

401 KAR 4:060. Stream construction criteria.

RELATES TO: KRS 151.100, 151.110, 151.182, 151.184, 151.186, 151.210, 151.250, 151.260, 151.280, 151.310, 44 C.F.R. Part 60, 64.3

STATUTORY AUTHORITY: KRS 151.125, 151.230

NECESSITY, FUNCTION, AND CONFORMITY: KRS 151.125 requires the secretary to establish requirements for flood control and water resources. KRS 151.230 authorizes the cabinet to establish minimum standards for floodplain management. This administrative regulation establishes standards for construction in floodplain areas.

Section 1. Definitions.

- (1) "Areas of shallow flooding" means a designated flood zone, shown on a FEMA Flood Insurance Rate Map, with a one (1) percent or greater annual chance of flooding to an average depth of one (1) to three (3) feet where clearly-defined channel does not exist, where the path of flooding is unpredictable, where velocity flow may be evident, and is characterized by ponding or sheet flow.
- (2) "Backwater effect" means the rise in water surface elevation caused by obstruction of a stream's flow, such as by a narrow bridge opening, buildings or fill material that limits the area through which the stream's flow must pass.
- (3) "Base flood" means the flood having a one (1) percent chance of being equaled or exceeded in any given year, also called the 100-year frequency flood.
- (4) "Base floodplain" means the area along, adjacent to, and including a stream, which is inundated by the base flood on that stream.
- (5) "Base flood elevation" or "BFE" means the elevation of the water surface measured above mean sea level, as defined on the applicable FEMA Flood Insurance Rate Map (FIRM) in either the NGVD 1929 or NAVD 1988 vertical datum, reached during the base flood.
- (6) "Basement" means any area of the building having its floor below ground level on all sides.
- (7) "Conveyance" means a measure of the flow-carrying capability of a stream cross section and is equal to the flow rate at a given depth in cubic feet per second divided by the square root of the slope of the energy grade line in feet per foot.
- (8) "Cross section" means a graph or plot of ground elevation across a stream valley or portion of it along a line perpendicular to the direction of stream flow.
- (9) "Designated floodway" means the stream and that portion of the adjacent base floodplain specified by a local ordinance or indicated on National Flood Insurance Program maps.
- (10) "Dry flood proofing" means modifying a structure so that it is watertight below the flood protection elevation so that floodwaters cannot enter.
- (11) "Energy grade line" means a line that represents the elevation of the total energy head of water flowing in a pipe, conduit, or channel.
- (12) "Existing construction" means any structure, manufactured home park, or subdivision constructed on or before the effective date of the FEMA Flood Insurance Rate Map (FIRM) or the Flood Hazard Boundary Map (FHBM) for the community where the proposed structure is located, or in cases where no FIRMs are available, on or before October 1987.
- (13) "Flood crest" means the maximum stage or elevation reached or expected to be reached by waters of a specific flood at a given location.
- (14) "Flood frequency" means a statistical expression of the average time period between floods equaling or exceeding a given magnitude.
- (15) "Flood Boundary and Floodway Map" or "FBFM" means a map on which the Federal Emergency Management Agency (FEMA) or Federal Insurance Administration

(FIA) has delineated the areas of flood hazards and the regulatory floodway, pursuant to 44 C.F.R. Part 60 and 64.3.

(16) "Flood Hazard Boundary Map" or "FHBM" means an official map of a community issued by FEMA, pursuant to 44 C.F.R. Part 60 and 64.3, where the boundaries of the areas of special flood hazard have been identified as Zone A.

(17) "Flood Insurance Rate Map" or "FIRM" means an official map of a community on which FEMA, pursuant to 44 C.F.R. Part 60 and 64.3, has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

(18) "Flood Insurance Study" or "FIS" is the official hydraulic and hydrological report by FEMA, pursuant to 44 C.F.R. Part 60 and 64.3, containing flood profiles, the FIRM, FHBM, where applicable, and the water surface elevation of the base flood.

(19) "Flood proofing" means structural changes or adjustments to new or existing structures and facilities, their contents, or their sites for the purpose of reducing or eliminating flood damages by protecting against structural failure, keeping water out, or reducing the effect of water entry, and includes dry flood proofing and wet flood proofing.

(20) "Flood warning" means the issuance and dissemination of information about an imminent or current flood.

