



## Division of Water Resources

### Ohio Dam Safety Laws

Listed herein are Ohio Dam Safety Laws as contained in portions of Title XV, Chapter 1521. Of the Ohio Revised Code, requiring the ODNR, Division of Water Resources to issue permits for construction of dams and levees, and to make periodic inspections of existing dams and levees in the interest of protecting life, health, and property. Please note that existing Division of Water Resources Administrative Rules contained in Chapter 1501:21 of the Ohio Administrative Code remain in effect. The dam safety sections of Ohio law are as follows:

- Section 1521.06. Construction Permits for Dams and levees
- Section 1521.061. Surety Bond Requirements of Construction Permits.
- Section 1521.062. Periodic Inspection of Existing Dams and Levees.
- Section 1521.063 Annual Fees for Dams; actions against violators.
- Section 1521.064. Inspection Exemptions.
- Section 1521.07. Right of Entry.
- Section 1521.99. Penalties.

**Section 1521.06. Construction permits for dams or levees.** (A) No dam may be constructed for the purpose of storing, conserving, or retarding water, or for any other purpose, nor shall any levee be constructed for the purpose of diverting or retaining flood water, unless the person or governmental agency desiring the construction has a construction permit for the dam or levee issued by the chief of the division of water resources.

A construction permit is not required under this section for:

- (1) A dam that is or will be less than ten feet in height and that has or will have a storage capacity of not more than fifty acre-feet at the elevation of the top of the dam, as determined by the chief. For the purposes of this section, the height of a dam shall be measured from the natural stream bed or lowest ground elevation at the downstream or outside limit of the dam to the elevation of the top of the dam.
- (2) A dam, regardless of height, that has or will have a storage capacity of not more than fifteen acre-feet at the elevation of the top of the dam, as determined by the chief;
- (3) A dam, regardless of storage capacity, that is or will be six feet or less in height, as determined by the chief;
- (4) A dam or levee that belongs to a class exempted by the chief;
- (5) The repair, maintenance, improvement, alteration, or removal of a dam or levee that is subject to section 1521.062 of the Revised Code, unless the construction constitutes an enlargement or reconstruction of the structure as determined by the chief;
- (6) A dam or impoundment constructed under Chapter 1513. of the Revised Code.

- (B) Before a construction permit may be issued, three copies of the plans and specifications, including a detailed cost estimate, for the proposed construction, prepared by a registered professional engineer, together with any filing fee specified by rules adopted by the chief in accordance with division (I) of this section and the bond or other security required by section 1521.061 of the Revised Code, shall be filed with the chief. The detailed estimate of the cost shall include all costs associated with the construction of the dam or levee, including supervision and inspection of the construction by a registered professional engineer.

All fees collected pursuant to this section shall be deposited in the state treasury to the credit of the dam safety fund, which is hereby created. Expenditures from the fund shall be made by the chief for the purpose of administering this section and sections 1521.061 and 1521.062 of the Revised Code.

- (C) The chief shall, within thirty days from the date of the receipt of the application, fee, and bond or other security, issue or deny a construction permit for the construction or may issue a construction permit conditioned upon the making of such changes in the plans and specifications for the construction as the chief considers advisable if the chief determines that the construction of the proposed dam or levee, in accordance with the plans and specifications filed, would endanger life, health, or property.
- (D) The chief may deny a construction permit after finding that a dam or levee built in accordance with the plans and specifications would endanger life, health, or property, because of improper or inadequate design, or for such other reasons as the chief may determine.

In the event the chief denies a permit for the construction of the dam or levee, or issues a permit conditioned upon a making of changes in the plans or specifications for the construction, the chief shall state the reasons therefor and so notify, in writing, the person or governmental agency making the application for a permit. If the permit is denied, the chief shall return the bond or other security to the person or governmental agency making application for the permit.

The decision of the chief conditioning or denying a construction permit is subject to appeal as provided in Chapter 119. of the Revised Code. A dam or levee built substantially at variance from the plans and specifications upon which a construction permit was issued is in violation of this section. The chief may at any time inspect any dam or levee, or site upon which any dam or levee is to be constructed, in order to determine whether it complies with this section.

- (E) A registered professional engineer shall inspect the construction for which the permit was issued during all phases of construction and shall furnish to the chief such regular reports of the engineer's inspections as the chief may require. When the chief finds that construction has been fully completed in accordance with the terms of the permit and the plans and specifications approved by the chief, the chief shall approve the construction. When one year has elapsed after approval of the completed construction, and the chief finds that within this period no fact has become apparent to indicate that the construction was not performed in accordance with the terms of the permit and the plans and specifications approved by the chief, or that the construction as performed would endanger life, health, or property, the chief shall release the bond or other security. No bond or other security shall be released until one year after final approval by the chief, unless the dam or levee has been modified so that it will not retain water and has been approved as nonhazardous after determination by the chief that the dam or levee as modified will not endanger life, health, or property.

