0
C	1,663	9	25	6.3	292.0	292.0	292.9	0.9
D	2,983	11	21	7.5	315.2	315.2	315.9	0.7
E	3,115	71	274	0.6	319.7	319.7	319.7	0.0
F	3,216	68	226	0.7	319.7	319.7	319.8	0.1
G	3,865	66	129	1.2	319.8	319.8	319.8	0.0

[1] FEET ABOVE MOUTH CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

ASSABET RIVER BRANCH NO. 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	41	85	2.1	307.1	305.8 [2]	305.8	0.0
B	150	40	78	2.3	307.1	306.3 [2]	306.3	0.0
C	1,680	34	78	2.2	309.6	309.6	309.7	0.1
D	1,890	8	38	4.6	310.5	310.5	311.1	0.6
E	3,230	20	27	6.6	342.7	342.7	343.5	0.8
F	3,390	22	49	3.6	347.6	347.6	347.7	0.1
G	3,860	15	24	7.3	355.8	355.8	355.8	0.0
H	3,960	11	38	4.6	357.8	357.8	357.8	0.0
I	4,190	30	55	3.2	358.6	358.6	359.1	0.5
J	5,300	24	70	1.8	359.8	359.8	360.8	1.0

[1] FEET ABOVE CONFLUENCE WITH LAKE RIPPLE

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER FROM LAKE RIPPLE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

AXTELL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	787	90	654	6.3	478.7	478.7	478.7	0.0
B	1,917	263	939	2.9	479.0	479.0	479.3	0.3
C	2,467	26	267	2.6	482.3	482.3	482.3	0.0
D	2,692	66	205	3.3	482.4	482.4	482.4	0.0
E	4,052	24	226	3.0	482.6	482.6	482.7	0.1
F - H*								

[1] FEET ABOVE CONFLUENCE WITH CURTIS POND OUTFLOW AND MIDDLE RIVER

* NO FLOODWAY DATA COMPUTED

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BEAVER BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	200	210	823	0.3	265.6	265.6	265.6	0.0
B	1,150	128	594	0.4	265.6	265.6	265.6	0.0
C	2,808	50	208	0.7	265.7	265.7	265.8	0.1
D	3,365	65	282	0.5	265.7	265.7	265.8	0.1
E	3,805	46	214	0.7	269.0	269.0	269.0	0.0
F	3,985	140	518	0 3	269.0	269.0	269.0	0.0
G	4,980	455	1596	0.1	269.0	269.0	269.0	0.0
H	5,280	724	1877	0.1	269.0	269.0	269.0	0.0

[1] FEET ABOVE SHAKER ROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BENNETTS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	240	515	3735	0.1	308.7	308.7	309.7	1.0
B	415	715	6254	0.1	308.8	308.8	309.7	0.9
C	1,230	294	1191	0.5	308.8	308.8	309.7	0.9
D	1,450	200	594	0.9	310.3	310.3	310.4	0.1
E	1,658	225	559	1.0	310.3	310.3	310.4	0.1
F	1,770	450	2864	0.2	314.6	314.6	314.6	0.0
G	2,840	55	212	2.5	314.6	314.6	314.6	0.0
H	4,020	70	100	5.4	316.6	316.6	316.8	0.2
I	4,545	20	102	5.3	319.9	319.9	320.8	0.9
J	5,030	155	1202	0.5	339.5	339.5	339.5	0.0
K	6,743	40	83	6.5	339.9	339.9	340.4	0.5
L	7,793	31	100	5.4	349.5	349.5	350.3	0.8
M	8,061	14	44	8.6	355.1	355.1	355.1	0.0
N	8,296	45	386	1.0	362.5	362.5	362.5	0.0
O	9,016	22	60	6.3	374.0	374.0	374.7	0.7
P	9,166	150	665	0.6	384.9	384.9	385.2	0.3
Q	10,170	30	114	3.1	384.9	383.2	384.2	1.0
R	10,300	30	99	3.6	384.9	383.5	384.3	0.8
S	10,430	23	68	5.2	384.9	384.4	384.8	0.4
T	10,750	33	58	6.1	389.2	389.2	389.5	0.3
U	10,865	15	68	5.2	390.0	390.0	390.9	0.9
V	10,980	20	104	3.4	391.1	391.1	391.6	0.5
W	11,580	20	123	2.9	392.1	392.1	392.7	0.6
X	11,700	33	224	1.6	396.0	396.0	396.0	0.0
Y	11,780	30	265	1.3	396.0	396.0	396.0	0.0
Z	11,875	31	267	1.3	397.4	397.4	397.4	0.0
AA	11,920	30	300	1.2	397.4	397.4	397.4	0.0

[1] FEET ABOVE CONFLUENCE WITH QUINSIGAMOND RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BIG BUMMET BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	12,830	80	391	0.9	400.9	400.9	401.9	1.0
AC	13,430	32	50	7.1	403.9	403.9	403.9	0.0
AD	13,540	83	481	0.7	409.1	409.1	409.1	0.0
AE	13,650	100	558	0.6	409.1	409.1	409.1	0.0
AF	15,880	21	40	7.7	422.3	422.3	422.3	0.0
AG	17,330	50	112	2.8	433.1	433.1	433.8	0.7
AH	19,080	29	59	5.2	443.2	443.2	443.4	0.2
AI	19,190	30	160	1.9	448.5	448.5	448.5	0.0
AJ	19,210	30	179	1.7	448.5	448.5	448.5	0.0
AK	19,290	30	160	1.9	448.5	448.5	448.5	0.0
AL	19,305	286	856	0.4	448.6	448.6	448.6	0.0
AM	19,915	50	67	4.6	452.7	452.7	453.4	0.7
AN	21,330	20	71	4.3	466.5	466.5	466.6	0.1

[1] FEET ABOVE CONFLUENCE WITH QUINSIGAMOND RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BIG BUMMET BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	84,785	137	3009	6.2	159.1	159.1	159.4	0.3
B	85,996	134	1826	11.0	159.3	159.3	159.7	0.5
C	86,924	107	1551	11.8	162.8	162.8	163.3	0.5
D	87,437	97	1200	15.3	163.1	163.1	164.0	0.9
E	87,845	288	2065	9.5	168.3	168.3	168.7	0.4
F	87,985	124	1865	9.8	168.7	168.7	169.7	1.0
G	88,177	366	2259	8.4	171.2	171.2	171.6	0.4
H	88,779	456	5291	5.0	173.3	173.3	173.6	0.3
I	89,462	299	4258	5.2	173.8	173.8	174.0	0.2
J	94,835	141	966	15.3	186.8	186.8	186.8	0.0
K	95,300	392	4240	5.6	199.4	199.4	199.4	0.0
L	96,600	630	6931	2.7	200.0	200.0	200.0	0.0
M	97,447	470	4282	4.9	199.9	199.9	200.0	0.0
N	99,385	276	3692	4.2	200.4	200.4	200.5	0.0
O	99,606	180	2715	5.8	200.4	200.4	200.4	0.0
P	100,133	698	5211	5.8	203.9	203.9	203.9	0.0
Q	101,474	255	3002	6.4	204.2	204.2	204.2	0.0
R	101,851	326	4639	5.6	206.8	206.8	206.9	0.0
S	103,740	490	3593	6.3	207.5	207.5	207.5	0.0
T	104,660	193	2775	5.2	208.6	208.6	208.7	0.1
U	105,197	158	2231	6.5	209.3	209.3	209.3	0.0
V	105,550	160	1909	8.8	209.4	209.4	209.4	0.0
W	109,151	485	3438	7.4	213.2	213.2	213.9	0.8
X	112,371	355	3490	5.8	215.9	215.9	216.3	0.5
Y	116,500	395	4703	5.7	217.9	217.9	218.9	1.0
Z	121,470	660	6966	4.2	220.3	220.3	221.0	0.7
AA	122,846	600	5388	5.3	220.6	220.6	221.4	0.8

[1] FEET ABOVE MAIN STREET IN THE CITY OF PAWTUCKET, RI

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BLACKSTONE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	123,541	460	4833	5.9	222.5	222.5	222.8	0.4
AC	124,154	450	5783	5.2	222.7	222.7	223.2	0.4
AD	124,722	1000	15376	1.2	223.9	223.9	224.5	0.5
AE	130,796	1110	10964	3.4	224.0	224.0	224.6	0.6
AF	135,121	1025	8325	4.2	224.4	224.4	225.2	0.8
AG	138,103	366	2526	5.1	225.1	225.1	226.0	0.9
AH	138,527	524	3747	4.9	226.1	226.1	226.7	0.5
AI	139,140	787	4303	5.1	226.4	226.4	227.0	0.6
AJ	143,316	1148	3890	4.5	228.8	228.8	229.5	0.8
AK	146,915	241	1859	4.6	233.0	233.0	233.5	0.5
AL	147,138	854	11330	1.4	247.9	247.9	248.0	0.1
AM	147,250	583	13929	0.6	247.9	247.9	248.0	0.1
AN	149,088	400	6632	1.5	247.9	247.9	248.0	0.1
AO	151,094	510	7594	1.6	247.9	247.9	248.0	0.1
AP	153,132	825	9345	2.2	247.9	247.9	248.1	0.2
AQ	156,223	1585	12825	2.1	248.0	248.0	248.2	0.2
AR	159,040	1505	5154	5.2	248.1	248.1	248.4	0.3
AS	162,881	1034	3585	6.7	248.9	248.9	249.5	0.6
AT	164,391	671	1715	8.2	250.8	250.8	251.2	0.4
AU	164,636	865	5145	3.6	253.9	253.9	254.1	0.2
AV	166,975	900	5103	3.7	254.5	254.5	255.0	0.5
AW	168,491	804	4006	3.8	254.9	254.9	255.5	0.6
AX	169,548	140	1388	4.5	255.6	255.6	256.1	0.5
AY	169,596	96	993	6.3	256.2	256.2	256.5	0.4
AZ	169,712	99	908	6.8	258.3	258.3	258.3	0.0
BA	171,247	570	4002	3.3	259.2	259.2	259.1	0.0
BB	173,044	1010	1699	5.0	260.6	260.6	260.7	0.1

[1] FEET ABOVE MAIN STREET IN THE CITY OF PAWTUCKET, RI

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BLACKSTONE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	175,391	145	1311	6.3	263.6	263.6	263.6	0.0
BD	175,890	78	973	7.8	264.8	264.8	265.0	0.3
BE	177,223	245	1888	5.7	266.7	266.7	267.3	0.6
BF	177,604	67	849	8.7	266.9	266.9	267.3	0.4
BG	177,890	145	1215	7.6	267.4	267.4	268.4	1.0
BH	178,161	230	2365	3.8	268.5	268.5	269.2	0.7
BI	181,489	299	2069	5.5	270.8	270.8	271.2	0.4
BJ	185,115	162	1341	7.2	274.2	274.2	274.5	0.3
BK	187,939	840	3395	4.7	276.2	276.2	277.1	0.9
BL	188,581	622	2287	4.5	276.6	276.6	277.3	0.7
BM	189,205	1150	3982	2.5	281.3	281.3	281.4	0.0
BN	192,312	435	1492	7.0	283.7	283.7	283.8	0.1
BO	192,720	155	1441	5.4	284.2	284.2	284.3	0.2
BP	193,046	137	1519	5.0	285.4	285.4	285.6	0.3
BQ	193,720	228	2060	3.8	286.1	286.1	286.4	0.3
BR	194,299	1520	7550	2.2	293.2	293.2	293.2	0.0
BS	196,991	935	3486	5.1	293.6	293.6	293.7	0.1
BT	197,656	1017	3562	6.8	293.9	293.9	294.2	0.3
BU	199,249	974	2503	7.4	295.8	295.8	296.3	0.5
BV	199,975	434	877	12.3	298.9	298.9	299.9	1.0
BW	200,714	171	1421	6.6	304.0	304.0	304.1	0.1
BX	201,224	278	1434	7.7	304.9	304.9	305.1	0.1
BY	201,797	102	690	11.2	305.3	305.3	305.4	0.1
BZ	202,450	125	541	14.6	309.4	309.4	309.4	0.0
CA	203,053	476	2091	6.6	313.6	313.6	313.6	0.0
CB	204,720	64	616	11.5	316.7	316.7	316.9	0.2
CC	204,986	78	740	11.2	318.2	318.2	318.7	0.4

[1] FEET ABOVE MAIN STREET IN THE CITY OF PAWTUCKET, RI

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BLACKSTONE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CD	205,588	215	1736	6.0	321.6	321.6	321.9	0.3
CE	205,870	426	2436	3.3	322.2	322.2	322.4	0.2
CF	206,956	319	953	7.9	322.5	322.5	322.7	0.2
CG	207,483	154	814	10.8	323.9	323.9	324.1	0.2
CH	208,018	128	769	10.1	326.0	326.0	326.2	0.1
CI	208,475	259	2010	3.8	338.8	338.8	339.4	0.6
CJ	210,594	381	2426	3.0	339.2	339.2	339.8	0.5
CK	211,021	330	2252	3.7	339.4	339.4	339.9	0.5
CL	212,439	197	1206	7.4	340.2	340.2	340.6	0.3
CM	214,614	114	647	11.0	344.1	344.1	344.2	0.0
CN	215,253	229	1435	6.7	352.9	352.9	353.1	0.2
CO	216,013	194	1379	6.3	353.1	353.1	353.8	0.7
CP	216,462	192	1130	7.0	355.2	355.2	356.2	1.0
CQ	216,756	78	741	9.3	355.2	355.2	356.1	0.9
CR	217,213	63	767	8.7	359.0	359.0	359.1	0.1
CS	218,279	109	504	12.3	361.5	361.5	361.5	0.0
CT	218,784	64	435	15.3	369.3	369.3	369.4	0.1
CU	219,030	63	582	12.7	380.5	380.5	380.5	0.0
CV	219,165	83	790	10.8	381.7	381.7	381.7	0.0
CW	219,627	106	517	14.3	382.7	382.7	382.7	0.0
CX	219,862	95	1124	6.2	392.8	392.8	393.0	0.2
CY	219,956	110	1291	5.6	393.0	393.0	393.2	0.2
CZ	220,819	67	729	8.3	393.4	393.4	393.6	0.2
DA	220,978	86	825	8.1	393.7	393.7	393.8	0.2
DB	221,187	113	1188	5.7	394.5	394.5	394.7	0.2
DC	222,108	160	1392	6.6	394.7	394.7	395.1	0.4
DD	222,583	116	1312	4.7	395.6	395.6	395.9	0.3

[1] FEET ABOVE MAIN STREET IN THE CITY OF PAWTUCKET, RI

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BLACKSTONE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DE	223,033	147	1512	4.0	395.8	395.8	396.1	0.4
DF	223,278	81	1001	5.8	396.4	396.4	396.8	0.4
DG	223,714	68	770	8.1	396.7	396.7	397.1	0.4
DH	224,635	173	887	7.7	397.9	397.9	398.3	0.4
DI	228,325	192	1293	7.3	403.1	403.1	404.0	0.9
DJ	228,846	164	1201	6.9	404.1	404.1	404.8	0.7
DK	229,396	100	798	8.0	405.3	405.3	405.6	0.3
DL	229,869	121	1214	5.2	406.4	406.4	406.5	0.1
DM	230,289	155	1388	6.7	407.7	407.7	407.7	0.0
DN	231,982	191	1218	7.0	408.4	408.4	408.9	0.6
DO	232,661	153	1210	4.4	409.1	409.1	410.1	1.0
DP	233,019	181	1368	5.0	409.7	409.7	410.6	0.9
DQ	233,214	194	1261	5.6	410.0	410.0	410.7	0.6
DR	233,550	455	1734	5.3	411.8	411.8	411.8	0.0
DS	233,740	502	2449	3.6	412.0	412.0	412.0	0.0
DT	234,522	196	1459	3.7	412.2	412.2	412.4	0.1
DU	234,728	228	1680	3.5	412.3	412.3	412.5	0.2
DV	235,626	265	2121	4.9	417.1	417.1	417.6	0.5
DW	237,292	103	852	7.5	417.5	417.5	418.0	0.4
DX	237,861	88	710	8.6	419.3	419.3	419.6	0.3
DY	238,039	88	866	6.7	420.5	420.5	421.0	0.5
DZ	238,371	95	767	7.9	420.6	420.6	421.1	0.5
EA	238,735	74	629	9.3	420.8	420.8	421.1	0.3
EB	239,667	84	653	10.7	422.7	422.7	422.7	0.0
EC	240,193	182	760	11.2	423.2	423.2	423.4	0.2
ED	240,665	685	1858	4.4	426.1	426.1	426.1	0.0
EE	241,753	75	658	8.7	426.9	426.9	426.9	0.0

[1] FEET ABOVE MAIN STREET IN THE CITY OF PAWTUCKET, RI

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BLACKSTONE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
EF	242,835	160	766	9.5	429.6	429.6	429.6	0.0
EG	243,094	87	649	9.9	431.4	431.4	431.4	0.0
EH	243,266	63	599	9.6	432.9	432.9	433.0	0.1
EI	243,429	62	714	7.8	433.8	433.8	433.9	0.1
EJ	243,835	30	304	19.2	434.0	434.0	434.0	0.0
EK	243,864	50	498	13.3	438.5	438.5	439.4	0.9
EL	244,003	70	829	10.0	441.3	441.3	441.6	0.3
EM	244,117	44	615	9.8	441.2	441.2	441.6	0.3
EN	244,264	57	673	10.0	441.4	441.4	441.7	0.3
EO	244,480	82	1138	5.2	443.4	443.4	443.9	0.6

[1] FEET ABOVE MAIN STREET IN THE CITY OF PAWTUCKET, RI

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BLACKSTONE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,100	265	1236	0.9	227.2	221.3 [2]	221.5	0.2
B	2,280	165	80 0	1.4	227.2	221.4 [2]	221.7	0.3
C	4,470	175	982	1.1	227.2	221.6 [2]	222.0	0.4
D	6,070	400	2219	0.4	227.2	221.6 [2]	222.0	0.4
E	7,530	100	386	2.1	227.2	221.8 [2]	222.3	0.5
F	7,950	55	193	4.2	227.2	222.6 [2]	223.1	0.5
G	8,830	200	990	0.7	235.4	235.4	235.4	0.0
H	9,330	36	168	4.2	235.5	235.5	235.6	0.1
I	9,730	25	98	7.2	236.5	236.5	236.8	0.3
J	10,560	31	118	6.0	240.9	240.9	241.8	0.9
K	11,240	28	121	5.8	244.3	244.3	245.0	0.7
L	11,630	35	143	4.9	246.2	246.2	246.7	0.5
M	11,920	85	376	1.9	250.3	250.3	250.3	0.0
N	12,150	100	528	1.3	250.4	250.4	250.4	0.0
O	12,960	175	837	0.8	250.4	250.4	250.5	0.1
P	14,860	300	1112	0.6	250.5	250.5	250.7	0.2
Q	15,375	130	709	1.8	251.5	251.5	251.6	0.1
R	16,150	100	591	2.1	251.5	251.5	251.7	0.2
S	18,150	185	915	1.4	252.6	252.6	253.3	0.7
T	19,295	190	817	1.2	255.5	255.5	255.5	0.0
U	20,490	125	403	2.4	255.7	255.7	256.0	0.3
V	22,140	298	786	0.6	256.1	256.1	256.9	0.8
W	23,550	76	214	2.1	276.0	276.0	276.0	0.0
X	24,350	160	212	2.1	284.0	284.0	284.5	0.5
Y	25,152	180	394	1.1	301.8	301.8	301.8	0.0
Z	26,220	310	1317	0.3	316.9	316.9	316.9	0.0
AA	27,070	50	149	2.9	335.0	335.0	335.0	0.0