(21) "Historic structure" means any structure that is:

(a) Listed individually in the National Register of Historic Places or preliminarily determined by the Secretary of the Interior as meeting the requirements for listing;

(b) Certified or preliminarily determined as contributing to the historical significance of a registered historic district;

(c) Listed on the state inventory of historic places; or

(d) Listed on a local inventory of historic places in communities with historic preservation programs approved by the state or the Secretary of the Interior.

(22) "Letters of Map Change" or "LOMC" means an official FEMA determination by letter to amend or revise effective Flood Insurance Rate Maps, Flood Boundary and Floodway Maps, and Flood Insurance Studies.

(23) "Licensed engineer or land surveyor" means a professional engineer or surveyor with accreditation in the state of Kentucky.

(24) "Lowest floor" means the lowest floor of the lowest enclosed area, including any basement, but does not include an unfinished or flood resistant enclosure usable solely for parking of vehicles, building access, or storage of mobile equipment or of property that is not flood damageable in an area other than a basement.

(25) "Manufactured home" means a structure, transportable in one (1) or more sections, that is built on a permanent chassis and designed for use with or without a permanent foundation when connected to utilities, but does not include recreational vehicles placed on a site for less than 180 consecutive days.

(26) "National Flood Insurance Program", or "NFIP", means a federal program which makes available flood insurance protection to property owners in flood prone areas.

(27) "No impact" means a certification by a licensed engineer that an encroachment shall not result in any increase in the base flood elevation, floodwater elevations, and floodway width during the occurrence of the base flood discharge, referred to as "No Impact Certification".

(28) "NAVD 1988" means a vertical control, as corrected in 1988, used as a reference for establishing varying elevations within the floodplain.

(29) "NGVD 1929" means a vertical control, as corrected in 1929, used as a reference for establishing varying elevations within the floodplain.

(30) "Nonsubstantial improvement" means any combination of repairs, reconstruction, alteration, or improvement to a structure in which the cumulative cost does not exceed fifty (50) percent of the present market value of the structure.

- (31) "100-year flood" means a flood of a magnitude having a one (1) percent chance of occurring in any given year.
- (32) "Permit" means written approval for any construction across, along, or adjacent to a stream subject to the provisions of KRS 151.250.
- (33) "Profile" means a graph or elevation plot of the water surface or channel bottom against distance along the stream.
- (34) "Recreational vehicle" means a vehicle that is:
- (a) Built on a single chassis;
 - (b) 400 square feet or less when measured at the largest horizontal projection;
 - (c) Designed to be self propelled or permanently towable by a light duty truck; and
 - (d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.
- (35) "Regulatory floodway" means the stream channel and that portion of adjacent land area that is required to pass flood flows without raising the base flood crest elevation by more than one (1) foot.
- (36) "Stream" is defined in KRS 151.100(3).
- (37) "Structure" means an object constructed or installed which may be an obstruction to flood flows such as buildings, manufactured homes, towers, smokestacks, and overhead transmission lines.
- (38) "Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to before-damaged conditions would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.
- (39) "Substantial improvement" means any combination of repairs, reconstruction, alteration, or improvements to a structure, taking place during a one (1) year period, in which the cumulative cost equals or exceeds fifty (50) percent of the market value of the structure, excluding periodic maintenance and upkeep that does not increase the value of the structure.
- (40) "Wet flood proofing" means modifying the uninhabited portions of a house, such as a crawlspace so that floodwaters may get in but will not cause significant damage.

Section 2. Applicability. This administrative regulation shall apply to all construction across, along, or adjacent to a stream (i.e., the base floodplain) or in the floodway of a stream for which a construction permit is required pursuant to KRS 151.250, 44 C.F.R. Part 60, and 44 C.F.R. 64.3, except for the construction of dams as defined in KRS 151.100.

Section 3. General Provisions.

- (1) This administrative regulation shall constitute minimum criteria for the issuance of permits for stream construction pursuant to KRS 151.250, 44 C.F.R. Part 60, and 44 C.F.R. 64.3.
- (2) The applicant shall properly complete an appropriate application form, incorporated by reference in Section 9 of this administrative regulation, with all pertinent information and submit it to the cabinet.
- (3) Any construction limits specified in the permit shall be plainly staked or otherwise marked on the site.
- (4) Public notification.
- (a) As part of the stream construction permit issuance procedure, each applicant shall provide notice to all parties who may incur additional flood-related damages as a result of the construction for which a permit has been requested, except as provided in subparagraph 3 of this paragraph.
 - 1. For those projects that may have flooding impacts beyond the local area of the construction, the applicant shall publish a notice in the newspaper having greatest circulation in the area of the proposed construction.
 - a. This notice shall provide:

