

**NOTES TO USERS**

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Elevation Data tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic computations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Massachusetts State Plane Meters Zone (FIPS zone 2001). The horizontal datum was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NSIS Information Services  
 NOAA, NNGS12  
 National Geodetic Survey  
 SSMC-3, #9202  
 1315 East-West Highway  
 Silver Spring, Maryland 20910-3282  
 (301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

**Base map** information shown on this FIRM was derived from orthophotography provided by MassGIS at a scale of 1:500 from photography dated April 2008.

The **profile baselines** depicted on this map represent the hydraulic modeling channels that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

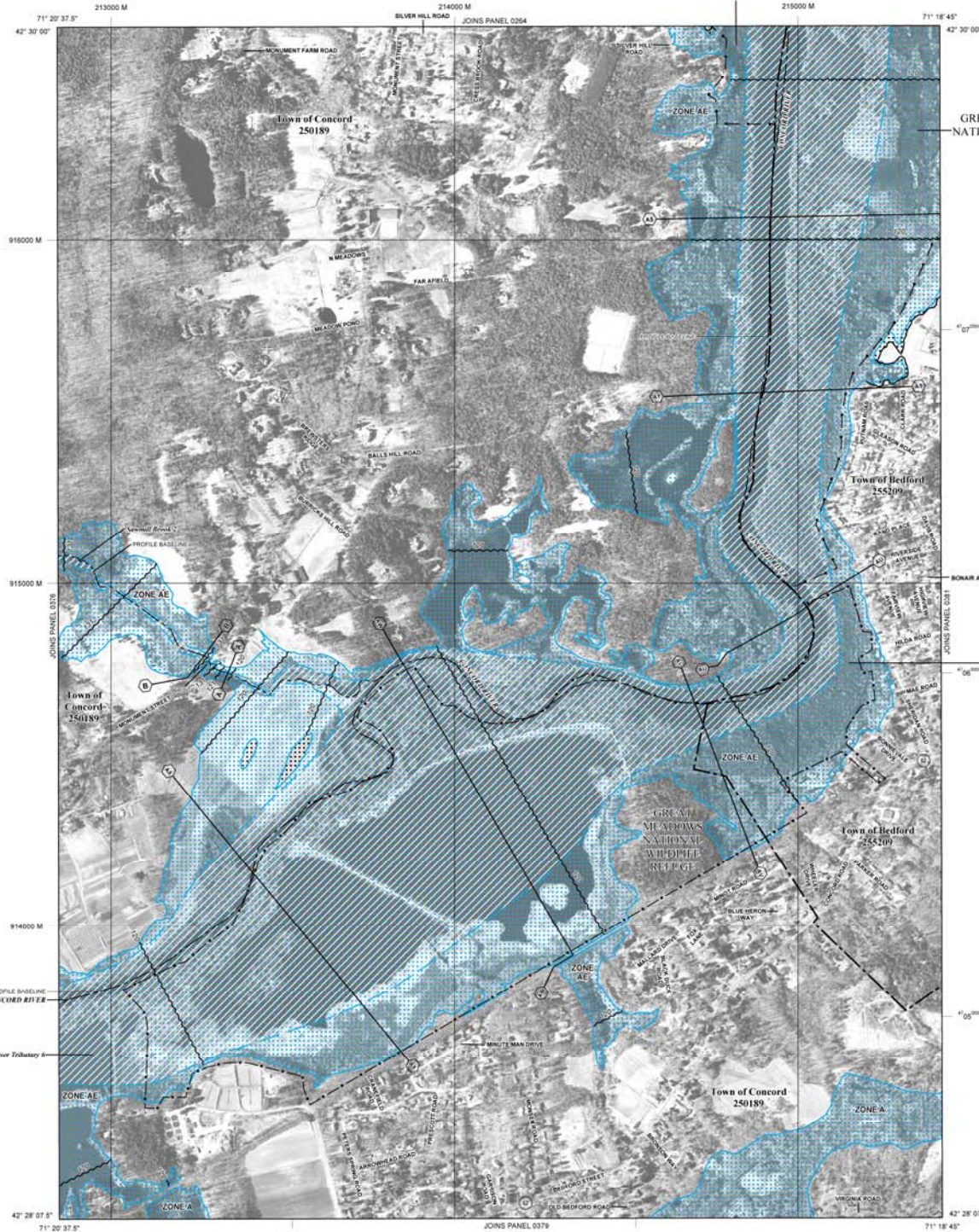
**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information Exchange (PMX)** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/info>.

**GREAT MEADOWS NATIONAL WILDLIFE REFUGE**



**LEGEND**

**SPECIAL FLOOD HAZARD AREAS (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**  
 The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, AR, AV, and V. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

**ZONE A** No Base Flood Elevations determined.  
**ZONE AE** Base Flood Elevations determined.  
**ZONE AH** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); Base Flood Elevations determined.  
**ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined; no areas of elevated flow flooding; velocities also determined.  
**ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently removed. Zone boundaries are the 1% annual chance flood system in being removed to provide protection from the 1% annual chance flood (see notes on Base Flood Elevations determined).  
**ZONE AV** Area to be protected from the 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.  
**ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.  
**ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

**FLOODWAY AREAS IN ZONE AE**

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

**OTHER FLOOD AREAS**

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from the 1% annual chance flood.  
**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.  
**ZONE D** Areas in which flood hazards are undetermined, but possible.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**

**OTHERWISE PROTECTED AREAS (OPA)**

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary  
 0.2% Annual Chance Floodplain Boundary  
 Floodway boundary  
 Zone D boundary  
 CBRS and OPA boundary  
 Boundary of Special Flood Hazard Area Zones and boundary of Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.  
 Base Flood Elevation line and value; elevation in feet  
 Base Flood Elevation value where uniform within zone; elevation in feet

Referenced to the North American Vertical Datum of 1988.

⊕ ⊖ Cross section line  
 --- Transect line  
 45° 02' 00" 80° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere  
 4880000 M 1000 meter ticks; Massachusetts State Plane Meters Zone (FIPS Zone 2001); Lambert Conformal Conic projection  
 028510 M 1000 meter Universal Transverse Mercator grid values, Zone 19  
 \* 481510 X Bench mark (see explanation in Notes to Users section of this FIRM report)  
 \* 481510 MAP REPOSITORIES  
 Refer to Map Repository list on Map Index

EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP  
 June 4, 2010

EFFECTIVE DATES OF REVISIONS TO THIS PANEL  
 July 7, 2014 - To update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to add roads and road names, and to incorporate previously issued Letters of Map Change.

For community map revision history prior to countywide mapping refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-424-6252.

**NFP NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0377F**

**FIRM FLOOD INSURANCE RATE MAP MIDDLESEX COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)**

**PANEL 377 OF 656**  
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	EFFECTIVE DATE
BEDFORD, TOWN OF	255209	0377 F	4
CONCORD, TOWN OF	250189	0377 F	4

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

**MAP NUMBER 25017C0377F**  
**MAP REVISED JULY 7, 2014**

Federal Emergency Management Agency