[1] FEET ABOVE BARNUM ROAD

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM NONACOICUS BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BOWERS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	27,650	80	310	1.4	335.3	335.3	335.4	0.1
AC	28,510	170	617	0.7	335.4	335.4	335.8	0.4
AD	29,630	140	634	0.7	335.5	335.5	336.0	0.5
AE	30,680	40	208	2 5	339.5	339.5	339.5	0.0
AF	31,700	40	235	2.2	339.5	339.5	340.4	0.9
AG	38,995	22	46	2.4	339.5	339.5	340.4	0.9
AH	39,587	60	181	0.6	366.6	366.6	366.6	0.0
AI	39,950	90	266	0.4	366.6	366.6	366.6	0.0
AJ	40,675	85	311	0.4	370.4	370.4	370.4	0.0
AK	41,075	55	206	0.5	370.4	370.4	370.4	0.0
AL	41,535	50	108	1.0	370.4	370.4	370.5	0.1
AM	41,747	280	662	0.2	373.1	373.1	373.1	0.0

[1] FEET ABOVE BARNUM ROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BOWERS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-240	34	98	3.9	449.1	449.1	450.1	1.0
B	40	35	124	3.0	452.2	452.2	452.2	0.0
C	1,290	40	87	4.3	452.7	452.7	453.5	0.8
D	2,040	217	299	1.2	453.6	453.6	454.6	1.0
E	2,890	70	65	5.5	468.3	468.3	468.3	0.0
F	3,440	106	281	1.3	470.5	470.5	470.5	0.0
G	4,140	20	77	4.6	471.9	471.9	471.9	0.0
H	5,324	127	525	0.6	476.4	476.4	476.4	0.0
I	6,399	208	1030	0.3	476.4	476.4	476.4	0.0
J	7,749	28	134	2.2	476.5	476.5	476.5	0.0
K	8,626	110	60	4.3	483.4	483.4	483.4	0.0

[1] FEET ABOVE U.S. HIGHWAY 20

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

BROAD MEADOW BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.028	75	370	11.3	421.9	421.9	421.9	0.0
B	0.135	45	327	12.9	424.1	424.1	424.6	0.5
C	0.323	35	267	15.7	432.2	432.2	432.3	0.1
D	0.498	50	319	13.2	439.0	439.0	439.1	0.1
E	0.555	60	375	11.2	441.9	441.9	442.3	0.4
F	0.652	45	305	13.8	446.2	446.2	446.2	0.0
G	0.762	200	823	5.1	451.7	451.7	452.3	0.6
H	0.883	50	355	11.8	456.2	456.2	456.2	0.0
I	0.985	200	754	5.6	461.5	461.5	461.8	0.3
J	1.069	150	759	5.5	464.4	464.4	464.9	0.5
K	1.408	150	521	8.1	475.1	475.1	475.1	0.0
L	1.707	100	515	8.2	486.0	486.0	486.0	0.0
M	1.743	200	1589	2.6	490.9	490.9	491.7	0.8
N	1.824	140	945	4.0	491.2	491.2	492.0	0.8
O	1.922	95	462	8.1	494.2	494.2	494.2	0.0
P	2.503	60	298	12.6	511.7	511.7	511.8	0.1
Q	2.557	45	310	12.2	517.3	517.3	517.3	0.0
R	2.749	240	692	5.0	526.0	526.0	526.7	0.7
S	3.029	125	441	7.8	540.1	540.1	540.4	0.3
T	3.282	70	367	9.4	555.5	555.5	555.5	0.0
U	3.311	130	1130	3.0	563.1	563.1	563.1	0.0
V	3.437	100	522	6.6	563.2	563.2	563.2	0.0
W	3.921	60	377	9.1	580.2	580.2	580.3	0.1
X	4.252	170	624	5.5	594.7	594.7	595.1	0.4
Y	4.952	125	788	4.4	618.3	618.3	619.1	0.8
Z	5.090	180	826	2.5	620.1	620.1	620.8	0.7
AA	5.315	90	287	7.1	627.9	627.9	628.4	0.5

[1] MILES ABOVE CONFLUENCE WITH QUINEBAUG RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

CADY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	5.476	70	256	8.0	641.4	641.4	641.4	0.0
AC	5.506	50	278	7.3	643.9	643.9	643.9	0.0
AD	5.712	25	153	13.3	665.5	665.5	665.5	0.0
AE	5.720	80	216	9.4	669.9	669.9	670.0	0.1

[1] MILES ABOVE CONFLUENCE WITH QUINEBAUG RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

CADY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.231	20	127	2.3	578.9	578.9	579.0	0.1
B	0.343	30	119	2.4	579.0	579.0	579.5	0.5
C	0.391	40	171	1.7	579.1	579.1	579.9	0.8
D	0.429	60	243	1.2	579.2	579.2	580.1	0.9
E	0.568	15	50	5.7	585.3	585.3	585.9	0.6
F	0.689	15	51	5.7	592.3	592.3	593.0	0.7
G	0.708	10	30	9.5	594.1	594.1	594.4	0.3
H	0.863	20	60	4.8	608.0	608.0	608.8	0.8
I	1.019	10	29	9.8	635.2	635.2	635.4	0.2
J	1.166	20	54	5.3	653.7	653.7	654.2	0.5
K	1.408	40	230	1.2	654.6	654.6	655.3	0.7
L	1.680	25	45	6.4	658.1	658.1	658.4	0.3

[1] MILES ABOVE CONFLUENCE WITH QUINEBAUG RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

CEDAR MEADOW BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.125	775	6601	0.1	575.2	575.2	576.0	0.8
B	0.645	755	6296	0.1	575.2	575.2	576.0	0.8
C	0.979	630	5176	0.1	575.2	575.2	576.0	0.8
D	1.532	145	1007	0.4	575.2	575.2	576.0	0.8
E	1.589	30	158	2.4	575.2	575.2	576.0	0.8

[1] MILES ABOVE CEDAR POND DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

CEDAR POND

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-40	21	82	4.4	272.6	272.6	273.5	0.9
B	65	15	61	5.9	273.5	273.5	274.0	0.5
C	745	73	229	1.6	275.2	275.2	276.2	1.0
D	2,130	15	39	9.2	280.5	280.5	280.5	0.0
E	2,235	15	66	5.5	282.9	282.9	282.9	0.0
F	2,750	16	74	4.9	285.6	285.6	286.6	1.0
G	2,895	73	813	0.4	298.1	298.1	298.1	0.0
H	4,385	80	547	0.7	298.2	298.2	298.2	0.0
I	4,540	30	195	1.9	299.0	299.0	299.0	0.0
J	4,685	148	957	0.4	299.1	299.1	299.2	0.1

[1] FEET ABOVE STATION STREET

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

CENTER BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	31,395	*	3524	0.2	272.0	272.0	272.0	0.0
B	32,355	*	9810	0.1	272.0	272.0	272.0	0.0
C	33,335	*	6744	0.1	272.0	272.0	272.0	0.0
D	34,125	*	137	6.2	272.1	272.1	272.1	0.0
E	34,305	*	153	3.3	273.7	273.7	274.0	0.3
F	35,595	50	178	2.8	277.4	277.4	277.4	0.0
G	36,695	129	477	1.1	280.6	280.6	280.6	0.0
H	37,255	50	356	1.4	284.3	284.3	284.9	0.6
I	37,600	20	113	4.4	284.6	284.6	285.0	0.4
J	38,455	20	84	6.0	288.3	288.3	288.8	0.5
K	38,567	*	51	9.9	292.2	292.2	292.2	0.0
L	38,677	*	4393	0.1	299.3	299.3	299.3	0.0
M	39,055	*	904	0.6	299.3	299.3	299.3	0.0
N	39,093	*	53	9.4	299.3	299.3	299.3	0.0
O	39,655	140	222	2.3	306.3	306.3	307.1	0.8
P	39,796	18	83	6.0	309.4	309.4	310.1	0.7
Q	40,675	58	213	2.4	317.5	317.5	318.5	1.0
R	41,605	80	382	1.3	319.1	319.1	320.1	1.0
S	42,615	126	446	1.1	320.2	320.2	321.2	1.0
T	42,725	440	203	2.5	322.2	322.2	322.2	0.0
U	43,800	105	413	0.8	323.1	323.1	323.9	0.8
V	43,955	52	257	1.3	323.1	323.1	324.0	0.9
W	45,315	119	560	0.6	323.4	323.4	324.3	0.9

[1] FEET ABOVE BOX POND DAM

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

CHARLES RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	671	40	101	5.2	434.4	434.4	434.4	0.0
B	1,558	20	108	4.8	444.7	444.7	444.7	0.0
C	2,376	60	244	2.1	447.0	447.0	447.9	0.9
D	2,746	30	137	3.8	447.4	447.4	448.2	0.8
E	2,904	70	124	4.2	450.9	450.9	450.9	0.0
F	3,923	20	55	9.5	469.0	469.0	469.0	0.0
G	4,382	14	45	10.2	474.2	474.2	474.2	0.0
H	5,776	20	50	9.0	496.4	496.4	496.4	0.0
I	6,774	40	78	5.8	529.1	529.1	529.1	0.0
J	7,614	30	127	3.6	538.6	538.6	539.0	0.4
K	8,944	40	161	2.4	551.7	551.7	552.1	0.4
L	9,076	40	57	6.8	558.8	558.8	558.8	0.0
M	12,144	30	51	7.5	564.3	564.3	564.3	0.0
N	14,261	21	48	6.3	581.2	581.2	581.2	0.0
O	14,874	40	48	6.3	635.6	635.6	635.6	0.0

[1] FEET ABOVE CONFLUENCE WITH QUINEBAUG RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COHASSE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	34	189	4.9	254.0	254.0	255.0	1.0
B	180	22	126	7.3	254.6	254.6	255.6	1.0
C	232	14	74	12.5	255.3	255.3	255.6	0.3
D	269	52	386	2.4	258.5	258.5	258.5	0.0
E	300	81	533	1.7	259.6	259.6	259.6	0.0
F	430	242	1022	0.9	259.8	259.8	259.8	0.0
G	690	462	1834	0.5	259.8	259.8	259.8	0.0
H	791	16	114	8.0	262.9	262.9	262.9	0.0
I	820	53	219	4.2	263.9	263.9	263.9	0.0
J	990	33	93	9.8	265.5	265.5	265.5	0.0
K	1,210	29	53	7.7	270.0	270.0	270.0	0.0
L	1,340	37	58	7.1	274.0	274.0	274.0	0.0
M	1,630	243	840	0.5	287.3	287.3	287.3	0.0
N	1,700	175	410	1.0	287.3	287.3	287.3	0.0
O	1,790	44	81	5.0	287.3	287.3	287.3	0.0
P	1,850	89	288	1.4	290.9	290.9	290.9	0.0
Q	1,987	48	165	2.5	291.6	291.6	291.6	0.0
R	2,034	7	33	12.3	291.6	291.6	291.6	0.0
S	2,166	34	192	2.1	294.4	294.4	294.4	0.0
T	2,367	78	502	0.8	294.5	294.5	294.5	0.0
U	3,043	363	1884	0.2	294.5	294.5	294.5	0.0
V	4,046	44	168	2.4	294.5	294.5	294.5	0.0
W	4,326	97	438	0.7	294.5	294.5	294.6	0.1
X	5,044	26	67	4.6	294.6	294.6	294.6	0.0
Y	6,184	57	201	1.3	295.7	295.7	296.5	0.8
Z	6,786	38	136	1.7	295.9	295.9	296.7	0.8
AA	6,897	5	21	11.3	297.8	297.8	297.8	0.0

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COLD HARBOR BROOK (LOWER REACH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	6,982	304	1628	0.1	300.8	300.8	300.8	0.0
AC	7,700	55	206	1.0	300.8	300.8	300.8	0.0
AD	8,661	29	69	2.6	301.0	301.0	301.2	0.2

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COLD HARBOR BROOK (LOWER REACH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	27,509	60	173	4.7	407.4	407.4	408.2	0.8
B	27,958	330	682	1.2	408.3	408.3	409.1	0.8
C	29,758	30	97	7.5	447.2	447.2	447.4	0.2

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COLD HARBOR BROOK (TOWN OF BOYLSTON)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	15,840	135	379	2.2	314.6	314.6	315.6	1.0
B	15,940	250	1088	0.8	318.3	318.3	318.3	0.0
C	16,479	268	1220	0.7	318.3	318.3	318.4	0.1
D	16,722	175	519	1.6	318.7	318.7	318.7	0.0
E	16,822	185	567	1.4	318.8	318.8	318.8	0.0
F	17,662	40	102	7.8	319.3	319.3	319.3	0.0
G	18,538	125	529	1.5	321.3	321.3	321.8	0.5
H	18,660	140	549	1.4	321.4	321.4	322.0	0.6
I	19,657	100	311	2.4	321.8	321.8	322.4	0.6
J	20,661	45	113	6.4	323.8	323.8	324.3	0.5
K	20,761	70	215	3.4	325.6	325.6	325.8	0.2
L	20,861	60	132	5.5	325.7	325.7	325.8	0.1
M	21,257	280	918	0.8	326.5	326.5	327.4	0.9
N	21,701	21	70	10.4	343.3	343.3	343.5	0.2
O	21,864	25	109	6.8	353.7	353.7	353.7	0.0
P	22,012	130	697	1.0	354.3	354.3	355.1	0.8
Q	22,187	80	192	3.9	354.3	354.3	355.1	0.8
R	22,218	12	59	12.6	360.8	360.8	360.8	0.0
S	22,276	13	89	0.3	366.0	366.0	366.0	0.0
T	22,297	13	90	8.4	366.1	366.1	366.1	0.0
U	22,392	230	1179	0.6	367.5	367.5	367.5	0.0
V	22,757	33	84	9.0	368.7	368.7	368.7	0.0
W	22,810	137	697	1.1	374.8	374.8	375.1	0.3
X	22,899	21	145	5.3	374.8	374.8	375.1	0.3
Y	23,068	151	952	0.8	378.3	378.3	378.3	0.0
Z	23,169	33	279	2.7	378.3	378.3	378.3	0.0

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COLD HARBOR BROOK (UPPER REACH)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	350	60	61	2.6	227.2	217.7 [2]	218.2	0.5
B	1,860	70	187	0.9	227.2	222.6 [2]	223.6	1.0
C	2,910	25	61	2.6	227.2	223.9 [2]	224.9	1.0
D	4,140	100	1080	0.1	239.2	239.2	239.3	0.1
E	4,800	100	734	0.1	239.2	239.2	239.3	0.1
F	5,600	80	411	0.2	239.2	239.2	239.3	0.1

[1] FEET ABOVE CONFLUENCE WITH BOWERS BROOK

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM BOWERS BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COLD SPRING BROOK (TOWN OF HARVARD)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	40	96	289	2.6	322.5	321.5 [2]	322.5	1.0
B	1,105	99	207	3.7	325.5	325.5	326.2	0.7
C	1,265	19	88	8.6	328.5	328.5	328.6	0.1
D	1,985	36	195	3.9	331.8	331.8	332.4	0.6
E	2,420	25	76	10.0	336.8	336.8	336.9	0.1
F	3,870	37	111	6.8	356.0	356.0	356.4	0.4
G	5,980	35	130	5.8	370.5	370.5	370.7	0.2
H	6,150	460	4814	0.2	383.3	383.3	383.3	0.0
I	7,250	130	592	1.3	383.3	383.3	383.3	0.0
J	8,370	22	73	10.4	383.5	383.5	383.5	0.0
K	9,040	58	296	2.6	386.2	386.2	387.1	0.9
L	9,400	38	88	8.6	389.9	389.9	389.9	0.0

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COLD SPRING BROOK (TOWN OF SUTTON)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	955	18	85	6.9	244.2	244.2	245.2	1.0
B	1,095	83	359	1.6	247.2	247.2	247.6	0.4
C	2,775	28	200	2.9	258.7	258.7	258.7	0.0
D	3,700	27	108	5.4	259.2	259.2	259.5	0.3
E	4,350	25	119	4.9	264.3	264.3	265.1	0.8
F	4,475	24	99	5.9	264.6	264.6	265.3	0.7
G	4,600	26	36	6.7	277.0	277.0	277.0	0.0
H	7,200	20	117	2.1	300.8	300.8	300.8	0.0
I	7,250	20	117	2.1	300.8	300.8	300.8	0.0
J	7,475	17	31	7.7	302.2	302.2	302.2	0.0
K	7,960	17	31	7.7	325.2	325.2	325.2	0.0

[1] FEET ABOVE CONFLUENCE WITH NASHUA RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

COUNTERPANE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	330	29	104	2.1	298.4	298.4	299.0	0.6
B	440	29	165	1.4	301.6	301.6	302.4	0.8
C	1,470	41	159	1.4	301.8	301.8	302.8	1.0
D	1,575	17	73	3.1	303.9	303.9	303.9	0.0
E	1,800	14	51	4.4	303.9	303.9	303.9	0.0
F	4,100	38	74	2.6	310.0	310.0	310.2	0.2
G	4,265	66	428	0.5	316.7	316.7	316.9	0.2
H	4,615	20	107	1.8	316.7	316.7	316.9	0.2
I	6,245	18	35	5.5	320.7	320.7	320.7	0.0
J	7,225	18	45	3.7	325.2	325.2	325.5	0.3
K	7,400	18	76	2.2	327.3	327.3	327.3	0.0
L	9,180	24	24	5.7	331.7	331.7	331.7	0.0
M	9,310	28	192	0.7	339.7	339.7	339.7	0.0

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

CRONIN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	25	90	504	1.1	437.1	437.1	438.0	0.9
B	181	80	379	1.5	437.1	437.1	438.0	0.9
C	1,122	78	307	1.9	437.6	437.6	438.6	1.0
D	1,550	20	70	8.1	439.4	439.4	439.4	0.0
E*								

[1] FEET ABOVE CONFLUENCE WITH MUMFORD RIVER

* NO FLOODWAY DATA COMPUTED

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

DARK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
F	2,254	48	157	5.3	510.1	510.1	511.1	1.0
G	2,824	37	194	4.3	512.7	512.7	513.6	0.9
H	3,594	96	279	3.0	515.5	515.5	516.0	0.5
I	4,494	127	496	1.7	517.3	517.3	518.3	1.0
J	4,794	72	147	5.7	520.9	520.9	521.4	0.5
K	5,069	32	132	3.4	522.8	522.8	523.4	0.6
L	5,779	47	55	8.2	535.6	535.6	535.6	0.0
M	5,832	47	97	4.7	535.8	535.8	536.2	0.4

[1] ABOVE CONFLUENCE WITH AUBURN POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

DARK BROOK #1 (AUBURN POND TO CENTRAL STREET)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1.100	24	91	8.1	479.4	479.4	479.6	0.2
B	1.134	25	93	8.0	481.5	481.5	481.9	0.4
C	1.154	35	193	3.8	483.7	483.7	483.9	0.2
D	1.259	50	273	2.7	484.5	484.5	484.9	0.4
E	1.472	70	210	3.5	486.4	486.4	487.4	1.0
F	1.564	24	74	10.0	492.8	492.8	493.0	0.2
G	1.611	50	219	3.4	502.0	502.0	502.6	0.6
H	1.803	33	116	6.3	510.3	510.3	510.8	0.5
I	2.006	25	94	7.8	525.8	525.8	526.2	0.4
J	2.058	30	140	5.3	529.0	529.0	529.3	0.3
K	2.259	24	88	7.8	542.2	542.2	542.2	0.0
L	2.538	20	66	10.4	555.1	555.1	555.1	0.0
M	2.754	40	157	4.6	565.9	565.9	566.2	0.3
N	2.968	50	151	4.8	572.6	572.6	573.3	0.7
O	3.073	45	151	4.8	575.7	575.7	576.3	0.6
P	3.404	290	994	0.4	578.7	578.7	579.7	1.0
Q	3.615	20	49	8.9	584.2	584.2	584.2	0.0
R	3.641	20	49	8.9	588.2	588.2	588.2	0.0
S	3.703	20	58	6.9	594.7	594.7	595.2	0.5