- (i) The name and address of the applicant;
 - (ii) The location, nature, and extent of the proposed construction; and
 - (iii) The address and telephone number of the Division of Water and stating the comments and objections shall be directed to the division.
 - b. The notice shall be run for period of three (3) consecutive days or printings of the newspaper; however, for weekly newspapers or areas where newspapers are printed less frequently, the cabinet may reduce this requirement to two (2) consecutive printings upon written request of the applicant.
 - c. The public notice required in subparagraph 1 of this paragraph shall be at least three (3) column inches in size and shall be large enough that all of the information required in subparagraph 1 of this paragraph is easily readable.
2. If the cabinet determines that flood impacts will be localized, the applicant may obtain and submit affidavits from all parties who reside, own property, or have other legitimate property interests in the affected areas. This affidavit shall contain a complete description of the proposed construction, a place for concerned parties to sign indicating that they have read the statement and that they understand that a permit application is being submitted to the cabinet, and the name and address of the cabinet representative to whom statements of concern or request for hearing may be addressed.
3. For construction projects that will have negligible flood impacts (e.g. placement of electrical utility power poles or transmission towers if no fill is included or minor stream-bank restoration), the cabinet may waive the public notification requirement after receipt of a written request from the applicant to do so.
4. The cabinet shall notify all persons filing comments or objections to the issuance of any permit of their right to be heard pursuant to the provisions of KRS 151.182(2).
- (b) Proof that the notice was published or the original of the completed affidavit shall be provided to the cabinet before the application shall be considered complete; however, technical review of the application by the cabinet may proceed before proof is provided. Issuance of the permit shall not proceed until sufficient proof of notice is submitted.
- (c) If the cabinet determines any of the conditions of paragraph (a) of this subsection are not met by the initial notice or affidavit, it may require that the applicant place another notice or provide another affidavit which does so. The application shall not be considered complete until the applicable public notification provisions of this subsection are satisfied.
- (5) The permit shall become effective on the date of issuance and shall remain valid for a period of one (1) year. Extensions may be requested in writing on a year-by-year basis and shall be granted if:
- (a) The scope of work and ownership has not changed; and
 - (b) There is no change in BFE or regulatory floodway.
- (6) The permittee shall provide the cabinet with written notification that construction was completed in accordance with approved plans and specifications not later than ninety (90) days after completion of construction. If any of the provisions of the permit are not met, the cabinet may revoke the permit pursuant to KRS 151.125.
- (7) If any watercourse, channel relocation, or realignment, and any encroachment that causes a change in base flood elevations takes place, all supporting technical data shall be submitted to FEMA in order to obtain the appropriate Letter of Map Change (LOMC) to officially amend the FIRM in a given community.
- (8) Any substantial improvement that increases the current market value of the structure by more than fifty (50) percent shall be considered as new construction. The market value of the structure shall be:

- (a) The appraised fair market value of the structure prior to the start of the initial repair or improvement; or
 - (b) If damage has occurred, the fair market value of the structure prior to the damage.
- (9) Substantial improvement shall be considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not; however, include any project for substantial or nonsubstantial improvement of a structure required to comply with existing health, sanitary, or safety code specifications which are solely necessary to ensure safe living conditions.

Section 4. Uses of Regulatory Floodway.

- (1) Except as provided in subsection 2 of this section, all encroachments, including fill, new construction, substantial improvements, and other development is prohibited unless certification with supporting technical data by a licensed engineer is provided, that demonstrates that the encroachments shall have "no impact" or not result in any increase in flood levels during occurrence of the base flood discharge.
- (2) The following activities or structures shall be permitted for land within the regulatory floodway limits of a stream if they do not result in increases in flood elevations:
- (a) Open space uses having no appreciable flood damage potential such as those associated with agriculture, silviculture, recreation, parking, storage yards, and certain sand and gravel operation;
 - (b) Certain structures, such as aerial utility crossings, that are related to allowable open space uses if the structures are designed, constructed and placed on the lot so as to offer no obstruction to flood flows;
 - (c) Structures necessary for navigation and waterborne freight handling, for transportation or utility crossings, if every effort has been made to reduce the impact of all of those facilities on flooding and if the facilities considered alone or in conjunction with permissible development above and below it and on the opposite side of the stream do not create an increase in flood elevations in excess of that which is appropriate for determination of the floodway boundaries at that site pursuant to Section 5 of this administrative regulation;
 - (d) Dredging or other removal of material from between the stream banks and the regulatory floodway, if disposal of the dredged material is outside of the regulatory floodway;
 - (e) Recreational vehicles may be permitted in the regulatory floodway for a period of no more than 180 days if the vehicle is placed so that it can be moved easily in case of imminent flooding; and
 - (f) Other activities exempted by 401 KAR 4:020 and 4:050.

