



# Federal Emergency Management Agency

Washington, D.C. 20472

MEMORANDUM FOR: Regional Directors  
FEMA Regions I-X

FROM: Michael F. Howard, Chief  
Risk Identification Branch

SUBJECT: Procedure Memorandum No. 36—Profile Baselines on  
Digital Flood Insurance Rate Maps (DFIRMs) with  
Orthophoto Bases

**Background:** Since *Guidelines and Specifications for Flood Hazard Mapping Partners (Guidelines)* was last updated, several studies performed by Indefinite Delivery Indefinite Quantity Contractors (IDIQs) and Cooperating Technical Partners (CTPs) were brought to the attention of the Engineering and Mapping Integrated Program Team (IPT) as being processed without a streamline or profile baseline when orthophotos were used as the base. During the independent quality assurance reviews for these studies, it became apparent that it is necessary to at least show a profile baseline (that matches the streamlines shown on the effective FIRM) on all DFIRMs. The April 2003 version of the *Guidelines* does not specify that streamlines or profile baselines are required on DFIRMs that are developed using orthophoto bases; rather, the *Guidelines* states that the streamlines or profile baselines are optional, as indicated below.

- Appendix C, Subsection C.6.1.5 (Page C-37) of the *Guidelines*, entitled “Effective Floodplain Boundaries Adjusted to New Streamlines,” states the following:

The process of fitting unrevised floodplain boundaries to new streamlines likely will result in changes in stream channel distances from the unrevised hydraulic model to the new FIRM. These changes shall be addressed by placing a note in the FIRM legend on a case-by-case basis.... (See Appendix K of these *Guidelines* for examples of this note.)

- Appendix K, Subsection K.4.1.1 (Page K-43) of the *Guidelines*, entitled “Base Map Types,” states the following: “The assigned Mapping Partner may show vectors that depict studied flooding sources on top of the orthophotos to clarify their locations.”

- For Table S\_Profil\_Baseln, Appendix L of the *Guidelines*, entitled “Guidance for Preparing Draft Digital Data and DFIRM Database,” states the following on Page L-113:  
This table is required for a detailed study when hydrologic and hydraulic models have been developed for reaches of streams. The results of the models are shown on the FIRM. The profile baseline and/or stream centerline may or may not be shown on the FIRM.
- For Table S\_Wtr\_Ln, Appendix L of the *Guidelines*, entitled “Guidance for Preparing Draft Digital Data and DFIRM Database,” states the following on Page L-347: “Vector streams must always be shown with a vector base map. They may also be shown on raster base maps.”

**Issue:**

Streamlines and profile baselines are linked to the hydraulic models developed for detailed-study reaches. Without these links, the relationship between the DFIRM, the Flood Profiles, and the Floodway Data Table will no longer exist. This will impact the affected communities’ ability to use the DFIRM, Flood Profiles, and Floodway Data Table for accurate floodplain management and provide property owners accurate information. Therefore, developing a Base Flood Elevation (BFE) that is accurate and usable for processing Conditional Letters of Map Amendment; Conditional Letters of Map Revision Based on Fill, Letters of Map Amendment; and Letters of Map Revision Based on Fill will be very difficult, if not impossible. Likewise, it will be very difficult, if not impossible, to determine whether revised BFEs for Conditional Letters of Map Revision and Letters of Map Revision Based on Fill will cause BFEs at the upstream and downstream ends of the revised reach within the maximum allowable tolerance of 0.5 foot, and to determine whether increases over 1.0 foot between BFEs and the regulatory floodway elevations occur.

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**Action Taken/Revised Procedure:**

This memorandum revises several sections of the April 2003 version of the *Guidelines* and sets forth a requirement that a profile baseline (Profil\_Baseln) that matches the streamline/profile baseline used in the effective or new study must be shown on all DFIRMs. The profile baseline can be included in the S\_Wtr\_Ln table as a line with a WATER\_TYP of PROFILE BASELINE, or can be added to the S\_Profil\_Basln table.

All mapping partners, including IDIQs and CTPs, that are tasked with issuing the Preliminary DFIRMs are to produce Preliminary DFIRMs that meet FEMA specifications, including the changes described in this memorandum. If the IDIQs or CTPs cannot meet these specifications, FEMA Regional Office staff should establish a clear plan for how the affected DFIRMs will be brought into compliance with FEMA specifications before the DFIRMs become effective and how that work will be funded. The FEMA Regional Office staff should coordinate the plan with the respective Project Engineer from the Hazard Identification Section at FEMA Headquarters as soon as any temporary deviations from the specifications are identified.

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