[1] MILES ABOVE CONFLUENCE WITH QUINEBAUG RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

DEANS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,012	25	48	3.8	279.1	279.1	279.9	0.8
B	2,946	15	31	3.8	280.9	280.9	281.9	1.0
C	3,076	17	69	1.7	285.1	285.1	286.1	1.0
D	3,206	14	24	4.9	285.5	285.5	286.1	0.6
E	3,311	15	42	2.8	287.4	287.4	288.4	1.0
F	3,416	15	31	3.7	287.6	287.6	288.4	0.8
G	3,676	14	24	4.9	289.4	289.4	289.4	0.0
H	3,791	19	53	2.2	292.0	292.0	292.0	0.0
I	4,386	15	31	3.8	297.6	297.6	298.6	1.0
J	4,511	26	43	2.7	298.5	298.5	298.8	0.3
K	5,181	16	21	5.6	299.7	299.7	299.7	0.0
L	5,311	14	18	6.4	301.2	301.2	301.2	0.0
M	5,726	24	64	1.8	304.5	304.5	304.5	0.0
N	5,826	20	34	3.5	304.5	304.5	304.5	0.0
O	6,026	20	33	3.6	304.7	304.7	305.7	1.0
P	6,126	6	14	8.6	309.7	309.7	310.1	0.4
Q	6,266	19	25	4.7	315.4	315.4	315.9	0.5
R	6,366	16	22	5.3	323.1	323.1	323.5	0.4
S	6,446	43	181	0.6	323.2	323.2	323.6	0.4
T	6,506	20	71	1.6	323.2	323.2	323.6	0.4
U	6,596	17	19	6.1	325.9	325.9	325.9	0.0
V	7,001	*	*	*	334.5	*	*	*
W	7,786	*	*	*	350.6	*	*	*
X	8,028	*	*	*	355.1	*	*	*
Y	8,598	*	*	*	361.7	*	*	*
Z	9,947	*	*	*	395.2	*	*	*

[1] FEET ABOVE CONFLUENCE WITH JACKSTRAW BROOK

* NO FLOODWAY DATA COMPUTED

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

DENNY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	370	88	41	12.7	353.1	351.5 [2]	351.6	0.1
B	400	51	176	3.0	353.1	352.4 [2]	352.6	0.2
C	1,030	41	296	1.8	353.1	352.9 [2]	353.7	0.8

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERATION OF THE BACKWATER EFFECT FROM BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

DOROTHY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	185	1300	1.5	490.1	490.1	491.1	1.0
B	1,050	215	1725	1.1	490.3	490.3	491.3	1.0
C	2,220	490	2630	0.7	490.4	490.4	491.4	1.0
D	3,550	400	2080	0.9	490.6	490.6	491.6	1.0
E	4,358	110	320	5.9	490.9	490.9	491.7	0.8

[1] FEET ABOVE CONFLUENCE WITH KETTLE BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

DUNN'S BROOK (KETTLE BROOK TO AUBURN POND)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	5,407	*	*	*	243.1	*	*	*
B	6,366	*	*	*	246.1	*	*	*
C	7,534	*	*	*	246.1	*	*	*
D	8,585	*	*	*	246.2	*	*	*
E	9,265	49	249	1.8	249.8	249.8	249.8	0.0
F	9,615	32 / 95 [2]	465	0.8	249.9	249.9	249.9	0.0
G	18,177	19	28	6.9	278.7	278.7	278.7	0.0
H	18,382	28	31	6.1	314.9	314.9	314.9	0.0
I	18,520	74	272	0.7	320.6	320.6	321.4	0.8
J	18,978	21	36	5.2	324.3	324.3	324.7	0.4
K	19,439	182	579	0.3	339.5	339.5	340.4	0.9

[1] FEET ABOVE HARVARD ROAD

[2] WIDTH WITHIN THE COUNTY / TOTAL WIDTH

* NO FLOODWAY DATA COMPUTED

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

ELIZABETH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.289	58	417	8.1	391	391	392	1
B	0.367	110	1,108	3	401	401	401	0
C	0.588	100	1,099	3.1	401.2	401.2	401.3	0.1
D	0.825	49	535	6.3	401.6	401.6	401.8	0.2
E	1.021	50	533	6.3	403.2	403.2	403.6	0.4
F	1.236	170	763	4.4	404.4	404.4	405.4	1
G	1.404	40	517	6.5	406.2	406.2	406.8	0.6
H	1.464	320	1,387	2.4	407.1	407.1	407.8	0.7
I	1.711	280	1,122	3	409.4	409.4	410.2	0.8
J	1.732	157	967	3.5	410.6	410.6	411	0.4
K	1.814	230	1,518	2.2	411.1	411.1	411.4	0.3
L	1.983	60	276	12.2	413.3	413.3	413.4	0.1
M	2.106	70	853	4	416.3	416.3	416.9	0.6
N	2.174	50	606	5.6	416.4	416.4	417.1	0.7
O	2.284	85	839	3	417.3	417.3	418.1	0.8
P	2.406	60	544	4.7	417.6	417.6	418.5	0.9
Q	2.488	60	639	4	418.3	418.3	419.1	0.8
R	2.553	140	886	2.9	418.9	418.9	419.7	0.8
S	2.703	75	577	4.4	419.7	419.7	420.6	0.9
T	2.888	40	253	10.1	420.6	420.6	421	0.4
U	2.945	50	238	10.7	423.5	423.5	424	0.5
V	2.958	110	280	9.1	432.7	432.7	432.7	0
W	3.168	80	1,066	2.4	434.3	434.3	434.3	0
X	3.296	100	1,019	2.5	434.5	434.5	434.6	0.1
Y	3.412	80	660	3.9	434.6	434.6	434.7	0.1
Z	3.478	50	358	7.1	434.8	434.8	435.1	0.3
AA	3.587	50	470	5.4	436	436	436.8	0.8

[1] MILES ABOVE NORWICH AND WORCESTER BRANCH RAILROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

FRENCH RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	3.814	114	870	2.9	452.1	452.1	452.1	0
AC	3.894	120	1,148	2.2	452.5	452.5	452.5	0
AD	4.159	220	1,699	1.3	452.7	452.7	452.7	0
AE	4.443	220	1,623	1.4	452.8	452.8	452.9	0.1
AF	4.708	240	1,661	1.3	452.8	452.8	453	0.2
AG	5.128	75	545	4.1	452.9	452.9	453	0.1
AH	5.550	125	891	2.5	453.8	453.8	454.7	0.9
AI	5.804	450	2,078	1.1	454.3	454.3	455.3	1
AJ	6.338	300	1,663	1.1	455.2	455.2	456	0.8
AK	6.546	420	1,192	1.5	455.5	455.5	456.5	1
AL	6.581	44	330	5.6	455.5	455.5	456.5	1
AM	6.748	75	650	2.8	456.6	456.6	457.5	0.9
AN	7.187	400	1,674	0.6	457	457	457.9	0.9
AO	7.407	63	494	2	457.2	457.2	458.1	0.9
AP	7.893	490	2,563	0.4	457.4	457.4	458.3	0.9
AQ	8.005	240	1,374	0.7	457.4	457.4	458.3	0.9
AR	8.030	225	1,399	0.7	457.4	457.4	458.3	0.9
AS	8.183	60	550	1.8	457.5	457.5	458.4	0.9
AT	8.685	100	598	1	457.8	457.8	458.7	0.9
AU	8.901	40	326	1.8	458.1	458.1	459	0.9
AV	9.286	95	638	0.9	458.3	458.3	459.2	0.9
AW	9.493	30	90	6.7	458.3	458.3	459.2	0.9
AX	14.625	65	309	9.3	511	511	511	0
AY	14.687	65	266	10.8	518.2	518.2	518.2	0
AZ	14.791	85	496	5.8	522.2	522.2	522.9	0.7
BA	14.888	165	930	3.1	523.7	523.7	524.5	0.8
BB	15.025	100	449	6.4	527	527	527.6	0.6

[1] MILES ABOVE NORWICH AND WORCESTER BRANCH RAILROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

FRENCH RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	15.050	165	674	4.2	530.4	530.4	530.4	0
BD	15.091	130	434	6.6	532.3	532.3	532.4	0.1
BE	15.116	130	610	4.7	534.6	534.6	535	0.4
BF	15.556	94	328	8.7	560.4	560.4	560.4	0
BG	15.888	30	229	12.5	574.8	574.8	575.5	0.7
BH	15.923	30	196	14.6	579.5	579.5	579.5	0
BI	16.051	80	534	5.4	589.9	589.9	589.9	0
BJ	16.191	40	222	12.9	592.8	592.8	592.9	0.1
BK	16.253	40	293	9.8	596.9	596.9	597.7	0.8
BL	16.276	40	216	12.2	598.7	598.7	598.7	0
BM	16.306	45	269	9.8	600.2	600.2	600.9	0.7
BN	16.343	375	7,692	0.3	604.6	604.6	604.9	0.3
BO	16.898	500	1,797	1.5	605.4	605.4	605.7	0.3
BP	17.100	300	565	4.7	610.4	610.4	610.4	0
BQ	17.278	70	271	9.7	616.7	616.7	616.7	0
BR	17.345	40	204	12.9	621.2	621.2	621.4	0.2
BS	17.502	165	623	4.2	629.3	629.3	630.1	0.8
BT	17.655	75	278	9.5	636.4	636.4	636.4	0
BU	17.678	170	1,137	2.3	646.7	646.7	646.7	0
BV	17.698	220	1,464	1.8	646.8	646.8	646.8	0
BW	17.768	290	1,332	2	646.8	646.8	646.9	0.1
BX	17.843	200	1,077	2.4	651.4	651.4	652.1	0.7
BY	17.866	124	799	3.3	651.5	651.5	652.1	0.6
BZ	17.895	100	1,245	2.1	660.2	660.2	660.2	0
CA	17.998	125	565	4.7	660.3	660.3	660.3	0
CB	18.115	150	390	6.7	665.7	665.7	665.7	0
CC	18.315	40	192	12.5	680	680	680.1	0.1

[1] MILES ABOVE NORWICH AND WORCESTER BRANCH RAILROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

FRENCH RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CD	18.327	60	231	10.4	682	682	682.2	0.2
CE	18.339	110	598	4	683.9	683.9	683.9	0
CF	18.381	70	389	6.2	684.1	684.1	684.1	0
CG	18.409	60	381	6.3	685.5	685.5	685.5	0
CH	18.539	60	261	7.7	687.7	687.7	688.1	0.4
CI	18.569	50	254	7.9	688.7	688.7	689.1	0.4
CJ	19.161	110	944	2.1	704.4	704.4	704.5	0.1
CK	19.329	100	290	6.6	704.5	704.5	704.9	0.4
CL	19.371	65	239	8	706.7	706.7	706.7	0
CM	19.453	55	264	7.3	711.1	711.1	711.9	0.8
CN	19.566	35	164	11.8	730.3	730.3	730.4	0.1
CO	19.595	40	198	9.7	736	736	736.2	0.2
CP	19.649	70	328	5.9	750.5	750.5	751.4	0.9
CQ	19.658	92	219	8.8	761.2	761.2	761.2	0

[1] MILES ABOVE NORWICH AND WORCESTER BRANCH RAILROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

FRENCH RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	108	25	221	1.7	452.1	452.1	452.1	0.0
B	546	25	56	6.9	452.1	452.1	452.3	0.2
C	657	20	45	8.6	459.8	459.8	459.8	0.0
D	1,096	20	52	7.4	467.7	467.7	467.7	0.0
E	1,523	15	46	7.5	479.6	479.6	479.6	0.0
F	1,666	20	128	2.7	483.7	483.7	483.7	0.0
G	1,983	30	59	5.9	484.7	484.7	484.7	0.0
H	2,215	20	62	5.6	486.0	486.0	486.8	0.8
I	2,384	20	118	3.0	495.0	495.0	495.0	0.0
J	2,632	20	80	4.3	495.0	495.0	495.4	0.4
K	3,329	40	131	2.2	505.4	505.4	505.6	0.2
L	3,540	60	77	3.7	506.1	506.1	506.2	0.1
M	3,820	60	160	1.8	507.3	507.3	507.9	0.6
N	3,936	30	62	4.5	508.4	508.4	508.4	0.0
O	4,269	20	44	6.5	511.7	511.7	511.9	0.2
P	4,406	20	103	2.7	516.1	516.1	516.1	0.0
Q	4,728	20	41	6.9	521.1	521.1	521.2	0.1
R	4,876	20	120	2.3	534.3	534.3	534.3	0.0
S	5,357	20	40	7.1	538.7	538.7	538.7	0.0
T	5,462	20	49	5.8	553.6	553.6	553.6	0.0
U	5,832	30	83	3.4	555.4	555.4	556.4	1.0
V	5,964	20	13	2.1	573.9	573.9	573.9	0.0

[1] FEET FROM BOSTON AND MAINE RAILROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

GATES BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,116	77	260	1.6	242.9	241.6 [2]	242.1	0.5
B	1,334	42	179	2.4	242.9	242.8 [2]	243.1	0.3
C	2,230	84	173	2.4	245.2	245.2	245.5	0.3
D	2,472	47	231	1.8	248.1	248.1	248.2	0.1
E	3,692	22	71	5.9	248.4	248.4	249.4	1.0
F	4,035	32	118	3.4	252.7	252.7	252.8	0.1
G	5,541	30	65	5 8	258.3	258.3	258.4	0.1
H	5,736	120	433	0.8	261.8	261.8	261.9	0.1
I	6,797	*	49	7.1	262.4	262.4	263.2	0.8
J	6,909	20	74	4.7	265.5	265.5	265.6	0.1
K	7,819	28	101	3.5	272.0	272.0	272.1	0.1
L	8,369	15	36	9.2	280.0	280.0	280.0	0.0
M	8,537	50	159	2.1	281.9	281.9	282.0	0.1
N	8,892	14	59	3.5	282.5	282.5	283.3	0.8
O	9,185	*	19	10.8	284.1	284.1	284.1	0.0
P	9,277	11	25	8.2	287.3	287.3	287.3	0.0
Q	9,767	18	32	6.4	295.5	295.5	296.0	0.5
R	10,285	*	72	2.7	300.8	300.8	301.6	0.8
S	10,594	*	21	9.3	309.0	309.0	309.2	0.2
T	11,364	13	43	4.5	326.4	326.4	326.8	0.4
U	11,489	18	39	5.0	327.3	327.3	327.9	0.6
V	11,614	12	35	5.6	330.2	330.2	330.8	0.6
W	12,219	*	24	7.5	344.3	344.3	344.3	0.0
X	12,660	*	32	5.6	360.3	360.3	360.7	0.4
Y	13,025	*	18	9.7	368.5	368.5	368.5	0.0
Z	13,578	*	28	6.3	380.2	380.2	380.3	0.1
AA	14,210	*	35	5.0	391.6	391.6	392.6	1.0

[1] FEET ABOVE CONFLUENCE WITH CHARLES RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM CHARLES RIVER

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

GODFREY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,716	470 [2]	2587	0.1	258.0	258.0	258.8	0.8
B	3,126	510 [2]	1335	0.2	258.0	258.0	258.8	0.8
C	3,826	358	808	0.3	265.0	265.0	265.0	0.0
D	4,736	67	78	3.4	267.1	267.1	267.2	0.1

[1] FEET ABOVE CONFLUENCE WITH NASHUA RIVER

[2] THIS WIDTH EXTENDS BEYOND CORPORATE LIMITS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

GOODRIDGE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,070	41	169	0.9	230.1	230.1	231.1	1.0
B	2,200	34	91	1.7	231.0	231.0	231.9	0.9
C	2,320	99	42	3.7	236.7	236.7	236.7	0.0
D	2,420	180	741	0.2	237.0	237.0	237.0	0.0
E	2,820	23	26	6.0	238.0	238.0	238.0	0.0
F	2,922	26	78	2.0	239.0	239.0	239.0	0.0
G	2,990	50	243	0.6	239.1	239.1	239.1	0.0
H	3,100	50	458	0.3	243.4	243.4	244.4	1.0
I	3,240	616	4445	0.1	243.4	243.4	244.4	1.0
J	3,450	355	2461	0.2	243.4	243.4	244.4	1.0
K	4,600	60	211	2.7	243.4	243.4	244.4	1.0
L	5,600	104	388	1.5	245.8	245.8	246.5	0.7
M	5,700	186	745	0.8	248.2	248.2	248.2	0.0
N	5,840	193	919	0.4	248.3	248.3	248.4	0.1
O	7,090	50	76	5.2	256.3	256.3	256.3	0.0
P	8,290	100	150	2.6	267.5	267.5	267.8	0.3
Q	8,400	118	345	1.1	268.5	268.5	268.5	0.0
R	8,510	50	181	2.2	268.6	268.6	268.7	0.1
S	8,870	100	117	3.3	272.1	272.1	272.2	0.1
T	8,980	20	67	5.8	273.3	273.3	273.5	0.2
U	9,070	83	319	1.2	274.2	274.2	274.4	0.2
V	9,690	71	384	1.0	274.4	274.4	274.7	0.3
W	9,970	11	32	9.8	276.8	276.8	276.8	0.0
X	10,120	11	38	8.2	279.1	279.1	279.1	0.0
Y	10,270	12	67	4.7	280.6	280.6	280.7	0.1
Z	11,260	34	94	3.3	285.2	285.2	286.0	0.8
AA	12,270	32	107	2.9	288.7	288.7	289.5	0.8

[1] FEET ABOVE MOUTH AT DELANEY POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	13,030	53	214	1.4	289.6	289.6	290.5	0.9
AC	13,200	18	30	10.3	290.6	290.6	291.0	0.4
AD	13,350	53	69	4.5	295.9	295.9	295.9	0.0
AE	14,510	55	70	4.4	321.2	321.2	321.5	0.3
AF	14,620	32	102	3.0	325.0	325.0	325.0	0.0
AG	14,730	111	538	0.6	325.1	325.1	325.2	0.1
AH	15,880	144	450	0.7	325.2	325.2	325.4	0.2
AI	16,730	10	31	4.9	325.2	325.2	325.4	0.2
AJ	16,890	7	26	5.7	326.6	326.6	327.3	0.7
AK	17,030	18	76	2.0	329.1	329.1	329.5	0.4
AL	17,150	16	73	2.1	329.1	329.1	329.6	0.5
AM	17,400	12	46	3.3	329.1	329.1	329.6	0.5
AN	17,640	12	69	2.2	329.2	329.2	329.7	0.5
AO	17,860	30	79	1.9	329.2	329.2	329.8	0.6
AP	17,980	103	456	0.3	332.1	332.1	332.1	0.0
AQ	18,110	85	389	0.4	332.1	332.1	332.1	0.0
AR	18,310	54	243	0.6	332.1	332.1	332.1	0.0
AS	18,480	7	16	9.5	332.1	332.1	332.1	0.0
AT	18,670	18	79	1.9	333.9	333.9	333.9	0.0
AU	19,010	17	26	5.8	335.6	335.6	336.1	0.5
AV	19,100	54	157	1.0	336.4	336.4	337.4	1.0
AW	19,220	101	507	0.3	337.2	337.2	337.4	0.2
AX	19,600	13	39	3.9	337.2	337.2	337.4	0.2
AY	19,720	14	74	2.0	340.4	340.4	340.4	0.0
AZ	19,820	46	162	0.9	340.4	340.4	340.4	0.0
BA	20,390	21	145	1.0	340.5	340.5	340.6	0.1
BB	21,070	27	33	4.5	346.7	346.7	347.4	0.7