Section 5. Determining Regulatory Floodway Boundaries.

- (1) The regulatory floodway boundaries shall include the stream channel and that portion of the adjacent land areas required to pass the base flood discharge without increasing the water surface elevation at any point more than one (1) foot. If the stream flow is supercritical, or if velocity is so high that backwater considerations are not possible or appropriate, the determination of regulatory floodway boundaries shall be based on a one (1) foot maximum allowable rise in the energy grade line. If making these calculations, the cabinet shall use methods which consider equal conveyance losses on opposite sides of the stream.
- (2) For stream segments for which a local government has used methods comparable to those specified in this section to define floodway boundaries and has adopted these boundaries by ordinance or for which the Federal Emergency Management Agency (FEMA) has developed a Flood Insurance Study (FIS), Flood Hazard Boundary Maps (FHBM), Flood Boundary and Floodway Maps (FBFM), mapped floodway boundaries

and areas of shallow flooding, the cabinet shall consider these designated floodway boundaries to define the regulatory floodway. If both locally-determined floodway boundaries and FEMA maps are available, the more stringent shall apply for purposes of this administrative regulation.

(3) Notwithstanding any other provisions of this administrative regulation, in areas containing one (1) or more houses or commercial or industrial buildings that may be affected by flooding or at other locations if the one (1) foot increase in base flood elevation (BFE) allowable in determining regulatory floodway boundaries would create an undue increase in flood damages, the cabinet may impose a more stringent limitation on the floodway determination.

(4) Base flood flow information shall be determined by one (1) of the following methods, which are listed in descending order of preference:

(a) The base flood flow frequency curve for gauged sites on unregulated streams shall be obtained from the district office of the U.S. Geological Survey or the appropriate U.S. Army Corps of Engineers district office. This data shall be used to provide the best discharge estimates for the site under consideration. Peak discharges for ungauged sites on a gauged stream may consider both the gauged site information and information from an appropriate regional estimate, if available. The transfer technique for establishing discharges at the ungauged location shall be by interpolation or extrapolation methods in keeping with best engineering practices. For gauged streams with regulated flows, peak discharges shall be obtained from the agency responsible for regulating the flow.

(b) For ungauged streams one (1) of the following shall be used:

1. "Estimating the Magnitude of Peak Flows for Streams in Kentucky for Selected Recurrence Intervals", U.S. Geological Survey, Water Resources Investigations Report 03-4180, incorporated by reference in Section 9 of this administrative regulation;
2. Natural Resources Conservation Service "National Engineering Handbook, Part 630: Hydrology", incorporated by reference in Section 9 of this administrative regulation; or
3. The cabinet may approve the use of other generally accepted methods in keeping with best engineering practices.

(5) For areas below dams or impounding structures, flood routings shall be determined as if the dam or impounding structure does not exist.

(6) In performing the calculations for regulatory floodway boundaries, the cabinet shall use standard engineering practices.

(a) The applicant shall provide cross sections for determining floodway boundaries at any proposed construction site if FEMA maps are not available. All cross sections shall be referenced to mean sea level, in either the NGVD 1929 or NAVD 1988 vertical datum, and shall have vertical error tolerances of no more than plus or minus five-tenths (0.5) foot. Cross sections elevations shall be taken at those points which represent significant breaks in slope and at points where hydraulic characteristics of the base floodplain change. Each cross section shall extend across the entire base floodplain and shall be in the number and at the locations specified by the cabinet. Submitted cross sections shall be in a tabular, electronic format. If necessary to ensure that significant flood damage will not occur, the cabinet may require additional cross sections or specific site elevations which extend beyond those needed for making routine regulatory floodway boundary calculations.

(b) Roughness values for use in regulatory floodway computations shall be calibrated from existing flood information, if possible. If the information is not available, the cabinet shall base these values on the professional judgment of the cabinet's staff in

keeping with best engineering practices. The cabinet may require the applicant to provide photographs or other information if it is helpful in making this determination.

(c) Slope values used for regulatory floodway boundary calculations shall be based on flood profiles if available.

(d) Conveyance loss shall be calculated through an equal loss method.

Section 6. Placement of Flood-damageable Property in Floodplain.