[1] FEET ABOVE MOUTH AT DELANEY POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	21,180	66	129	1.2	347.3	347.3	348.3	1.0
BD	21,300	23	32	4.8	347.9	347.9	348.5	0.6
BE	21,930	60	119	1.3	352.6	352.6	353.6	1.0
BF	22,050	6	67	2.2	361.1	361.1	361.3	0.2
BG	22,140	203	1175	0.1	361.3	361.3	361.5	0.2
BH	23,140	10	19	7.9	362.5	362.5	362.5	0.0
BI	23,250	44	117	1.3	364.0	364.0	364.4	0.4
BJ	23,350	10	40	3.8	364.0	364.0	364.5	0.5
BK	24,100	151	81	1.9	368.2	368.2	368.5	0.3
BL	24,220	10	28	5.4	369.3	369.3	369.3	0.0
BM	24,320	165	460	0.3	369.8	369.8	369.8	0.0
BN	24,770	53	145	1.0	369.8	369.8	369.9	0.1
BO	24,880	6	21	7.4	370.4	370.4	370.4	0.0
BP	24,970	6	26	5.7	371.8	371.8	371.9	0.1
BQ	25,080	8	23	6.5	374.7	374.7	374.7	0.0
BR	25,120	60	195	0.8	375.5	375.5	375.5	0.0
BS	25,280	53	77	1.2	375.8	375.8	376.8	1.0
BT	25,510	6	12	8.1	377.1	377.1	377.1	0.0
BU	26,860	6	32	3.0	391.0	391.0	391.6	0.6
BV	26,910	6	32	3.0	391.1	391.1	391.7	0.6
BW	26,970	25	30	3.2	391.5	391.5	391.8	0.3
BX	27,040	37	54	1.8	393.4	393.4	393.4	0.0
BY	27,130	10	60	1.6	394.1	394.1	394.1	0.0
BZ	27,220	8	31	3.0	394.1	394.1	394.2	0.1
CA	27,330	8	45	2.1	398.5	398.5	398.5	0.0
CB	27,430	10	47	2.0	398.7	398.7	398.7	0.0
CC	27,490	10	28	2.2	398.7	398.7	398.7	0.0

[1] FEET ABOVE MOUTH AT DELANEY POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CD	27,620	9	21	2.9	401.7	401.7	401.7	0.0
CE	27,740	11	47	1.3	402.0	402.0	402.0	0.0
CF	29,750	7	10	6.2	436.4	436.4	436.5	0.1
CG	29,880	68	137	0.4	438.1	438.1	438.1	0.0
CH	29,990	38	72	0.8	438.1	438.1	438.1	0.0

[1] FEET ABOVE MOUTH AT DELANEY POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.008	16	72	5.5	567.1	567.1	567.8	0.7
B	0.139	20	87	4.5	573.4	573.4	574.4	1.0
C	0.160	14	63	6.3	577.1	577.1	577.2	0.1
D	0.245	135	115	3.4	579.3	579.3	579.7	0.4
E	0.280	260	1444	0.3	589.5	589.5	589.5	0.0
F	0.547	65	299	1.3	595.7	595.7	595.7	0.0
G	0.591	20	87	4.5	599.8	599.8	599.8	0.0
H	0.638	20	117	3.4	602.4	602.4	602.5	0.1
I	0.789	80	351	1.1	612.7	612.7	612.9	0.2
J	0.995	30	96	4.1	622.2	622.2	623.1	0.9
K	1.206	30	92	4.3	629.3	629.3	629.8	0.5
L	1.417	50	175	2.2	634.6	634.6	635.2	0.6
M	1.438	120	605	0.7	638.5	638.5	639.3	0.8
N	1.592	140	466	0.8	638.7	638.7	639.5	0.8
O	1.798	20	46	8.6	641.4	641.4	641.4	0.0
P	2.003	20	95	4.1	647.1	647.1	648.0	0.9
Q	2.054	10	77	5.1	651.1	651.1	651.1	0.0
R	2.286	120	554	0.7	651.9	651.9	652.9	1.0
S	2.459	20	53	7.4	655.4	655.4	655.4	0.0
T	2.546	30	243	1.6	665.4	665.4	666.2	0.8
U	2.715	30	106	3.7	669.3	669.3	669.3	0.0
V	2.751	40	320	1.2	678.5	678.5	678.6	0.1
W	2.838	20	106	3.7	678.5	678.5	678.6	0.1
X	3.037	10	37	4.5	688.3	688.3	689.1	0.8
Y	3.044	10	32	5.2	688.3	688.3	689.2	0.9
Z	3.325	50	324	0.5	690.6	690.6	690.8	0.2
AA	3.618	85	490	0.3	690.6	690.6	690.8	0.2

[1] MILES ABOVE ACCESS ROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

HAMANT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	3.869	10	42	4.0	690.6	690.6	690.8	0.2

[1] MILES ABOVE ACCESS ROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

HAMANT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	65	30	75	2.1	267.5	267.5	267.5	0.0
B	205	26	50	3.1	267.7	267.7	267.7	0.0
C	279	13	41	3.9	268.4	268.4	268.4	0.0
D	340	13	33	4.8	268.9	268.9	268.9	0.0
E	550	79	169	3.1	282.7	282.7	282.7	0.0
F	630	65	140	3.8	282.9	282.9	282.9	0.0
G	708	13	72	7.3	289.3	289.3	290.3	1.0
H	808	83	573	0.9	289.3	289.3	290.3	1.0
I	2,091	141	821	0.7	289.4	289.4	290.4	1.0
J	2,588	200	835	0.7	291.9	291.9	292.9	1.0
K	3,628	399	2214	0.3	292.0	292.0	293.0	1.0
L	4,710	254	1273	0.5	293.0	293.0	294.0	1.0
M	4,758	152	951	0.7	293.0	293.0	294.0	1.0
N	5,360	233	1418	0.5	293.0	293.0	294.0	1.0
O	5,761	417	2062	0.2	293.1	293.1	294.1	1.0
P	6,622	307	1060	0.5	293.2	293.2	294.2	1.0
Q	7,060	29	82	6.6	295.2	295.2	296.2	1.0
R	9,578	33	102	5.8	325.8	325.8	326.1	0.3
S	9,689	8	82	7.3	330.8	330.8	331.8	1.0
T	9,837	71	635	0.9	331.0	331.0	332.0	1.0

[1] FEET ABOVE CONFLUENCE WITH COLD HARBOR BROOK (LOWER REACH)

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

HOWARD BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	230	63	375	1.0	265.1	265.1	265.1	0.0
B	500	87	465	0.8	265.1	265.1	265.1	0.0
C	725	51	60	6.2	266.1	266.1	266.1	0.0

[1] FEET ABOVE CONFLUENCE WITH COLD HARBOR BROOK (LOWER REACH)

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

HOWARD BROOK SPLIT FLOW

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	170	*	217	2.2	275.1	275.1	275.1	0.0
B	1,000	*	58	8.4	275.1	275.1	275.1	0.0
C	1,170	*	167	2.9	277.4	277.4	277.4	0.0
D	1,340	*	994	0.5	284.6	284.6	284.6	0.0
E	1,470	*	3370	0.1	284.6	284.6	284.6	0.0
F	3,055	*	1725	0.3	284.6	284.6	284.6	0.0
G	3,330	*	69	7.0	284.6	284.6	284.6	0.0
H	3,520	*	65	7.5	284.6	284.6	284.6	0.0
I	4,405	*	72	7.1	293.8	293.8	294.0	0.2
J	4,590	20	93	2.9	299.4	299.4	299.4	0.0
K	5,145	29	87	3.1	299.5	299.5	300.5	1.0
L	5,962	47	92	2.9	303.2	303.2	303.4	0.2
M	6,087	50	316	0.9	307.5	307.5	307.9	0.4
N	7,910	28	48	5.6	311.4	311.4	312.0	0.6
O	8,420	20	40	6.8	325.0	325.0	325.2	0.2
P	8,670	21	64	1.9	329.7	329.7	329.7	0.0

[1] FEET ABOVE CONFLUENCE WITH CEDAR SWAMP POND

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

HUCKLEBERRY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	153	52	186	1.2	299.4	299.4	300.4	1.0
B	530	11	35	6.6	299.8	299.8	300.4	0.6
C	655	25	159	1.5	308.8	308.8	308.8	0.0
D	2,100	16	29	6.9	315.5	315.5	315.6	0.1
E	3,253	25	52	3.9	329.6	329.6	330.3	0.7
F	3,477	30	83	2.4	332.4	332.4	332.4	0.0
G	3,778	*	2050	0.1	332.4	332.4	332.5	0.1
H	4,700	*	967	0.2	332.4	332.4	332.5	0.1

[1] FEET ABOVE CONFLUENCE WITH HUCKLEBERRY BROOK

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

IVY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,747	318	649	0.8	278.7	277.9 [2]	278.6	0.7
B	3,479	318	468	0.7	278.7	278.5 [2]	279.5	1.0
C	3,974	12	56	6.1	280.9	280.9	281.9	1.0
D	4,992	109	110	3.1	284.7	284.7	285.7	1.0
E	5,319	205	1322	0.3	293.2	293.2	294.0	0.8
F	5,818	251	679	0.5	296.4	296.4	296.4	0.0
G	5,946	260	499	0.7	296.4	296.4	296.4	0.0
H	6,225	145	357	1.0	297.4	297.4	298.2	0.8
I	6,493	60	133	2.6	299.5	299.5	300.4	0.9
J	7,890	28	71	4.8	325.9	325.9	326.9	1.0
K	8,031	10	47	7.3	329.1	329.1	329.4	0.3
L	8,143	32	114	3.0	331.3	331.3	332.0	0.7
M	8,537	*	*	*	337.1	*	*	*
N	8,746	*	*	*	342.0	*	*	*
O	9,451	*	*	*	363.6	*	*	*
P	9,818	*	*	*	373.6	*	*	*
Q	10,417	*	*	*	390.7	*	*	*
R	12,075	*	*	*	460.6	*	*	*
S	12,761	*	*	*	474.6	*	*	*
T	13,552	*	*	*	486.8	*	*	*
U	13,870	*	*	*	492.2	*	*	*

[1] FEET ABOVE CONFLUENCE WITH SULLIVAN BROOK

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERATION OF THE BACKWATER EFFECTS FROM SULLIVAN BROOK

* NO FLOODWAY DATA COMPUTED

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

JACKSTRAW BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-575	400	1477	1.9	520.0	520.0	521.0	1.0
B	-25	23	179	15.9	522.9	522.9	522.9	0.0
C	97	42	190	15.0	526.2	526.2	526.3	0.1
D	746	233	1549	1.8	530.8	530.8	531.8	1.0
E	1,626	15	155	18.4	538.7	538.7	538.7	0.0
F	2,186	132	1016	2.8	547.7	547.7	548.0	0.3
G	3,110	184	978	2.9	548.8	548.8	549.5	0.7
H	3,650	111	331	8.6	554.1	554.1	554.1	0.0
I	4,820	164	356	8.0	571.1	571.1	572.1	1.0
J	5,210	318	433	6.6	580.0	580.0	580.0	0.0
K	5,790	136	318	9.0	599.5	599.5	599.5	0.0
L	5,890	153	342	8.3	608.9	608.9	609.1	0.2
M	6,220	66	218	13.1	622.4	622.4	622.4	0.0
N	6,670	42	200	14.2	629.5	629.5	629.5	0.0
O	7,040	21	174	16.4	644.8	644.8	644.8	0.0
P	7,102	58	645	4.5	661.9	661.9	661.9	0.0
Q	7,162	120	1375	2.1	670.5	670.5	670.5	0.0

[1] FEET ABOVE JAMES STREET

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

KETTLE BROOK (WEST)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.247	50	171	1.7	696.2	696.2	697.2	1
B	0.434	30	133	2.1	697.3	697.3	698.1	0.8
C	0.554	20	309	1.2	709.4	709.4	709.4	0
D	0.987	20	125	2.9	709.4	709.4	709.7	0.3
E	1.454	25	61	5.9	728.3	728.3	728.6	0.3
F	1.831	200	389	0.9	729.7	729.7	730.5	0.8
G	2.027	30	69	5.2	743.3	743.3	743.3	0
H	2.050	40	76	4.7	746.3	746.3	746.4	0.1
I	2.087	40	76	4.7	749.5	749.5	749.5	0
J	2.358	10	25	9.1	774	774	774.1	0.1
K	2.747	20	72	3.2	808.8	808.8	809.3	0.5

[1] MILES ABOVE MASHAPAUG ROAD

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

LEADMINE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	465	30	181	5.0	393.5	389.2 [2]	389.8	0.6
B	1,230	35	195	4.6	393.5	392.1 [2]	392.7	0.6
C	1,690	35	177	5.1	394.6	394.6	395.1	0.5
D	2,603	25	93	9.7	405.0	405.0	405.0	0.0
E	2,994	20	84	10.7	412.8	412.8	413.1	0.3
F	4,715	40	113	8.0	437.7	437.7	437.7	0.0
G	7,176	30	95	8.8	487.2	487.2	487.2	0.0
H	7,545	16	86	9.7	495.2	495.2	496.2	1.0
I	7,688	30	276	3.0	500.9	500.9	501.3	0.4
J	10,074	80	227	3.7	502.2	502.2	502.7	0.5
K	12,741	28	78	9.6	537.5	537.5	537.6	0.1

[1] FEET ABOVE CONFLUENCE WITH QUINEBAUG RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM QUINEBAUG RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

LEBANON BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.353	50	122	7.2	697.7	697.7	698.1	0.4
B	0.373	20	78	11.3	699.4	699.4	699.5	0.1
C	0.493	20	78	11.2	712.4	712.4	712.6	0.2
D	0.558	100	280	2.6	716.0	716.0	716.0	0.0
E	0.700	40	104	7.0	721.9	721.9	722.1	0.2
F	0.756	30	85	8.6	726.1	726.1	726.2	0.1
G	0.795	30	216	2.8	733.7	733.7	733.8	0.1
H	0.950	40	97	6.3	734.4	734.4	734.4	0.0
I	1.044	30	70	8.7	740.7	740.7	740.9	0.2
J	1.075	50	110	5.5	743.8	743.8	743.8	0.0
K	1.212	50	102	4.1	756.3	756.3	756.6	0.3
L	1.598	150	524	1.2	771.6	771.6	772.4	0.8

[1] MILES ABOVE PIKES POND DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE NUGGET BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-0.018	35	160	9.3	542.1	542.1	542.1	0.0
B	0.020	40	151	9.8	549.6	549.6	549.6	0.0
C	0.253	235	852	1.7	553.1	553.1	554.0	0.9
D	1.029	350	841	1.8	555.3	555.3	556.2	0.9
E	1.405	65	173	7.4	560.7	560.7	561.0	0.3
F	1.548	130	472	2.7	566.1	566.1	567.0	0.9
G	1.587	25	119	10.7	567.7	567.7	568.0	0.3
H	1.710	30	125	10.2	581.5	581.5	581.7	0.2
I	1.844	35	153	8.3	588.7	588.7	589.1	0.4
J	1.878	45	236	5.4	592.7	592.7	592.7	0.0
K	1.919	100	486	2.6	596.4	596.4	596.4	0.0
L	2.376	40	126	10.2	603.7	603.7	603.7	0.0

[1] MILES ABOVE TURNER ROAD

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.000	50	318	2.9	456.8	454.1	455.1	1.0
B	0.095	50	281	3.3	456.8	454.7	455.5	0.8
C	0.120	100	880	1.0	460.5	460.5	460.5	0.0
D	0.340	100	559	1.7	460.5	460.5	460.8	0.3
E	0.586	100	585	1.6	460.8	460.8	461.5	0.7
F	0.635	150	1461	0.6	465.5	465.5	466.3	0.8
G	1.058	150	1039	0.9	465.6	465.6	466.4	0.8
H	1.176	120	861	1.1	465.7	465.7	466.5	0.8
I	1.238	120	838	1.1	466.5	466.5	467.0	0.5
J	1.298	50	378	2.4	467.2	467.2	467.4	0.2
K	1.343	50	278	3.3	467.3	467.3	467.4	0.1
L	1.569	60	331	2.8	468.0	468.0	468.4	0.4
M	1.628	40	211	4.2	468.0	468.0	468.5	0.5
N	1.678	160	1455	0.6	478.1	478.1	478.1	0.0
O	2.270	275	2240	0.2	478.1	478.1	478.1	0.0
P	2.354	20	98	3.7	478.2	478.2	478.2	0.0
Q	2.409	30	139	2.6	478.3	478.3	478.4	0.1
R	2.468	40	198	1.8	480.2	480.2	480.2	0.0

[1] MILES ABOVE CONFLUENCE WITH FRENCH RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

LOWES BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.023	19	53	7.9	703.7	703.7	703.7	0.0
B	0.065	20	63	6.7	704.9	704.9	705.2	0.3
C	0.160	20	58	7.2	720.2	720.2	720.2	0.0
D	0.263	20	61	6.9	731.4	731.4	731.5	0.1
E	0.346	20	61	6.9	747.6	747.6	747.6	0.0
F	0.405	25	72	5.8	764.4	764.4	764.7	0.3
G	0.471	20	48	8.8	783.8	783.8	783.8	0.0
H	0.513	20	48	8.8	812.3	812.3	812.3	0.0

[1] MILES ABOVE DOWNSTREAM FACE OF MAIN STREET CULVERT

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

LYNDE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	63	40	106	7.9	481.0	481.0	481.0	0.0
B	602	30 [2]	144	5.8	482.9	482.9	483.8	0.9
C	887	24	134	6.2	484.7	484.7	485.4	0.7
D	2,603	40	194	4.3	493.0	493.0	493.6	0.6
E	3,453	24	107	7.8	500.0	500.0	500.6	0.6
F	3,501	24	80	10.4	503.7	503.7	503.9	0.2

[1] FEET ABOVE CONFLUENCE WITH QUINEBAUG RIVER

[2] THIS WIDTH EXTENDS BEYOND CORPORATE LIMITS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

MCKINSTRY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	6,000	88	113	2.3	359.8	359.8	360.8	1.0
B	6,120	10	32	8.1	361.2	361.2	361.6	0.4
C	6,240	15	76	3.4	363.1	363.1	363.3	0.2
D	6,900	98	162	1.6	364.6	364.6	365.4	0.8
E	8,700	11	28	9.1	385.7	385.7	385.7	0.0
F	10,340	46	133	1.9	397.2	397.2	397.7	0.5

[1] FEET ABOVE MOUTH AT FLINT POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MEADOW BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	68	261	1071	5.4	443.5	443.5	444.1	0.6
B	307	595	2209	2.9	444.9	444.9	445.6	0.7
C	369	450	2608	2.3	445.2	445.2	445.9	0.7
D	663	448	2468	4.0	445.3	445.3	446.0	0.7
E	1,573	301	1723	5.1	445.5	445.5	446.2	0.7
F	3,574	353	2098	3.9	447.1	447.1	447.8	0.7
G	4,199	815	2637	5.3	451.7	451.7	451.8	0.2
H	4,687	430	1758	5.8	451.9	451.9	452.3	0.4
I	5,250	278	1310	7.1	452.2	452.2	452.7	0.5
J	6,140	76	919	4.5	452.2	452.0	452.2	0.2
K	6,410	86	915	4.5	452.2	452.0	452.3	0.3
L	7,580	88	587	7.1	453.1	453.1	453.1	0.0
M	8,190	54	318	13.0	454.1	454.1	454.1	0.0
N	9,228	66	529	7.8	460.3	460.3	460.3	0.0
O	10,033	330	1314	3.2	462.3	462.3	462.3	0.0
P	11,643	63	366	11.3	466.7	466.7	466.7	0.0
Q	12,056	105	642	6.4	469.1	469.1	469.1	0.0
R	12,121	88	1110	3.7	469.7	469.7	470.7	1.0
S	13,221	79	463	8.9	469.7	469.7	470.7	1.0
T	13,273	43	541	7.6	472.7	472.7	472.7	0.0
U	13,373	43	640	6.5	473.9	473.9	474.9	1.0
V	13,384	156	1403	3.0	475.2	475.2	476.2	1.0
W	13,512	45	527	7.9	475.4	475.4	476.3	0.9

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MIDDLE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	9,821	25	45	8.0	289.8	289.8	289.8	0.0
B	11,252	32	110	3.3	299.2	299.2	300.1	0.9
C	12,683	30	159	2.3	302.1	302.1	302.2	0.1
D	12,794	30	139	2.6	302.3	302.3	302.4	0.1
E	12,905	12	51	7.1	302.4	302.4	302.4	0.0
F	13,823	12	407	0.9	303.6	303.6	304.1	0.5
G	14,821	40	55	6.6	308.5	308.5	308.5	0.0
H	14,932	40	99	3.6	309.6	309.6	309.6	0.0
I	15,075	317	393	0.9	309.9	309.9	310.0	0.1
J	15,254	60	193	1.9	310.0	310.0	310.1	0.1
K	15,355	52	86	4.2	310.0	310.0	310.2	0.2
L	15,450	30	72	5.0	311.1	311.1	311.1	0.0
M	16,141	60	254	1.4	311.9	311.9	312.2	0.3
N	17,546	119	330	1.1	312.3	312.3	312.7	0.4
O	18,924	80	426	0.8	312.5	312.5	312.9	0.4
P	19,035	79	275	1.3	312.5	312.5	312.9	0.4
Q	19,146	50	205	1.8	312.5	312.5	313.0	0.5
R	20,244	12	29	9.1	314.6	314.6	314.6	0.0
S	20,360	12	29	9.0	319.4	319.4	319.4	0.0
T	20,397	12	53	5.0	320.7	320.7	320.7	0.0
U	20,434	12	69	3.8	333.5	333.5	333.5	0.0
V	20,534	31	136	1.9	333.9	333.9	333.9	0.0
W	20,983	25	56	4.7	334.5	334.5	334.9	0.4
X	21,031	33	71	3.7	341.6	341.6	341.6	0.0
Y	21,073	26	445	0.6	341.8	341.8	341.8	0.0
Z	21,136	85	645	0.4	343.1	343.1	343.1	0.0
AA	21,247	24	132	2.0	343.1	343.1	343.1	0.0

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MILL BROOK (TOWN OF BOLTON)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.125	30	158	1.5	452.6	452.6	452.6	0.0
B	0.156	16	90	2.6	453.0	453.0	453.0	0.0
C	0.247	30	170	1.4	453.0	453.0	453.3	0.3
D	0.346	20	105	2.2	453.0	453.0	453.4	0.4
E	0.462	20	109	2.1	453.1	453.1	453.8	0.7
F	0.498	10	55	4.2	453.8	453.8	454.1	0.3
G	0.605	25	106	2.2	454.1	454.1	454.9	0.8
H	0.712	65	242	1.0	454.3	454.3	455.2	0.9

[1] MILES ABOVE CONFLUENCE WITH FRENCH RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MILL BROOK (TOWN OF WEBSTER)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	180	1700	1.8	175.1	175.1	176.1	1.0
B	1,000	150	950	3.3	175.4	175.4	176.4	1.0
C	1,320	280	360	8.6	175.5	175.5	176.5	1.0
D	1,355	280	360	8.6	175.7	175.7	176.6	0.9
E	1,650	70	450	6.9	177.2	177.2	177.7	0.5
F	2,880	160	770	4.0	178.3	178.3	179.3	1.0
G	4,020	160	890	3.5	179.7	179.7	180.4	0.7
H	4,760	410	820	3.3	182.0	182.0	182.0	0.0
I	5,180	410	280	9.6	183.4	183.4	183.4	0.0
J	5,210	440	1550	1.7	186.9	186.9	186.9	0.0
K	5,550	280	790	3.4	186.9	186.9	186.9	0.0
L	5,870	130	340	7.9	187.6	187.6	187.6	0.0
M	7,100	90	690	3.9	194.7	194.7	194.9	0.2
N	9,060	90	630	4.3	195.9	195.9	196.3	0.4
O	12,500	220	1615	1.7	197.8	197.8	198.6	0.8
P	16,680	260	1730	1.6	199.7	199.7	200.2	0.5
Q	18,770	545	2888	0.8	199.9	199.9	200.6	0.7
R	21,280	253	1011	2.3	200.3	200.3	201.0	0.7
S	23,300	375	1457	1.4	202.3	202.3	202.5	0.2
T	25,280	243	1182	1.8	202.9	202.9	203.4	0.5
U	27,790	350	2379	0.8	203.0	203.0	203.7	0.7
V	29,100	231	1543	1.2	204.6	204.6	205.1	0.5
W	30,820	39	113	8.9	211.6	211.6	211.6	0.0
X	31,000	45	267	3.8	216.1	216.1	216.5	0.4
Y	32,955	139	387	2.6	219.3	219.3	220.1	0.8
Z	34,685	86	369	2.7	221.2	221.2	222.0	0.8
AA	36,834	168	708	1.4	222.3	222.3	223.3	1.0

[1] FEET ABOVE CONFLUENCE WITH HARRIS POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	38,349	*	182	5.0	223.7	223.7	224.3	0.6
AC	38,519	*	145	6.3	224.0	224.0	224.7	0.7
AD	39,099	*	77	10.7	227.8	227.8	228.2	0.4
AE	40,531	148	1013	0.8	239.4	239.4	239.6	0.2
AF	41,851	130	895	0.9	239.4	239.4	239.8	0.4
AG	43,661	*	331	2.5	239.4	239.4	240.3	0.9
AH	44,771	42	200	3.8	240.6	240.6	241.4	0.8
AI	44,986	27	177	4.3	243.2	243.2	243.2	0.0
AJ	46,791	*	178	4.3	245.1	245.1	246.0	0.9
AK	47,152	*	180	4.2	246.3	246.3	247.3	1.0
AL	48,520	*	1780	0.4	275.1	275.1	275.1	0.0
AM	50,610	*	1915	0.4	275.1	275.1	275.1	0.0
AN	52,110	*	2037	0.3	275.1	275.1	275.1	0.0
AO	54,130	*	1259	1.4	275.2	275.2	275.2	0.0
AP	56,525	400	1447	1.2	276.5	276.5	276.8	0.3
AQ	59,230	140	1522	1.0	288.7	288.7	289.4	0.7
AR	60,490	130	939	1.7	288.8	288.8	289.4	0.6
AS	61,040	110	850	1.6	289.0	289.0	289.6	0.6
AT	62,915	420	2989	0.4	289.1	289.1	289.8	0.7
AU	64,195	71	440	2.4	289.2	289.2	289.8	0.6
AV	64,362	77	440	2.4	290.6	290.6	290.9	0.3
AW	64,492	125	843	1.3	299.3	299.3	299.7	0.4
AX	66,305	80	632	1.7	299.5	299.5	299.5	0.0
AY	66,715	200	817	1.1	301.0	301.0	301.1	0.1
AZ	68,095	226	702	1.2	301.2	301.2	301.7	0.5
BA	69,445	29	126	6.8	303.3	303.3	303.3	0.0
BB	70,005	33	180	2.9	306.6	306.6	307.4	0.8

[1] FEET ABOVE CONFLUENCE WITH HARRIS POND

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	71,055	24	103	5.1	322.0	322.0	322.8	0.8
BD	72,655	16	82	6.4	329.1	329.1	329.7	0.6
BE	72,789	27	215	2.4	335.4	335.4	335.4	0.0
BF	74,405	74	116	4.5	337.6	337.6	337.6	0.0
BG	75,295	46	202	2.6	340.5	340.5	341.3	0.8

[1] FEET ABOVE CONFLUENCE WITH HARRIS POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MILL RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	47	265	1.4	354.7	354.7	354.7	0.0
B	1,025	23	60	5.8	366.6	366.6	367.0	0.4
C	1,132	195	1358	0.3	372.9	372.9	373.6	0.7
D	1,952	94	333	1.0	372.9	372.9	373.6	0.7
E	2,053	48	308	1.1	374.8	374.8	374.8	0.0
F	2,628	34	174	2.0	374.8	374.8	374.8	0.0
G	4,728	34	97	2.2	375.2	375.2	375.4	0.2
H	6,548	32	46	4.7	377.6	377.6	377.6	0.0
I	6,653	47	121	1.8	378.3	378.3	378.8	0.5
J	10,973	35	26	4.6	399.2	399.2	399.2	0.0
K	11,403	47	157	0.8	401.5	401.5	401.8	0.3

[1] FEET ABOVE CONFLUENCE WITH SILVER LAKE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MISCOE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	210	55	324	2.3	204.6	199.8 [2]	200.7	0.9
B	325	35	146	5.1	204.6	201.2 [2]	201.4	0.2
C	2,075	90	406	1.8	204.6	203.8	204.7	0.9
D	4,318	*	292	2.5	205.7	205.7	206.3	0.6
E	4,482	*	175	4.2	209.8	209.8	209.8	0.0
F	6,590	45	220	2.4	211.8	211.8	212.8	1.0
G	6,770	*	265	2.0	221.9	221.9	221.9	0.0
H	8,185	60	311	1.7	221.9	221.9	222.4	0.5
I	10,055	147	321	1.6	223.4	223.4	224.1	0.7
J	11,365	50	171	2.7	226.2	226.2	227.1	0.9
K	11,590	70	163	2.8	227.4	227.4	228.1	0.7
L	13,270	*	88	5.2	234.5	234.5	234.8	0.3
M	13,411	70	330	1.4	237.9	237.9	238.0	0.1
N	14,446	30	54	6.1	238.8	238.8	239.1	0.3
O	15,243	35	110	3.0	246.4	246.4	247.0	0.6
P	16,196	42	120	2.8	250.8	250.8	251.4	0.6
Q	16,771	25	51	6.5	261.0	261.0	261.3	0.3
R	17,196	*	76	4.3	269.0	269.0	269.6	0.6
S	18,231	37	59	5.6	279.1	279.1	279.8	0.7

[1] FEET ABOVE CONFLUENCE WITH MILL RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM MILL RIVER

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MUDDY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	135	370	1806	2.1	224.8	221.8 [2]	222.6	0.8
B	1,895	53	434	8.6	224.8	223.2 [2]	224.2	1.0
C	2,020	67	510	7.3	224.8	224.4 [2]	225.0	0.6
D	3,033	105	1037	3.6	227.9	227.9	228.3	0.4
E	3,195	96	1356	2.8	228.5	228.5	229.0	0.5
F	3,310	181	2119	1.8	235.6	235.6	235.6	0.0
G	4,852	510	2301	1.6	235.8	235.8	235.8	0.0
H	6,060	470	1576	2.4	236.3	236.3	236.5	0.2
I	8,930	382	1120	3.3	240.8	240.8	241.6	0.8
J	9,663	56	448	8.4	243.6	243.6	243.9	0.3
K	10,102	80	654	5.4	244.9	244.9	245.4	0.5
L	10,430	65	396	9.0	245.5	245.5	245.7	0.2
M	10,837	40	481	7.4	248.8	248.8	248.8	0.0
N	10,980	34	418	8.5	248.8	248.8	248.9	0.1
O	11,575	490	4779	0.7	256.0	256.0	256.0	0.0
P	12,970	90	898	3.9	256.8	256.8	256.8	0.0
Q	13,225	269	2252	1.6	257.4	257.4	257.4	0.0
R	14,509	143	955	3.7	257.5	257.5	257.5	0.0
S	15,337	186	1342	2.6	258.0	258.0	258.3	0.3
T	15,757	172	653	5.4	258.0	258.0	258.3	0.3
U	15,907	693	8723	0.4	269.7	269.7	270.2	0.5
V	18,662	387	4783	0.7	269.7	269.7	270.2	0.5
W	20,022	96	458	7.7	269.7	269.7	270.2	0.5
X	20,527	96	686	5.0	271.3	271.3	271.9	0.6
Y	20,662	90	637	5.4	272.2	272.2	272.4	0.2
Z	21,242	139	862	4.0	272.8	272.8	273.4	0.6
AA	22,292	40	244	14.1	274.8	274.8	274.8	0.0

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERATION OF BACKWATER FROM BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MUMFORD RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	22,502	59	333	10.3	278.6	278.6	278.6	0.0
AC	22,662	84	18	3.8	284.9	284.9	285.0	0.1
AD	23,007	76	682	5.0	288.3	288.3	288.3	0.0
AE	23,690	51	319	10.8	294.7	294.7	294.9	0.2
AF	23,972	100	698	4.9	299.2	299.2	299.2	0.0
AG	24,080	323	4212	0.8	311.5	311.5	311.5	0.0
AH	26,175	224	2865	1.2	311.5	311.5	311.5	0.0
AI	26,887	143	1732	2.0	311.5	311.5	311.5	0.0
AJ	27,272	135	1705	2.0	311.5	311.5	311.5	0.0
AK	27,567	960	12667	0.3	311.6	311.6	311.6	0.0
AL	28,657	320	3170	0.9	311.6	311.6	311.6	0.0
AM	30,431	220	2236	1.2	311.6	311.6	311.6	0.0
AN	30,570	140	1800	1.5	317.1	317.1	317.1	0.0
AO	32,320	545	7566	0.4	317.2	317.2	317.2	0.0
AP	33,932	415	5633	0.5	317.2	317.2	317.2	0.0
AQ	36,651	220	1656	1.6	317.2	317.2	317.2	0.0
AR	39,065	80	727	3.5	317.4	317.4	318.2	0.8
AS	39,410	73	648	4.0	317.7	317.7	318.3	0.6
AT	39,873	303	1430	1.8	317.8	317.8	318.5	0.7
AU	42,318	290	1356	1.9	319.6	319.6	319.9	0.3
AV	43,350	57	279	9.2	320.1	320.1	320.3	0.2
AW	43,978	97	702	3.6	323.2	323.2	323.4	0.2
AX	44,165	347	2352	1.1	329.3	329.3	329.4	0.1
AY	44,923	*	1158	2.1	329.4	329.4	329.5	0.1
AZ	47,348	477	1372	4.6	329.9	329.9	330.1	0.2
BA	49,240	53	246	14.6	338.3	338.3	338.4	0.1
BB	49,457	50	335	8.3	340.7	340.7	341.5	0.8

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

* FLOODWAY COINCIDENT WITH CHANNEL

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MUMFORD RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	50,712	*	202	11.7	347.9	347.9	348.0	0.1
BD	51,012	*	1311	1.8	363.1	363.1	363.3	0.2
BE	51,634	*	722	3.3	373.6	373.6	373.6	0.0
BF	52,457	55	414	5.7	375.2	375.2	376.0	0.8
BG	53,000	110	698	3.4	376.3	376.3	377.2	0.9
BH	54,425	175	1019	2.0	377.8	377.8	378.5	0.7
BI	55,609	294	1411	1.5	378.4	378.4	379.1	0.7
BJ	56,859	38	181	11.4	380.4	380.4	380.4	0.0
BK	57,005	52	407	5.1	383.2	383.2	383.5	0.3
BL	58,470	203	1261	1.6	384.4	384.4	385.2	0.8
BM	60,047	196	1167	1.8	384.8	384.8	385.8	1.0
BN	60,175	*	1916	1.0	387.7	387.7	387.8	0.1
BO	61,157	400	3374	0.6	387.7	387.7	387.8	0.1
BP	62,047	220	968	2.1	387.7	387.7	387.8	0.1
BQ	63,073	161	450	2.9	388.8	388.8	389.1	0.3
BR	64,630	171	867	1.5	390.0	390.0	391.0	1.0
BS	65,825	180	815	1.6	390.6	390.6	391.5	0.9
BT	67,243	23	106	12.3	393.0	393.0	393.0	0.0
BU	67,400	37	237	5.5	396.0	396.0	396.0	0.0
BV	67,708	36	135	9.6	396.7	396.7	396.9	0.2
BW	68,063	138	1013	1.3	416.4	416.4	416.5	0.1
BX	68,325	20	107	12.1	418.4	418.4	418.4	0.0
BY	68,647	84	226	5.8	426.1	426.1	427.0	0.9
BZ	68,910	22	105	12.4	434.6	434.6	434.6	0.0
CA	69,448	95	444	1.1	437.6	437.6	438.6	1.0
CB	69,825	20	54	9.3	443.7	443.7	443.7	0.0

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

* FLOODWAY COINCIDENT WITH CHANNEL

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

MUMFORD RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	82,215	270 [2]	3513	3.4	221.7	221.7	222.6	0.9
B	84,116	400 [2]	4195	2.8	222.4	222.4	223.2	0.8
C	86,122	281 [2]	2804	4.2	222.6	222.6	223.3	0.7
D	86,914	350 [2]	3448	3.4	222.9	222.9	223.6	0.7
E	88,076	450 [2]	4139	2.9	223.5	223.5	224.4	0.9
F	89,924	280 [2]	2844	4.1	223.7	223.7	224.5	0.8
G	91,085	442 [2]	3708	3.2	224.0	224.0	224.8	0.8
H	92,986	613 [2]	4909	2.4	224.4	224.4	225.2	0.8
I	94,412	340 [2]	3379	3.5	224.5	224.5	225.3	0.8
J	96,048	230	2175	5.4	224.5	224.5	225.3	0.8
K	96,260	180	2093	5.6	224.8	224.8	225.6	0.8
L	96,576	200	2523	4.7	225.2	225.2	226.0	0.8
M	96,893	330	3789	3.1	225.5	225.5	226.4	0.9
N	97,316	1360	13480	0.9	225.7	225.7	226.5	0.8
O	98,372	2480	24301	0.5	225.7	225.7	226.5	0.8
P	101,804	2690	25254	0.5	225.8	225.8	226.6	0.8
Q	104,866	3410	31221	0.4	225.8	225.8	226.6	0.8
R	108,192	2810	23003	0.5	225.8	225.8	226.6	0.8
S	109,460	2220	15781	0.7	225.8	225.8	226.6	0.8
T	110,093	1635	12286	1.0	225.8	225.8	226.6	0.8
U	110,621	145	1602	7.4	225.8	225.8	226.6	0.8
V	110,885	90	1655	8.5	226.4	226.4	226.9	0.5
W	111,466	285	3033	4.6	227.2	227.2	227.8	0.6
X	111,730	140	2001	7.0	227.4	227.4	227.8	0.4
Y	112,205	320	3467	4.0	228.0	228.0	228.5	0.5
Z	113,208	720	6720	2.1	228.4	228.4	229.0	0.6
AA	114,740	1430	12546	1.1	228.6	228.6	229.2	0.6