(1) In order to minimize or prevent the harmful effects of stream flooding, the cabinet shall not issue permits for the placement or construction of flood-damageable property in the base floodplains of streams, unless the placement or construction conforms to the requirements of the following subsection.

(2) In issuing construction permits pursuant to KRS 151.250 for the placement of flood-damageable property within the base flood inundation area the cabinet shall require the following:

(a) All new construction and substantial improvements of residential structures within the base floodplain shall have the lowest floor (including basement) elevated to at least the base flood elevation;

(b) All new construction and substantial improvements of existing construction and nonresidential structures within the base floodplain shall meet the following conditions:

1. The lowest floor (including basement) shall be elevated to the base flood elevation or above; or

2. Together with attendant utility and sanitary facilities, shall be designed with the application of dry flood proofing techniques, so that below the base flood level the structure is properly flood proofed with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(c) New construction or substantial improvements of existing construction or elevated structures that include fully-enclosed areas formed by foundation and other exterior walls below the base flood elevation shall be designed with the application of wet flood proofing techniques to preclude finished living space and designed to allow for entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls.

1. Opening sizes for complying with this requirement shall meet the following minimum criteria:

a. Provide a minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding;

b. The bottom of all openings shall be no higher than one (1) foot above foundation interior grade, which shall be equal in elevation to or higher than the exterior foundation grade; and

c. Opening may be equipped with screens, louvers, valves, or other coverings or devices provided they permit the automatic flow of floodwaters in both directions.

2. The interior portion of the enclosed areas shall not be partitioned or finished into separate rooms.

(d) The floor elevation or the flood proofing certification shall be provided by the permittee after the lowest floor is completed. Upon placement of the lowest floor, or flood proofing by whatever construction means, the permit holder or owners shall submit to the Division of Water a certification of the elevation of the lowest floor or flood proofed elevation, using the FEMA Elevation or Floodproofing Certificate, whichever is applicable, as built, in relation to mean sea level. The document shall be prepared and certified by or under the direct supervision of a licensed land surveyor or engineer. If flood proofing is used for a particular building, the certification shall be

prepared by or under the direct supervision of a licensed engineer. Any work undertaken prior to submission of the certification shall be at the permit holder's or owner's risk. The Division of Water shall review the floor elevation survey data submitted. Deficiencies detected by the cabinet's review shall be corrected by the permit holder or owner immediately and prior to further progressive work being performed. Failure to submit the survey or failure to make the required corrections, shall be cause to issue a stop-work order for the project; and

(e) All manufactured homes, except in an existing manufactured home park or subdivision, shall be elevated to the base flood elevation and properly anchored to resist flotation, collapse, or lateral movement. If placed in an existing manufactured home park or subdivision the home shall be elevated no less than three (3) feet above grade, and properly anchored. Any manufactured home placed in an existing manufactured home park or subdivision on which a manufactured home has incurred substantial damage equal to or exceeding fifty (50) percent of its predamaged market value as a result of a flood shall be elevated to the base flood elevation and properly anchored. The expansion of an existing manufactured home park or subdivision constitutes new construction and placement in that newly developed area shall conform to both base flood elevation and anchoring requirements.

Section 7. Construction Materials. All materials used in projects shall be stable and inert, shall be free from pollutants and floatable objects, and shall meet all appropriate engineering standards applicable to the construction project.

Section 8. Variances and Exceptions.

(1) Encroachments which cause a backwater effect of more than one (1) foot may be allowed by the cabinet if:

- (a) The applicant owns the entire affected property on both sides of the stream;
- (b) The amount of backwater at the nearest upstream property line is no more than considerations in Section 5 of this administrative regulation would allow; and
- (c) The cabinet has reasonable assurances that none of the applicant's property within the area of the excessive backwater shall be subdivided and sold. Reasonable assurances shall include:

- 1. Zoning considerations that would preclude subdivision of the property;
- 2. Deed restrictions that would preclude subdivision of the property;
- 3. Restrictive floodplain construction easements identifying the Commonwealth of Kentucky as owner of the easement; or
- 4. All structures built in these areas shall have their lowest floor elevation at or above the altered elevation or be flood proofed to that elevation.