[1] FEET ABOVE CONFLUENCE WITH MERRIMACK RIVER

[2] THIS WIDTH EXTENDS BEYOND THE COUNTY BOUNDARY

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

NASHUA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	118,224	2260	18411	0.8	228.7	228.7	229.3	0.6
AC	119,914	2330	20168	0.7	228.7	228.7	229.3	0.6
AD	120,389	2170	16459	0.9	228.7	228.7	229.3	0.6
AE	122,443	1660	8125	1.7	228.7	228.7	229.3	0.6
AF	123,182	2120	11746	1.2	228.9	228.9	229.5	0.6
AG	124,238	2690	16674	0.8	228.9	228.9	229.5	0.6
AH	126,456	3540	18249	0.8	229.0	229.0	229.6	0.6
AI	127,728	3210	17610	0.8	229.1	229.1	229.6	0.5
AJ	130,421	3240	17344	0.8	229.1	229.1	229.6	0.5
AK	132,586	3700	19976	0.7	229.2	229.2	229.7	0.5
AL	134,064	3760	14201	1.0	229.2	229.2	229.7	0.5
AM	134,429	3750	18197	0.8	230.9	230.9	230.9	0.0
AN	135,596	4060	20496	0.7	230.9	230.9	230.9	0.0
AO	137,074	3470	14411	1.0	231.1	231.1	231.2	0.1
AP	138,658	2218	8492	1.6	231.3	231.3	231.6	0.3
AQ	140,664	1770	6170	2.9	232.6	232.6	233.0	0.4
AR	141,615	1670	4388	4.1	233.3	233.3	234.1	0.8
AS	142,143	870	5022	1.0	235.3	235.3	235.5	0.2
AT	145,205	668	2466	2.0	236.0	236.0	236.7	0.7
AU	146,472	334	1252	3.9	236.7	236.7	237.2	0.5
AV	146,842	115	656	7.5	236.8	236.8	237.5	0.7
AW	147,317	95	823	6.0	238.2	238.2	238.5	0.3
AX	147,528	97	635	7.7	238.4	238.4	238.6	0.2
AY	147,951	88	694	7.1	239.5	239.5	239.5	0.0
AZ	148,738	160	1189	4.1	240.3	240.3	240.9	0.6
BA	150,110	85	697	7.0	241.4	241.4	242.1	0.7
BB	150,269	205	1445	3.4	242.5	242.5	243.4	0.9

[1] FEET ABOVE CONFLUENCE WITH MERRIMACK RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

NASHUA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	151,219	337	2091	2.3	243.4	243.4	244.3	0.9
BD	153,014	665	2560	1.9	244.4	244.4	244.9	0.5
BE	154,334	80	470	10.4	244.4	244.4	244.9	0.5
BF	154,440	67	590	8.3	247.0	247.0	247.0	0.0
BG	156,341	197	1326	3.7	250.5	250.5	251.2	0.7
BH	158,822	286	1576	3.1	252.4	252.4	253.2	0.8
BI	158,928	366	2368	2.1	254.5	254.5	254.8	0.3
BJ	160,512	80	715	6.9	254.9	254.9	255.1	0.2
BK	160,670	62	701	7.0	255.8	255.8	256.4	0.6
BL	161,779	462	2842	1.7	257.9	257.9	258.7	0.8
BM	161,885	438	2437	2.0	258.4	258.4	259.1	0.7
BN	162,835	82	860	5.7	258.5	258.5	259.3	0.8
BO	163,838	115	807	6.1	259.9	259.9	260.6	0.7
BP	165,634	100	1055	4.6	263.9	263.9	264.3	0.4
BQ	166,162	190	1657	3.0	265.6	265.6	266.1	0.5
BR	166,373	180	512	9.6	283.6	283.6	283.6	0.0

[1] FEET ABOVE CONFLUENCE WITH MERRIMACK RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

NASHUA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	123	356	7.1	215.9	213.7 [2]	214.7	1.0
B	1,690	235	1125	2.2	217.8	217.8	218.5	0.7
C	3,300	315	1231	2.0	219.5	219.5	219.9	0.4
D	3,384	350	2347	1.0	220.7	220.7	220.8	0.1
E	3,458	350	1668	1.5	220.7	220.7	220.8	0.1
F	4,620	206	1237	2.0	221.0	221.0	221.1	0.1
G	4,726	180	1116	2.2	222.4	222.4	222.4	0.0
H	4,942	234	1179	2.1	222.5	222.5	222.5	0.0
I	5,518	303	824	3.1	222.9	222.9	222.9	0.0
J	5,977	590	4109	0.6	226.0	226.0	226.0	0.0
K	6,104	650	6795	0.4	228.6	228.6	229.6	1.0
L	6,526	600	6859	0.4	228.6	228.6	229.6	1.0
M	7,498	123	704	2.9	229.1	229.1	229.7	0.6
N	7,561	235	1840	1.1	232.2	232.2	232.3	0.1
O	8,659	224	816	2.0	232.6	232.6	232.6	0.0
P	9,182	405	2087	0.8	233.1	233.1	233.1	0.0
Q	9,472	145	690	2.2	234.0	234.0	234.0	0.0
R	10,164	82	455	3.1	234.4	234.4	234.5	0.1
S	10,840	162	837	1.7	234.6	234.6	235.2	0.6
T	11,896	100	216	5.8	236.5	236.5	236.5	0.0
U	12,102	306	1636	0.8	238.9	238.9	238.9	0.0
V	12,672	106	492	2.5	239.1	239.1	239.4	0.3
W	13,490	406	1771	0.7	239.2	239.2	239.7	0.5
X	13,548	311	1743	0.7	240.3	240.3	241.0	0.7
Y	13,607	435	1798	0.7	240.3	240.3	241.0	0.7
Z	14,589	55	149	7.9	243.7	243.7	244.4	0.7
AA	15,998	319	943	1.3	246.6	246.6	247.5	0.9

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

NORTH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	16,157	32	175	6.8	247.8	247.8	247.8	0.0
AC	16,368	76	321	3.5	247.8	247.8	247.9	0.1
AD	16,870	45	260	4.4	247.8	247.8	248.4	0.6
AE	21,944	109	1204	2.3	273.3	273.3	273.9	0.6
AF	21,991	123	1778	1.5	283.5	283.5	283.5	0.0
AG	22,229	73	684	4.0	283.5	283.5	283.5	0.0
AH	22,678	179	1116	2.5	283.8	283.8	283.8	0.0
AI	22,936	121	394	6.9	286.8	286.8	287.0	0.2
AJ	23,126	161	959	2.8	288.2	288.2	288.8	0.6
AK	23,401	79	427	3.1	288.3	288.3	289.0	0.7
AL	23,771	39	219	6.1	288.8	288.8	289.4	0.6
AM	23,892	154	855	1.6	291.5	291.5	292.5	1.0
AN	23,934	84	595	2.2	291.5	291.5	292.5	1.0
AO	25,133	84	542	2.5	292.1	292.1	293.1	1.0
AP	26,405	31	138	9.7	305.8	305.8	306.8	1.0
AQ	27,672	59	293	4.6	317.4	317.4	318.3	0.9
AR	28,829	35	228	4.2	321.8	321.8	322.8	1.0
AS	28,961	104	1572	0.6	335.3	335.3	335.3	0.0
AT	29,066	35	479	2.0	335.4	335.4	335.4	0.0
AU	30,281	39	122	7.9	342.0	342.0	343.0	1.0
AV	30,360	145	691	1.4	346.1	346.1	346.1	0.0
AW	30,466	43	130	7.4	348.6	348.6	349.6	1.0
AX	31,268	63	286	3.4	356.5	356.5	357.5	1.0
AY	31,390	193	959	1.0	359.8	359.8	359.8	0.0
AZ	31,532	154	1065	0.9	359.9	359.9	359.9	0.0
BA	32,424	120	600	1.2	359.9	359.9	360.1	0.2
BB	33,370	50	249	2.9	360.1	360.1	360.6	0.5

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

NORTH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	33,465	100	860	0.9	365.2	365.2	365.2	0.0
BD	33,581	83	410	1.8	365.2	365.2	365.2	0.0

[1] FEET ABOVE CONFLUENCE WITH ASSABET RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

NORTH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	4,171	2933	27472	0.6	242.2	242.2	242.7	0.5
B	6,125	2525	24738	0.7	242.2	242.2	242.7	0.5
C	6,970	1845	17661	0.9	242.3	242.3	242.8	0.5
D	8,131	1804	14886	1.1	242.3	242.3	242.8	0.5
E	9,874	852	6756	2.7	242.5	242.5	243.1	0.6
F	10,824	884	7805	2.3	242.9	242.9	243.5	0.6
G	11,563	745	5570	3.2	243.3	243.3	243.9	0.6
H	13,094	633	6652	2.7	248.4	248.4	248.6	0.2
I	13,622	784	8971	2.0	248.7	248.7	248.9	0.2
J	18,374	155	1704	10.6	251.3	251.3	251.7	0.4
K	18,691	102	1429	12.6	251.5	251.5	252.1	0.6
L	20,486	167	2086	8.6	259.9	259.9	260.1	0.2
M	22,651	150	2131	8.4	263.3	263.3	263.6	0.3
N	24,235	550	4293	4.2	265.3	265.3	265.7	0.4
O	30,254	757	8256	2.2	271.8	271.8	272.3	0.5
P	32,630	969	8445	2.1	272.7	272.7	273.2	0.5
Q	34,162	955	8283	2.2	273.6	273.6	274.2	0.6
R	36,221	1480	8318	2.2	274.7	274.7	275.5	0.8
S	37,858	983	5218	3.4	277.1	277.1	277.6	0.5
T	38,755	184	2068	8.7	277.8	277.8	278.3	0.5

[1] FEET ABOVE CONFLUENCE WITH NASHUA RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

NORTH NASHUA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	215	15	30	5.3	283.5	283.5	283.5	0.0
B	515	*	17	9.4	289.8	289.8	289.8	0.0

[1] FEET ABOVE CONFLUENCE WITH GODFREY BROOK

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

O'BRIEN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	5,430	73	332	2.9	305.6	305.6	306.6	1.0
B	5,490	101	420	2.3	305.9	305.9	306.8	0.9
C	5,540	40	186	5.2	308.3	308.3	308.4	0.1
D	5,609	103	679	1.4	313.9	313.9	314.9	1.0
E	5,671	177	896	1.1	314.0	314.0	315.0	1.0
F	5,731	72	136	7.1	316.8	316.8	316.8	0.0
G	5,842	81	289	3.3	322.5	322.5	322.6	0.1
H	6,008	72	201	4.8	326.9	326.9	327.1	0.2
I	6,112	140	182	5.3	337.1	337.1	337.3	0.2
J	6,284	150	516	1.9	338.7	338.7	338.9	0.2
K	6,388	63	90	10.8	341.8	341.8	341.9	0.1
L	6,463	100	692	1.4	344.2	344.2	344.2	0.0
M	7,243	100	181	5.3	348.4	348.4	348.7	0.3
N	8,103	109	373	2.6	356.3	356.3	357.3	1.0
O	8,238	286	2372	0.4	361.8	361.8	362.8	1.0
P	8,338	243	1626	0.6	361.8	361.8	362.8	1.0
Q	9,288	116	190	5.1	383.3	383.3	383.4	0.1
R	10,338	54	144	6.7	412.9	412.9	413.9	1.0
S	10,511	111	401	2.4	424.1	424.1	424.2	0.1
T	10,633	27	92	10.5	426.4	426.4	426.6	0.2

[1] FEET ABOVE MOUTH AT CEDAR SWAMP POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

PICCADILLY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.154	40	92	3.9	704.9	704.9	705.5	0.6
B	0.192	35	88	4.1	712.1	712.1	712.9	0.8
C	0.235	15	42	8.5	715.2	715.2	715.4	0.2
D	0.296	40	100	3.6	720.3	720.3	720.3	0.0
E	0.359	25	54	6.6	722.8	722.8	723.0	0.2
F	0.506	80	148	2.4	727.7	727.7	728.6	0.9
G	0.568	100	670	0.5	735.1	735.1	735.6	0.5
H	1.070	15	36	7.8	767.6	767.6	767.7	0.1
I	1.118	60	255	1.1	774.4	774.4	774.4	0.0
J	1.290	20	37	7.7	781.3	781.3	781.3	0.0

[1] MILES ABOVE CONFLUENCE WITH PIKES POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

PIKES POND TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	350	770	0.6	175.1	175.1	175.1	0.0
B	600	150	40	11.0	181.6	181.6	181.6	0.0
C	620	150	40	11.0	184.1	184.1	184.1	0.0
D	720	200	120	3.7	185.2	185.2	185.2	0.0
E	1,220	170	120	3.7	189.8	189.8	189.8	0.0
F	2,220	220	200	2.2	199.3	199.3	199.3	0.0
G	3,220	250	180	2.4	209.0	209.0	209.0	0.0

[1] FEET ABOVE CONFLUENCE WITH HARRIS POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

QUICK STREAM

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.498	200	2,077	5.1	355.6	355.6	356.5	0.9
B	0.547	150	1,528	6.9	355.8	355.8	356.4	0.6
C	0.625	250	2,316	4.5	356.7	356.7	357.4	0.7
D	0.798	150	1,543	6.8	357.4	357.4	358.3	0.9
E	0.975	100	1,243	8.4	358.4	358.4	359.3	0.9
F	1.272	100	1,000	10.5	361.8	361.8	362.4	0.6
G	1.554	120	1,502	7	366.3	366.3	366.9	0.6
H	1.800	150	1,933	5.4	368.1	368.1	368.7	0.6
I	2.052	150	1,602	6.6	369.2	369.2	369.9	0.7
J	2.291	75	926	11.3	370.6	370.6	371.6	1
K	2.491	100	1,304	8.1	374.1	374.1	375	0.9
L	2.944	390	5,949	1.5	385.4	385.4	385.4	0
M	3.356	140	1,945	4.7	385.4	385.4	385.4	0
N	3.746	500	2,903	3.1	390.1	390.1	390.7	0.6
O	4.103	220	1,588	5.7	393.5	393.5	394.2	0.7
P	4.382	80	970	9.4	396.2	396.2	396.5	0.3
Q	4.566	110	1,244	7.3	399.4	399.4	399.9	0.5
R	4.821	90	826	7.6	401.3	401.3	402.1	0.8
S	4.979	100	847	7.4	403.6	403.6	404.2	0.6
T	5.027	210	1,674	3.8	407.5	407.5	408.4	0.9
U	5.207	115	1,164	5.4	408.7	408.7	409.4	0.7
V	5.307	105	1,316	4.8	409.3	409.3	410	0.7
W	6.070	80	496	5.6	421.3	421.3	421.7	0.4
X	6.124	60	444	6.3	421.7	421.7	422.1	0.4
Y	6.232	40	266	10.5	422.6	422.6	423.4	0.8
Z	6.303	60	362	7.7	425.9	425.9	426.4	0.5
AA	6.545	50	319	8.8	446.7	446.7	447.6	0.9

[1] MILES ABOVE OLD TURNPIKE ROAD (ROUTE 197)

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

QUINEBAUG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	6.660	100	439	6.4	451.2	451.2	451.7	0.5
AC	6.945	80	347	8.1	466.5	466.5	466.7	0.2
AD	7.013	110	453	6.2	469.2	469.2	469.4	0.2
AE	7.206	100	713	3.5	479.2	479.2	479.2	0
AF	7.323	50	252	9.9	479.5	479.5	479.6	0.1
AG	7.406	44	209	12	481.8	481.8	482	0.2
AH	7.466	44	327	7.7	485.5	485.5	486	0.5
AI	7.565	32	183	13.6	489.3	489.3	489.3	0
AJ	7.653	60	475	5.3	493.2	493.2	493.8	0.6
AK	7.856	60	225	11.1	498	498	498	0
AL	8.047	60	331	7.6	508.1	508.1	508.6	0.5
AM	13.632	50	284	4.2	570.2	570.2	571.2	1
AN	13.855	55	314	3.8	572.3	572.3	573.1	0.8
AO	14.282	40	204	5.9	575	575	575.7	0.7
AP	14.476	60	224	5.4	578.5	578.5	578.8	0.3
AQ	14.665	40	121	9.9	585.1	585.1	585.1	0
AR	14.770	140	860	1.4	597.8	597.8	597.8	0
AS	14.900	60	138	8.7	597.8	597.8	597.8	0
AT	15.042	40	236	5.1	601.4	601.4	601.9	0.5
AU	15.149	50	230	5.2	603	603	603.6	0.6
AV	15.176	50	130	9.2	605.1	605.1	605.1	0
AW	15.233	80	313	3.8	608.9	608.9	609.1	0.2
AX	15.299	50	162	7.4	608.9	608.9	609.1	0.2
AY	15.411	90	317	3.8	612.3	612.3	612.4	0.1
AZ	15.599	60	326	3.7	617.3	617.3	618	0.7
BA	15.768	20	130	9.2	621.3	621.3	622.0	0.7

[1] MILES ABOVE OLD TURNPIKE ROAD (ROUTE 197)

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

QUINEBAUG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	310	1485	3028	0.4	293.2	291.2 [2]	292.2	1.0
B	1,520	500	4057	0.3	293.2	291.2 [2]	292.2	1.0
C	2,645	422	3286	0.4	293.2	291.2 [2]	292.2	1.0
D	4,670	175	625	2.1	293.2	291.2 [2]	292.2	1.0
E	6,200	185	644	2.0	293.2	292.5 [2]	293.1	0.6
F	8,100	80	777	1.7	293.2	293.1 [2]	293.6	0.5
G	8,320	64	341	3.6	295.8	295.8	295.8	0.0
H	10,360	240	950	1.3	296.3	296.3	297.0	0.7
I	11,225	127	535	2.3	296.5	296.5	297.4	0.9
J	11,350	61	410	3.0	296.8	296.8	297.5	0.7
K	12,430	100	453	2.7	297.5	297.5	298.3	0.8
L	13,170	130	497	2.5	298.1	298.1	299.0	0.9
M	13,480	76	352	3.5	298.8	298.8	299.4	0.6
N	14,025	135	1221	1.0	307.1	307.1	307.1	0.0
O	14,950	470	6894	0.2	307.1	307.1	307.1	0.0
P	16,220	100	1020	1.3	307.1	307.1	307.1	0.0
Q	17,880	130	933	1.2	307.2	307.2	307.3	0.1
R	18,775	50	370	3.1	307.2	307.2	307.3	0.1
S	19,175	75	564	2.1	308.4	308.4	308.6	0.2
T	19,968	46	330	3.5	308.5	308.5	308.8	0.3
U	20,560	65	560	2.1	308.7	308.7	309.0	0.3
V	21,675	561	2959	0.4	308.7	308.7	309.1	0.4
W	22,540	470	3075	0.4	308.7	308.7	309.1	0.4
X	23,390	25	71	9.6	319.2	319.2	319.5	0.3
Y	23,560	163	956	0.7	333.7	333.7	333.7	0.0
Z	23,770	55	301	2.3	336.3	336.3	336.3	0.0
AA	24,540	17	62	10.9	338.2	338.2	338.3	0.1

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

QUINSIGAMOND RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	25,310	94	184	3.7	339.3	339.3	340.3	1.0
AC	25,450	450	5314	0.1	357.7	357.7	357.7	0.0

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

QUINSIGAMOND RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	94	476	3.3	516.7	516.7	517.7	1.0
B	1,640	66	335	4.7	519.9	519.9	520.9	1.0
C	2,700	170	242	6.4	546.7	546.7	546.7	0.0
D	2,705	311	507	3.1	547.5	547.5	547.6	0.1
E	2,875	277	3005	0.5	547.9	547.9	548.0	0.1
F	2,995	132	807	1.9	548.0	548.0	548.0	0.0
G	3,715	88	197	7.9	559.2	559.2	559.8	0.6
H	3,753	153	537	2.9	560.2	560.2	561.2	1.0
I	4,173	322	2680	0.4	560.4	560.4	561.5	1.1
J	6,023	451	3064	0.3	560.5	560.5	561.5	1.0
K	7,123	53	148	6.4	566.3	566.3	566.3	0.0
L	7,253	10	64	14.8	574.9	574.9	574.9	0.0
M	7,405	50	117	8.3	580.2	580.2	580.2	0.0
N	7,550	45	229	4.1	581.6	581.6	582.3	0.7
O	7,840	84	159	6.0	583.7	583.7	584.0	0.3
P	8,290	27	91	10.5	589.1	589.1	589.1	0.0
Q	8,341	25	253	3.8	601.7	601.7	601.9	0.2
R	8,781	178	684	1.4	603.1	603.1	604.1	1.0
S	9,261	82	359	1.3	603.3	603.3	604.2	0.9
T	10,791	77	136	3.4	608.4	608.4	609.2	0.8
U	11,876	21	70	3.7	614.0	614.0	614.4	0.4
V	11,982	11	28	9.2	614.3	614.3	614.4	0.1
W	12,087	21	35	7.4	618.7	618.7	618.7	0.0
X - Y*								

[1] FEET ABOVE CONFLUENCE WITH PONDVILLE POND

* NO FLOODWAY DATA COMPUTED

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

RAMSHORN BROOK (TOWN OF MILLBURY)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	7,302	60	204	1.0	532.1	532.1	533.1	1.0
B	7,403	20	37	5.4	532.3	532.3	533.3	1.0
C	7,498	80	374	0.5	533.3	533.3	534.3	1.0
D	8,100	100	794	0.3	542.7	542.7	543.7	1.0
E	8,200	*	53	3.8	544.3	544.3	545.0	0.7
F	8,300	*	1308	0.2	544.3	544.3	545.3	1.0
G	8,802	*	2117	0.1	544.3	544.3	545.3	1.0
H	9,858	*	4066	0.0	544.3	544.3	545.3	1.0
I	11,658	12	25	8.2	548.0	548.0	548.5	0.5
J	11,759	86	110	1.8	557.1	557.1	557.1	0.0
K	11,859	140	943	0.2	557.6	557.6	557.7	0.1
L	12,941	22	39	5.2	585.1	585.1	585.4	0.3
M	13,042	56	334	0.6	590.2	590.2	590.2	0.0
N	13,142	74	269	0.7	590.2	590.2	590.2	0.0
O	13,580	10	23	8.7	596.5	596.5	596.5	0.0
P	13,680	10	44	2.5	598.2	598.2	598.4	0.2
Q	13,781	36	85	1.3	598.3	598.3	598.5	0.2
R	13,918	18	26	4.1	598.4	598.4	598.6	0.2
S	14,018	34	59	1.8	599.5	599.5	599.5	0.0
T	14,098	46	189	0.6	600.3	600.3	600.3	0.0
U	14,272	12	95	1.1	602.9	602.9	602.9	0.0
V	14,731	270	1214	0.1	603.0	603.0	603.0	0.0
W	15,608	132	989	0.1	603.0	603.0	603.0	0.0
X	15,708	166	1780	0.1	607.0	607.0	607.0	0.0
Y	15,808	290	2743	0.0	607.0	607.0	607.0	0.0

[1] FEET ABOVE CONFLUENCE WITH COLD HARBOR BROOK

* NO FLOODWAY COMPUTED DO TO MINIMAL CONVEYANCE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

RAWSON HILL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,500	436	1282	0.5	278.8	278.8	279.8	1.0
B	4,054	463	1436	0.2	280.7	280.7	281.7	1.0
C	5,100	27	40	7.3	281.0	281.0	281.7	0.7
D	5,578	14	75	2.8	283.4	283.4	283.9	0.5
E	7,435	516	2325	0.1	285.6	285.6	285.6	0.0
F	9,214	53	129	1.6	285.6	285.6	285.8	0.2
G	9,938	40	100	2.1	288.7	288.7	289.7	1.0
H	11,452	53	207	1.0	292.7	292.7	293.7	1.0
I	11,670	26	33	6.4	303.1	303.1	303.1	0.0
J	11,963	58	137	1.5	305.1	305.1	305.7	0.6
K	12,152	16	29	7.9	306.8	306.8	307.0	0.2
L	12,463	292	1118	0.2	312.5	312.5	312.5	0.0

[1] FEET ABOVE CONFLUENCE WITH SULLIVAN BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

RUTTERS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	12,500	200	*	*	624.8	624.8	*	*
B	14,440	90	*	*	628.5	628.5	*	*
C	14,660	180	*	*	629.0	629.0	*	*
D	14,780	220	*	*	629.3	629.3	*	*
E	14,890	200	*	*	629.5	629.5	*	*
F	15,030	75	*	*	631.9	631.9	*	*
G	15,380	100	*	*	632.1	632.1	*	*
H	15,850	140	*	*	632.6	632.6	*	*
I	16,150	140	*	*	632.6	632.6	*	*
J	16,380	110	*	*	632.8	632.8	*	*
K	18,150	230	*	*	633.3	633.3	*	*
L	24,000	180	*	*	636.4	636.4	*	*
M	24,150	210	*	*	638.0	638.0	*	*
N	24,280	245	*	*	638.6	638.6	*	*
O	25,350	110	*	*	639.1	639.1	*	*
P	26,350	85	*	*	640.6	640.6	*	*
Q	26,600	70	*	*	642.5	642.5	*	*
R	26,800	190	*	*	642.6	642.6	*	*
S	27,240	340	*	*	642.6	642.6	*	*

[1] STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH EAST BROOKFIELD RIVER

* DATA NOT AVAILABLE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

SEVENMILE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-1,404	57	584	0.7	401.0	401.0	402.0	1.0
B	-565	76	361	1.1	401.1	401.1	402.1	1.0
C	0	235	1395	0.3	401.1	401.1	402.1	1.0
D	2,170	10	29	9.6	413.9	413.9	414.2	0.3
E	2,429	20	116	2.4	420.1	420.1	420.2	0.1
F	3,685	20	54	5.2	439.2	439.2	439.7	0.5
G	4,720	40	113	2.5	443.5	443.5	444.1	0.6
H	7,608	15	41	5.3	480.1	480.1	481.0	0.9
I	8,078	10	37	5.8	496.3	496.3	496.3	0.0

[1] FEET ABOVE SEWALL POND OUTLET

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

SEWALL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,105	55	424	1.9	393.0	391.3 [2]	392.3	1.0
B	1,565	26	195	4.2	393.0	391.3 [2]	392.3	1.0
C	1,667	26	198	4.2	393.0	391.6 [2]	392.6	1.0
D	2,627	116	333	2.5	394.3	394.3	395.1	0.8
E	2,651	107	268	3.1	394.3	394.3	395.2	0.9
F	3,291	120	1010	0.8	394.5	394.5	395.5	1.0
G	3,542	18	59	10.4	409.7	409.7	409.7	0.0
H	3,623	80	491	1.3	411.8	411.8	411.8	0.0
I	3,753	240	93	6.6	411.9	411.9	411.9	0.0
J	3,973	22	64	9.7	416.5	416.5	416.5	0.0
K	4,283	16	86	7.1	433.6	433.6	433.6	0.0
L	4,468	150	895	0.7	452.5	452.5	453.5	1.0
M	4,819	26	67	9.2	472.0	472.0	472.0	0.0
N	4,889	17	52	11.8	475.3	475.3	475.3	0.0
O	5,170	50	388	1.6	496.7	496.7	497.3	0.6

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

[2] ELEVATIONS COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

SINGLETARY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	180	34	52	3.3	381.6	381.6	382.6	1.0
B	705	*	21	8.1	400.0	400.0	400.0	0.0
C	840	*	92	1.9	404.2	404.2	404.5	0.3
D	930	*	388	0.4	405.8	405.8	406.0	0.2
E	1,040	*	20	8.5	409.9	409.9	409.9	0.0
F	1,360	*	1530	0.1	423.5	423.5	423.7	0.2
G	1,720	*	23	7.3	424.5	424.5	424.5	0.0

[1] FEET ABOVE CONFLUENCE WITH MUMFORD RIVER

* FLOODWAY COINCIDENT WITH CHANNEL BANKS

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

SOUTHWICK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	-1,780	25	103	1.9	246.1	246.1	246.9	0.8
B	-350	59	181	1.1	246.9	246.9	247.8	0.9
C	393	125	418	0.4	249.2	249.2	250.2	1.0
D	955	89	364	0.3	249.2	249.2	250.2	1.0
E	1,143	101	331	0.4	249.4	249.4	250.4	1.0

[1] FEET ABOVE INTERSTATE ROUTE 495

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

STALL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	684	18	27	4.3	260.4	258.8 [2]	259.2	0.4
B	2,217	6	14	8.6	268.0	268.0	268.6	0.6
C	4,218	11	17	7.0	310.9	310.9	310.9	0.0

[1] FEET ABOVE CONFLUENCE WITH STONY BROOK

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM STONY BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

STONY BROOK TRIBUTARY 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	149,553	62 / 110 [2]	721	3.1	224.7	224.7	224.7	0.0
B	151,386	25 / 40 [2]	326	6.9	229.0	229.0	229.1	0.1
C	152,854	95 / 169 [2]	814	2.8	233.6	233.6	234.2	0.6
D	153,706	55 / 67 [2]	540	3.3	235.5	235.5	236.1	0.6
E	154,029	15 / 31 [2]	150	11.7	238.3	238.3	238.3	0.0
F	154,060	27 / 79 [2]	785	2.9	245.8	245.8	245.9	0.1
G	154,651	91 / 331 [2]	2075	1.0	255.6	255.6	255.6	0.0
H	155,838	12 / 45 [2]	254	7.9	255.7	255.7	255.8	0.1
I	157,700	36 / 146 [2]	1028	2.0	259.0	259.0	259.9	0.9
J	159,340	2 / 75 [2]	269	7.5	262.3	262.3	262.4	0.1
K	160,957	59 / 301 [2]	1738	1.1	264.7	264.7	265.4	0.7
L	163,496	119	638	3.1	265.9	265.9	266.7	0.8
M	164,557	52 / 85 [2]	383	4.9	276.4	276.4	277.0	0.6
N	167,246	324 / 375 [2]	2301	0.8	277.3	277.3	278.3	1.0
O	168,273	62	685	2.8	277.7	277.7	278.5	0.8
P	168,855	55	586	3.2	277.9	277.9	278.7	0.8

[1] FEET ABOVE CONFLUENCE WITH CONCORD RIVER

[2] WIDTH WITHIN THE COUNTY / TOTAL WIDTH

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUDBURY RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	146	86	562	0.9	235.8	235.8	236.3	0.5
B	224	45	203	2.4	235.8	235.8	236.2	0.4
C	345	25	86	5.7	237.0	237.0	237.1	0.1
D	529	27	140	3.5	245.7	245.7	245.8	0.1

[1] FEET ABOVE CONVERGENCE WITH SUDBURY RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

SUDBURY RIVER SPLIT 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	180	48	82	1.9	233.9	229.9 [2]	230.8	0.9
B	700	105	240	0.6	240.9	240.9	240.9	0.0
C	1,130	8	18	8.5	247.2	247.2	247.2	0.0

[1] FEET ABOVE CONFLUENCE WITH SUDBURY RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM SUDBURY RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUDBURY RIVER TRIBUTARY 12

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	169,167	280	1491	1.3	278.1	278.1	279.0	0.9
B	175,099	1696	7057	0.2	278.6	278.6	279.6	1.0
C	179,860	855	2794	0.3	278.7	278.7	279.7	1.0

[1] FEET ABOVE CONFLUENCE WITH CONCORD RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

SULLIVAN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A-J*								
K	11,350	111	448	8.4	554.5	554.5	554.5	0.0
L	12,260	55	365	10.3	561.3	561.3	561.3	0.0
M	12,600	216	524	6.1	571.1	571.1	571.1	0.0
N	13,270	85	480	6.6	577.0	577.0	577.9	0.9
O	14,300	25	167	14.6	581.9	581.9	581.9	0.0
P	14,720	94	294	8.2	587.1	587.1	587.1	0.0
Q	15,360	47	415	5.8	589.8	589.8	590.8	1.0
R	16,060	150	824	2.9	591.3	591.3	592.3	1.0
S	16,560	102	350	6.9	598.5	598.5	598.5	0.0
T-W*								

[1] FEET ABOVE CONFLUENCE WITH BEAVER BROOK

* NO FLOODWAY DATA COMPUTED

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

TATNUCK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.015	240	1731	1.1	762.5	762.5	762.5	0.0
B	0.435	660	4074	0.5	762.6	762.6	762.6	0.0
C	0.635	24	86	10.8	762.6	762.6	762.6	0.0
D	0.815	70	150	6.2	767.4	767.4	768.3	0.9
E	0.845	26	185	5.0	770.7	770.7	770.7	0.0
F	0.965	85	265	3.5	771.1	771.1	771.9	0.8
G	1.033	26	89	10.5	774.0	774.0	774.5	0.5
H	1.145	16	82	11.4	782.8	782.8	783.3	0.5
I	1.299	24	99	9.5	797.8	797.8	798.3	0.5
J	1.357	20	86	10.9	801.9	801.9	802.1	0.2
K	1.816	375	1218	0.8	811.5	811.5	812.5	1.0
L	2.111	130	275	1.7	812.8	812.8	813.5	0.7
M	2.185	60	163	2.9	812.9	812.9	813.9	1.0
N	2.208	20	132	3.6	814.8	814.8	815.3	0.5
O	2.423	10	41	11.6	817.7	817.7	817.7	0.0
P	2.450	16	104	4.6	820.2	820.2	820.9	0.7
Q	2.519	20	52	9.2	823.5	823.5	823.5	0.0
R	2.731	16	68	7.1	837.8	837.8	838.1	0.3
S	2.746	240	1326	0.4	838.6	838.6	838.9	0.3
T	2.990	16	48	9.9	838.6	838.6	838.6	0.0
U	3.158	20	52	9.2	861.7	861.7	861.7	0.0
V	3.278	10	36	10.8	882.9	882.9	883.1	0.2
W	3.341	40	172	2.2	884.5	884.5	885.4	0.9
X	3.453	10	38	10.2	895.0	895.0	895.1	0.1
Y	3.498	30	52	7.5	908.3	908.3	908.3	0.0

[1] MILES ABOVE CONFLUENCE WITH FRENCH RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

TOWN MEADOW BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.285	215	1280	0.2	536.2	536.2	536.2	0.0
B	0.313	50	207	0.9	536.9	536.9	536.9	0.0
C	0.450	40	88	2.1	543.0	543.0	543.9	0.9
D	0.479	80	115	1.6	543.8	543.8	544.4	0.6
E	0.507	125	370	0.5	545.5	545.5	545.7	0.2
F	0.599	20	47	4.0	545.6	545.6	545.6	0.0
G	0.710	20	46	4.1	549.7	549.7	550.5	0.8

[1] MILES ABOVE NEW POND OUTLET

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,035	23	40	5.9	249.8	248.5 [2]	248.7	0.2
B	1,255	250	732	0.3	250.1	250.1	250.2	0.1
C	3,200	53	89	1.6	250.3	250.3	250.5	0.2
D	3,659	24	30	4.8	254.5	254.5	254.8	0.3

[1] FEET ABOVE CONFLUENCE WITH ELIZABETH BROOK

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ELIZABETH BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY TO ELIZABETH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	530	313	584	0 5	425.7	425.7	426.5	0.8
B	1,130	185	209	1.5	426.1	426.1	426.7	0.6
C	1,372	200	1204	1.7	430.8	430.8	430.9	0.1
D	1,922	150	848	1.7	430.8	430.8	431.0	0.2
E	2,462	102	546	1.3	430.8	430.8	431.0	0.2
F	3,092	12	19	0.6	430.8	430.8	431.0	0.2
G	3,330	5	8	5.1	454.6	454.6	455.2	0.6

[1] FEET ABOVE CONFLUENCE WITH WAUSHACUM BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY TO WAUSHACUM BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	50	19	59	10.1	496.8	496.8	497.3	0.5
B	640	47	96	6.2	513.2	513.2	513.2	0.0
C	1,070	112	135	4.4	520.7	520.7	520.7	0.0
D	1,140	134	241	2.5	521.7	521.7	521.8	0.1
E	1,225	200	1533	0.4	521.8	521.8	521.9	0.1
F	1,775	68	93	6.5	523.7	523.7	523.8	0.1

[1] FEET ABOVE CONFLUENCE WITH MAYO POND

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

UNNAMED TRIBUTARY TO MAYO POND

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0.042	40	296	1.5	583.8	583.8	584.7	0.9
B	0.138	40	187	2.4	583.8	583.8	584.8	1.0
C	0.309	120	726	0.6	584.0	584.0	584.9	0.9
D	0.745	730	5103	0.1	584.0	584.0	584.9	0.9
E	1.234	680	4751	0.1	584.0	584.0	584.9	0.9

[1] MILES ABOVE WALKER POND DAM

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

WALKER POND

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	150	20	64	8.1	392.2	392.2	392.3	0.1
B	670	20	55	9.5	401.3	401.3	401.3	0.0
C	815	9	53	9.8	408.0	408.0	408.0	0.0
D	1,415	18	65	8.0	417.6	417.6	418.1	0.5
E	1,875	17	82	6 3	420.9	420.9	421.9	1.0
F	2,040	15	56	9.4	423.8	423.8	423.8	0.0
G	2,660	113	376	1.4	425.7	425.7	426.6	0.9
H	3,210	337	1058	0.2	425.8	425.8	426.6	0.8
I	3,810	381	658	0 3	425.8	425.8	426.8	1.0
J	4,480	142	249	0.8	425.8	425.8	426.8	1.0
K	4,980	9	25	8.4	426.8	426.8	426.9	0.1
L	5,120	20	114	1.8	430.0	430.0	430.0	0.0

[1] FEET ABOVE CONFLUENCE WITH WACHUSETT RESERVOIR

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

WAUSHACUM BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	401	140	893	0.5	395.6	395.6	396.6	1.0
B	502	135	779	0.5	395.6	395.6	396.6	1.0
C	602	165	1071	0.4	395.7	395.7	396.7	1.0
D	692	195	1202	0.3	395.7	395.7	396.7	1.0
E	792	170	886	0.5	395.8	395.8	396.7	0.9
F	892	107	227	1.5	396.2	396.2	397.2	1.0
G	993	130	337	1.2	396.8	396.8	397.2	0.4
H	1,093	94	146	2.8	396.8	396.8	397.2	0.4
I	1,140	15	71	5.7	397.2	397.2	397.3	0.1
J	1,241	40	187	2.2	398.5	398.5	398.6	0.1
K	1,341	18	75	5.4	398.5	398.5	398.5	0.0
L	1,420	18	71	5.7	399.6	399.6	399.6	0.0
M	1,521	22	111	3.6	400.0	400.0	400.1	0.1
N	2,123	24	49	8.2	402.5	402.5	402.5	0.0
O	2,270	8	34	11.8	414.3	414.3	414.5	0.2
P	2,392	132	1099	0.4	416.2	416.2	417.0	0.8
Q	3,844	100	503	0.8	417.9	417.9	418.9	1.0
R	5,544	105	428	0.9	421.0	421.0	422.0	1.0
S	6,489	133	327	1.1	422.4	422.4	423.1	0.7
T	6,589	12	54	6.7	423.7	423.7	423.7	0.0
U	6,690	20	96	3.7	424.4	424.4	424.4	0.0
V	7,593	42	135	2.7	424.5	424.5	424.5	0.0