(2) The cabinet may allow regulatory floodway boundaries to be shifted by changing allocation of conveyance losses. The cabinet may redesignate the regulatory floodway boundary on one (1) side of a stream to be closer to the stream channel if a permanent flooding easement is provided for a compensating area on the opposite side. This easement shall include that area extending from the top of the opposite stream bank to whatever distance away from the stream that is required to compensate for the proposed streamward shift of the floodway boundary. The easement shall specify the Commonwealth as owner of the easement rights and shall prohibit the placement of any obstruction on the property. The easement shall be filed of record in the county where the property is located and the grantor shall provide proof to the cabinet that the easement has been recorded. If regulatory floodway boundary changes are approved by the cabinet, the applicant shall be responsible for having changes made to the appropriate FEMA boundary maps.

(3) If an area along a stream is incorrectly indicated within the designated floodway on the FEMA map, an applicant may submit an independent hydraulic analysis performed

by a qualified licensed engineer that demonstrates the area is not within the designated floodway. The applicant shall be responsible for obtaining all site-specific information for the analysis including, if necessary, the information used for the initial FEMA study. The cabinet shall review the analysis and, if the mapped information is incorrect, it may issue a permit based on the revised information. The cabinet's permit shall reflect the boundaries determined by the corrected analysis. The applicant shall be responsible for submitting the revised information to FEMA. After review, FEMA may develop Letters of Map Change (LOMC) to amend or revise the affected FIRM, FBFM, or FIS. LOMCs include the following categories:

- (a) A Conditional Letter of Map Amendment (CLOMA), which is FEMA's comment on whether a proposed project would be excluded from the Special Flood Hazard Area (SFHA) shown on the effective National Flood Insurance Program (NFIP) map.
 - (b) A Conditional Letter of Map Revision (CLOMR), which is FEMA'S comment on a proposed project that would affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway or effective Base Flood Elevations.
 - (c) A Conditional Letter of Map Revision based on Fill (CLOMR-F), which is FEMA'S comment on whether a proposed project involving the placement of fill would exclude an area from the SFHA shown on the NFIP map.
 - (d) A Letter of Map Amendment (LOMA), which is an official amendment, by letter, to an effective NFIP map. A LOMA establishes a property's location in relation to the SFHA.
 - (e) A Letter of Map Revision (LOMR), which is an official revision, by letter, to an effective NFIP map.
 - (f) A Letter of Map Revision based on Fill (LOMR-F), which is an official revision, by letter, to an effective NFIP map.
- (4) Exceptions to Section 6 of this administrative regulation may be allowed for the reconstruction, rehabilitation, or restoration of historic structures if the proposed repair, rehabilitation, or restoration will not preclude the structure's continued designation as a historic structure and the exception is the minimum necessary to preserve historic character and design of the structure.
- (5) Exceptions may be allowed for the requirement of a hydraulic or hydrologic study for the replacement or reconstruction of county or city bridges, if:
- (a) The new bridge, as designed, will be capable of passing as much or more flow at the base flood level; and
 - (b) There are no significant changes in the elevation and grades of the existing approaches and roadway which may be within the base floodplain.
- (6) Exceptions may be allowed for the requirement of a hydraulic study for a new clear span bridge, if the deck abutments are recessed within the stream banks with no approach fill and if the chord depths, including curbs, are no greater than eighteen (18) inches.
- (7) Exceptions may be allowed for the requirement of a hydraulic study for low water crossings, if the structure is constructed in accordance with the cabinet's standard low water crossing template found in document DOW 84-01, incorporated by reference in Section 9 of this administrative regulation.

Section 9. Incorporation by Reference.

- (1) The following material is incorporated by reference:
 - (a) "Estimating the Magnitude of Peak Flows for Streams in Kentucky for Selected Recurrence Intervals, U.S. Geological Survey, Water Resources Investigations Report 03-4180, 2003",
 - (b) "National Engineering Handbook, Part 630: Hydrology, Natural Resources Conservation Service, July 2001";

- (c) "Kentucky Model Flood Damage Prevention Ordinance, 2004";
 - (d) "Kentucky Division of Water Policy Document DOW 84-01, 5/18/1984"; and
 - (e) "Application for Permit to Construct Across or Along a Stream and/or Water Quality Certification, DOW 7116, January 2004".
- (2) This material may be inspected, copied, or obtained, subject to applicable copyright law, at the Kentucky Division of Water, 300 Sower Boulevard, Frankfort, Kentucky 40601, Monday through Friday, 8 a.m. to 4:30 p.m.
- (14 Ky.R. 316; 556; eff. 10-2-1987; 20 Ky.R. 3005; eff. 7-7-1994; 33 Ky.R. 1122; 2283; eff. 3-9-2007; TAm eff. 11-25-2008; TAm eff. 7-8-2016; Crt eff. 8-9-2018.)