[1] FEET ABOVE CULVERT ENTRANCE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

WEST BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	110	37	151	7.7	264.8	264.8	264.8	0.0
B	295	100	570	2.0	266.2	266.2	266.6	0.4
C	1,415	625	2222	0.5	266.3	266.3	266.9	0.6
D	2,485	32	125	9.3	272.8	272.8	273.2	0.4
E	2,740	45	124	9.4	295.1	295.1	295.1	0.0
F	2,965	43	406	2.9	296.8	296.8	297.7	0.9
G	3,105	33	300	3.9	297.2	297.2	298.0	0.8
H	4,125	155	965	0.8	297.9	297.9	298.9	1.0
I	4,540	262	2558	0.3	308.7	308.7	308.7	0.0
J	7,935	190	1771	0.4	308.7	308.7	308.7	0.0
K	10,550	33	84	9.2	311.2	311.2	311.2	0.0
L	10,655	25	135	5.7	314.7	314.7	314.7	0.0
M	10,690	25	134	5.7	314.7	314.7	314.7	0.0
N	12,580	225	1121	0.6	331.7	331.7	332.5	0.8
O	14,510	420	1352	0.5	332.1	332.1	333.0	0.9
P	15,810	105	130	5.2	338.4	338.4	338.4	0.0
Q	15,980	50	167	4.1	344.4	344.4	344.4	0.0
R	16,105	186	2286	0.3	354.4	354.4	354.4	0.0

[1] FEET ABOVE HARTFORD AVENUE

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

WEST RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,560	155	504	1.9	224.0	215.2 [2]	216.2	1.0
B	2,660	91	284	3.3	224.0	216.5 [2]	217.1	0.6
C	3,605	31	157	6.0	224.0	218.1 [2]	219.1	1.0
D	3,965	249	854	1.0	224.0	220.3 [2]	220.7	0.4
E	5,228	280	515	1.8	224.0	220.9 [2]	221.5	0.6
F	7,378	220	650	1.5	224.0	223.0 [2]	223.7	0.7
G	8,618	35	163	5.8	224.7	224.7	224.9	0.2
H	8,738	28	163	4.1	225.2	225.2	225.5	0.3
I	9,468	20	119	5.6	226.3	226.3	226.9	0.6
J	9,820	29	129	5.1	226.6	226.6	227.3	0.7
K	9,937	44	306	2.2	227.3	227.3	227.9	0.6
L	10,070	150	1405	0.5	235.6	235.6	235.6	0.0
M	11,664	150	1368	0.5	235.6	235.6	235.6	0.0
N	14,313	225	1424	0.4	235.6	235.6	235.6	0.0
O	18,285	90	1034	0.6	235.7	235.7	235.7	0.0
P	18,450	34	232	2.6	237.2	237.2	237.2	0.0
Q	21,300	42	176	3.4	237.2	237.2	237.3	0.1
R	21,914	43	244	2.5	237.7	237.7	237.8	0.1
S	22,045	23	148	4.1	240.7	240.7	240.8	0.1

[1] FEET ABOVE CONFLUENCE WITH BLACKSTONE RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM BLACKSTONE RIVER

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

WEST RIVER (TOWN OF UXBRIDGE)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	0	82	453	3.1	288.3	288.3	289.3	1.0
B	259	110	318	4.5	292.9	292.9	292.9	0.0
C	290	270	1103	1.3	292.9	292.9	293.9	1.0
D	348	220	986	1.4	294.2	294.2	294.3	0.1
E	380	240	1138	1.3	294.2	294.2	294.7	0.5
F	496	105	521	2.7	295.3	295.3	295.3	0.0
G	618	190	984	1.4	295.3	295.3	295.3	0.0
H	998	28	120	11.8	296.2	296.2	296.9	0.7
I	1,489	52	169	8.4	303.4	303.4	303.8	0.4
J	1,600	330	2771	0.5	311.3	311.3	312.3	1.0
K	1,727	270	953	1.5	311.3	311.3	312.3	1.0
L	1,811	390	2260	0.6	316.2	316.2	316.2	0.0
M	1,885	157	505	2.8	316.2	316.2	316.2	0.0
N	2,946	100	179	7.7	319.4	319.4	319.4	0.0
O	3,965	35	243	5.7	324.8	324.8	325.4	0.6
P	4,979	39	131	10.6	333.3	333.3	333.3	0.0

[1] FEET ABOVE CONFLUENCE WITH NORTH BROOK

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
(ALL JURISDICTIONS)

FLOODWAY DATA

WRACK MEADOW BROOK

July 2011 Partial Countywide Analysis

No floodways were computed for the portion of Dark Brook # 1 upstream of Auburn Street, in the vicinity of Drury Square, for the portion of the stream from Stoneville Road to Dark Brook Reservoir, for Ramshorn Brook (Town of Auburn), for Pondville Pond, for the Unnamed Tributary, from Leesville Pond to Rockland Street, and for Stoneville Pond in Auburn because of hazardous channel velocities and encroachments. In addition, floodways for Kettle Brook (Town of Auburn), from its mouth to Oxford Street were not computed because of hazardous velocities along the channel and adjacent floodplain.

No floodways were computed for Dorothy Brook and Stone Brook in previous FISs and thus no table exists for these flooding sources in this partial countywide FIS.

For Beaver, Dark, Ramshorn, Rutters, and Tatnuck Brooks, the cross sections noted in the Floodway Data Table as having no floodway data are not shown on the effective FIRM due to insufficient data in previous studies. However, these cross-sections are shown on their respective profile stations (see Exhibit 1).

No floodway is shown from Ross Dam upstream to West Road in Berlin because the water impounded behind Ross Dam is an area of non-conveyance.

The floodway for the Still River in the Town of Bolton was computed without considering Nashua River backwater and was found to fall completely within the floodway boundaries computed for the Nashua River. Therefore, no floodway data for the Still River has been included.

No floodway was computed along the Charles River in the Towns of Hopedale and Mendon because of the rather extensive areas of natural valley storage and due to the protections afforded against filling of natural flood storage areas that is possible under the Massachusetts Wetlands Protection Act (Massachusetts General Law, Chapter 131, Section 40).

In the Town of Millbury, no floodway data were computed for Dorothy Pond or for a portion of Ramshorn Brook (Town of Millbury) (including Ramshorn Pond) from Dolan Road and Dam to the upstream corporate limits.

No floodway was computed for Riverdale Mills Sluice Gates and Tail Race in Northbridge.

No floodway was designated on Rawson Hill Brook in the Town of Shrewsbury, upstream of the Rawson Hill Dam, because the area is a storage basin for water behind the dam and has very little conveyance.

No floodway was established for Whitins Pond or Tucker's Pond in the Town of Sutton since they are impoundments for which a floodway is not applicable.

Also in the Town of Westborough, no floodway was determined for Piccadilly Brook within the Cedar Swamp area. In Worcester, no floodways were computed for Kettle Brook (East), Mill Brook Conduit, and for portions of Beaver Brook and Tatnuck Brook.

For the July 2011 partial countywide revision, the floodway for the Blackstone River was revised and adjusted based on the effective regulatory floodway width. In some areas, the regulatory floodway width was increased or decreased to maintain the regulatory surcharge value of one foot. Where no effective regulatory floodway existed for the restudied streams segments, the floodway presented in this study was computed on the basis of equal conveyance reduction from each side of the floodplain using the HEC-RAS model version 3.1.3.

The following information was compiled from previous FISs:

Floodway data were computed for Dunn's Brook, from its confluence with Kettle Brook (Town of Auburn) to a point approximately 0.86 mile upstream. Floodway data was also computed for Dark Brook #1 in Auburn, from a point approximately 2,254 feet upstream of its confluence with Auburn Pond to Central Street. For the portions in Auburn without floodways, the 1-percent-annual-chance floodplain should be considered the floodway, with the exception of fringe areas that do not contribute to the conveyance of flow. The Kettle Brook (Town of Auburn) area (from its mouth to Oxford Street) can be developed if such development is adequately protected from erosive velocities. Encroachment within the floodplains for Pondville, Leesville and Stoneville Ponds would not significantly increase the water surface elevations; however, encroachment should not be allowed within the shore of the ponds because it could aggravate flood conditions.

In the Town of Berlin, for purposes of floodway computations, the NCRS survey data and the 1-percent-annual-chance peak discharges were input to the HEC-2 model, and the model calibrated to the NCRS 1-percent-annual-chance profile.

For the floodplain of the Nashua River and the Still River in the Town of Bolton, floodway computations were carried out for both streams but the Still River was within the Nashua River floodway and is not included in the floodway data. A floodway has been delineated for the diversion channel at the downstream corporate limit of Great Brook. This diversion is in operation during periods of high flow. The floodway delineated for this diversion has been established as the channel banks because no flow leaves the banks. The flow from this diversion passes into the Town of Harvard and into a flood storage reservoir.

In the Town of Grafton, encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 12, Floodway Data. In order to reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway. Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body.

Portions of the floodway widths for the Nashua River and Elizabeth Brook in the Town of Harvard extend beyond the corporate limits into Middlesex County, MA. Nashua River extends into the Towns of Shirley and Ayer and the Elizabeth Brook extends into the Town of Boxborough.

The floodway for certain portions of Muddy Brook in the Town of Mendon is contained within the channel banks.

Portions of the floodway widths for the Mill River in the Town of Milford extend beyond the corporate limits into the Town of Hopkinton, MA (Middlesex County).

In using the floodway designated in the Town of Northborough, it should be noted that the floodway lines reflect only conveyance reduction and do not reflect decreased storage volumes or increased runoff rates from development, both of which would tend to increase flood elevations and discharges. For purposes of floodway computation, the NRCS survey data and the 1-percent-annual-chance peak discharges were put into the HEC-2 computer program (Reference 140) and calibrated to the NRCS 1-percent-annual-chance profile.

Floodwaters on Cady Brook from upstream of Randolph Street to its confluence with the Quinebaug River were found to have hazardous velocities. Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravate the risk of flood damage, and heightens potential flood hazards by further increasing velocities. To provide guidance for encroachment into these areas, a proposed floodway is delineated for that part of the 1-percent-annual-chance floodplain that conveys flow.

The Town of Spencer 1990 FIS revision involved the use of topographic data other than that used in the original study, without the recomputation of the floodway. The topography used in the latest revision resulted in the redelineation of the 1-percent-annual-chance floodplain boundary so that it encroached within the floodway in some locations. Because the floodway was not recomputed, most of the information normally presented in the Floodway Data Table (Table 12) is not available for this partial countywide FIS.

Portions of the floodway width on the Mill River in the Town of Upton extend beyond the corporate limits into the Town of Hopkinton, MA (Middlesex County).

For purposes of floodway computations on Denny and Piccadilly Brooks in the Town of Westborough, the NCRS survey data and 1-percent-annual-chance peak discharges were input to the HEC-2 model and the model was calibrated to the NRCS 1-percent-annual-chance profile. The NCRS has determined that Cedar Swamp is a valuable natural flood storage area for the Sudbury River basin (Reference 59). No additional impoundment sites are available on the Sudbury River which could feasibly provide the flood storage equal to the present capacity of Cedar Swamp. The loss of present floodwater storage capacity and increase of urbanization in the study area would directly increase flood damage and danger downstream. Thus, Cedar Swamp and the floodplains of the Upper Sudbury River study area are an integral part of the flood-control plan for the SuAsCo Watershed (Reference 59).

Concord River Watershed Partial Countywide Analysis

The floodway presented in this study was computed on the basis of equal conveyance reduction from each side of the floodplain using the HEC-RAS model version 4.1. Floodways were computed on the new detailed portions of the Assabet River, Denny Brook (downstream of South Street), Elizabeth Brook, Jackstraw Brook (downstream of Warren Street), Rutters Brook, Sullivan Brook, and Sudbury River.

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs) or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by detailed methods. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to areas of 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2-percent-annual-chance floodplain, areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile (sq. mi.), and areas protected from the base flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths. Insurance agents use zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent-annual-chance floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

This partial countywide FIRM presents flooding information for parts of the geographic area of Worcester County, as outlined in Section 1. Previously, FIRMs were prepared for each incorporated community identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 13, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
*Ashburnham, Town of	July 19, 1974	September 17, 1976	June 15, 1984	None
*Athol, Town of	March 8, 1974	July 23, 1976	July 19, 1982	None
Auburn, Town of	August 16, 1974	December 10, 1976	June 1, 1978	June 3, 1991
*Barre, Town of	May 17, 1974	December 27, 1977	June 15, 1982	None
Berlin, Town of	October 18, 1974	January 21, 1977	June 18, 1980	None
Blackstone, Town of	July 26, 1974	None	September 30, 1977	None
Bolton, Town of	June 28, 1974	None	June 18, 1980	None
Boylston, Town of	August 23, 1974	October 15, 1976	July 2, 1981	July 3, 1985
*Brookfield, Town of	May 3, 1974	December 10, 1976	July 2, 1981	None
Charlton, Town of	July 26, 1974	November 19, 1976	July 19, 1982	None
Clinton, Town of	August 9, 1974	August 6, 1976	June 15, 1982	None
Douglas, Town of	June 7, 1974	October 22, 1976	June 1, 1982	None
Dudley, Town of	April 5, 1974	July 30, 1976	June 15, 1982	None
*East Brookfield, Town of	June 7, 1974	June 11, 1976	June 15, 1981	None

*Community is not included in this partial countywide Flood Insurance Study and will retain its existing, separately published FIS and/or FIRM

TABLE 13

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
ALL JURISDICTIONS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
*Fitchburg, City of	April 5, 1974	October 3, 1975	May 16, 1983	January 18, 1989 September 18, 1991
*Gardner, City of	September 6, 1974	March 12, 1976	July 2, 1981	None
Grafton, Town of	April 5, 1974	October 15, 1976 March 14, 1980	May 2, 1983	September 30, 1992
*Hardwick, Town of	June 28, 1974	October 29, 1976	September 16, 1981	None
Harvard, Town of	August 2, 1974	October 29, 1976	June 15, 1983	None
*Holdon, Town of	September 6, 1974	April 8, 1977	July 2, 1981	None
Hopedale, Town of	July 26, 1974	October 15, 1976	July 19, 1982	None
*Hubbardston, Town of	September 6, 1974	December 24, 1976	June 1, 1984	None
Lancaster, Town of	February 22, 1974	July 23, 1976	July 5, 1982	None
Leicester, Town of	July 19, 1974	September 3, 1976 June 14, 1977	July 5, 1982	None
*Leominster, City of	March 22, 1974	October 17, 1975	September 16, 1982	April 3, 1989
*Lunenburg, Town of	September 6, 1974	December 10, 1976	June 15, 1982	None
Mendon, Town of	September 6, 1974	November 19, 1976	July 19, 1982	None
Milford, Town of	July 26, 1974	December 17, 1976	July 5, 1984	None

*Community is not included in this partial countywide Flood Insurance Study and will retain its existing, separately published FIS and/or FIRM

TABLE 13

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
ALL JURISDICTIONS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Millbury, Town of	February 22, 1974	None	July 2, 1979	January 7, 2000
Millville, Town of	June 28, 1974	October 15, 1976	July 19, 1982	None
*New Braintree, Town of	September 20, 1974	August 20, 1976	June 15, 1984	None
*North Brookfield, Town of	June 21, 1974	September 10, 1976	July 5, 1982	None
Northborough, Town of	November 29, 1974	None	November 15, 1979	None
Northbridge, Town of	July 26, 1974	October 15, 1976	June 15, 1983	February 2, 2002
*Oakham, Town of	August 2, 1974	August 20, 1976	April 3, 1984	None
Oxford, Town of	June 28, 1974	November 5, 1976	January 20, 1982	None
Paxton, Town of	July 26, 1974	None	February 18, 1981	None
*Petersham, Town of	September 13, 1974	None	January 23, 1979	March 25, 1977
*Phillipston, Town of	August 9, 1974	October 22, 1976	July 16, 1984	None
*Princeton, Town of	August 30, 1974	December 17, 1976	July 2, 1981	None
*Royalston, Town of	May 17, 1974	August 20, 1976	June 15, 1983	None
*Rutland, Town of	December 6, 1974	July 30, 1976	July 16, 1984	None

*Community is not included in this partial countywide Flood Insurance Study and will retain its existing, separately published FIS and/or FIRM

TABLE 13

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
ALL JURISDICTIONS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Shrewsbury, Town of	September 6, 1974	November 5, 1976	June 4, 1980	None
Southborough, Town of	August 2, 1974	August 27, 1976	October 15, 1981	None
Southbridge, Town of	March 22, 1974	October 29, 1976	March 15, 1982	None
Spencer, Town of	September 13, 1974	October 22, 1976	July 2, 1981	September 14, 1990
*Sterling, Town of	July 19, 1974	December 17, 1976	June 15, 1982	None
Sturbridge, Town of	September 13, 1974	March 4, 1977	July 19, 1982	None
Sutton, Town of	August 9, 1974	March 25, 1977	June 1, 1982	None
*Templeton, Town of	August 2, 1974	September 10, 1976	May 17, 1982	None
Upton, Town of	August 16, 1974	January 21, 1977	August 2, 1982	None
Uxbridge, Town of	August 2, 1974	October 29, 1976	June 1, 1983	None
*Warren, Town of	May 17, 1974	August 27, 1976	December 1, 1981	None
Webster, Town of	July 19, 1974	March 4, 1977	July 5, 1982	June 16, 1993
West Boylston, Town of	July 26, 1974	April 8, 1977	July 2, 1981	August 2, 1990

*Community is not included in this partial countywide Flood Insurance Study and will retain its existing, separately published FIS and/or FIRM

TABLE 13

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
ALL JURISDICTIONS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
*West Brookfield, Town of	July 26, 1974	October 1, 1976	June 1, 1982	None
Westborough, Town of	March 8, 1974	November 5, 1976	May 15, 1980	None
*Westminster, Town of	July 26, 1974	August 13, 1976	July 19, 1982	None
*Winchendon, Town of	August 23, 1974	September 10, 1976	June 15, 1982	None
Worcester, City of	August 2, 1974	None	August 15, 1980	January 16, 2003

*Community is not included in this partial countywide Flood Insurance Study and will retain its existing, separately published FIS and/or FIRM

TABLE 13

FEDERAL EMERGENCY MANAGEMENT AGENCY

WORCESTER COUNTY, MA
ALL JURISDICTIONS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction included in this partial countywide Worcester County FIS has been compiled in this FIS. Therefore, this FIS supersedes all previously printed FIS reports, FIRMs, and/or FHBMs for all of the incorporated jurisdictions within Worcester County listed in Section 1 and should be considered authoritative for the purposes of the NFIP.

FISs have been prepared or are in the process of being prepared for the adjacent counties of Middlesex and Norfolk, Massachusetts, and are in agreement with this FIS. These include reports prepared by Androscoggin County, Maine: Towns of Leeds and Livermore Falls; Lincoln County, Maine: Towns of Somerville, Jefferson, and Dresden; Sagadahoc County, Maine: Town of Bowdoin; Somerset County, Maine: Towns of Mercer, Fairfield, and Pittsfield; and Waldo County, Maine: Town of Burnham (msc.fema.gov).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting FEMA Region I, 99 High Street, 6th Floor, Boston, MA 02110.

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