- (F) When inspections required by this section are not being performed, the chief shall notify the person or governmental agency to which the permit has been issued that inspections are not being performed by the registered professional engineer and that the chief will inspect the remainder of the construction. Thereafter, the chief shall inspect the construction and the cost of inspection shall be charged against the owner. Failure of the registered professional engineer to submit required inspection reports shall be deemed notice that the engineer's inspections are not being performed.
- (G) The chief may order construction to cease on any dam or levee that is being built in violation of this section, and may prohibit the retention of water behind any dam or levee that has been built in violation of this section.
- (H) The chief may adopt rules in accordance with Chapter 119. of the Revised Code, for the design and construction of dams and levees for which a construction permit is required by this section or for which periodic inspection is required by section 1521.062 of the Revised Code, for deposit and forfeiture of bonds and other securities required by section 1521.061 of the Revised Code, for the periodic inspection, operation, repair, improvement, alteration, or removal of all dams and levees, as specified in section 1521.062 of the Revised Code, and for establishing classes of dams or levees that are exempt from the requirements of this section and section 1521.062 of the Revised Code as being of a size, purpose, or situation that does not present a substantial hazard to life, health, or property. The chief may, by rule, limit the period during which a construction permit issued under this section is valid. The rules may allow for the extension of the period during which a permit is valid upon written request, provided that the written request includes a revised construction cost estimate, and may require the payment of an additional filing fee for the requested extension. If a construction permit expires without an extension before construction is completed, the person or agency shall apply for a new permit, and shall not continue construction until the new permit is issued.
- (I) The chief shall adopt rules in accordance with Chapter 119. of the Revised Code establishing a filing fee schedule for purposes of division (B) of this section.

**Section 1521.061 Surety bond requirements of construction permits.** (A)(1) Except as otherwise provided in this section, the chief of the division of water resources shall not issue a construction permit under section 1521.06 of the Revised Code unless the person or governmental agency applying for the permit executes and files a surety bond conditioned on completion of the dam or levee in accordance with the terms of the permit and the plans and specifications approved by the chief. Except as provided in division (A)(2) of this section, the surety bond shall equal:

- (a) \$50,000 for the first \$500,000 of the estimated cost of the project; plus
- (b) Twenty-five per cent of the estimated cost for the next \$4,500,000 of the estimated cost of the project; plus
- (c) Ten per cent of the estimated cost that exceeds \$5,000,000.

(2) The chief may reduce the amount of the required surety bond to the amount equal to the cost estimate of construction activities necessary to render the dam nonhazardous if the cost estimate is provided by the applicant and approved by the chief.

(B) If a permittee requests an extension of the time period during which a construction permit is valid in accordance with rules adopted under section 1521.06 of the Revised Code, the chief shall determine whether the revised construction cost estimate provided with the request exceeds the original construction cost estimate that was filed with the chief by more than twenty-five per cent. If the revised construction cost estimate exceeds the original construction cost estimate by more than twenty-five per

cent, the chief may require an additional surety bond to be filed in an amount determined in accordance with division (A) of this section based on the revised construction cost estimate.

(C) The chief shall not approve any bond until it is personally signed and acknowledged by both principal and surety, or as to either by the attorney in fact thereof, with a certified copy of the power of attorney attached. The chief shall not approve the bond unless there is attached a certificate of the superintendent of insurance that the company is authorized to transact a fidelity and surety business in this state.

All bonds shall be given in a form prescribed by the chief and shall run to the state as obligee.

(D)(1) The applicant may deposit, in lieu of a bond, cash in an amount equal to the amount of the bond or United States government securities or negotiable certificates of deposit issued by any bank organized or transacting business in this state having a par value equal to or greater than the amount of the bond. Such cash or securities shall be deposited upon the same terms as bonds. If one or more certificates of deposit are deposited in lieu of a bond, the chief shall require the bank that issued any such certificate to pledge securities of the aggregate market value equal to the amount of the certificate that is in excess of the amount insured by the federal deposit insurance corporation. The securities to be pledged shall be those designated as eligible under section 135.18 of the Revised Code. The securities shall be security for the repayment of the certificate of deposit.

(2) Immediately upon a deposit of cash, securities, or certificates of deposit, the chief shall deliver them to the treasurer of state, who shall hold them in trust for the purposes for which they have been deposited. The treasurer of state is responsible for the safekeeping of such deposits. An applicant making a deposit of cash, securities, or certificates of deposit may withdraw and receive from the treasurer of state, on the written order of the chief, all or any portion of the cash, securities, or certificates of deposit, upon depositing with the treasurer of state cash, other United States government securities, or negotiable certificates of deposit issued by any bank organized or transacting business in this state equal in par value to the par value of the cash, securities, or certificates of deposit withdrawn. An applicant may demand and receive from the treasurer of state all interest or other income from any such securities or certificates as it becomes due. If securities so deposited with and in the possession of the treasurer of state mature or are called for payment by the issuer thereof, the treasurer of state, at the request of the applicant who deposited them, shall convert the proceeds of the redemption or payment of the securities into such other United States government securities, negotiable certificates of deposit issued by any bank organized or transacting business in this state, or cash as the applicant designates.

(E)(1) When the chief finds that a person or governmental agency has failed to comply with the conditions of the person's or agency's bond, the chief shall make a finding of that fact and declare the bond, cash, securities, or certificates of deposit forfeited in the amount set by rule of the chief. The chief shall thereupon certify the total forfeiture to the attorney general, who shall proceed to collect that amount.

(2) In lieu of total forfeiture, the surety, at its option, may cause the dam or levee to be completed as required by section 1521.06 of the Revised Code and rules of the chief, or otherwise rendered nonhazardous, or pay to the treasurer of state the cost thereof.

(F)(1) All moneys collected on account of forfeitures of bonds, cash, securities, and certificates of deposit under this section shall be credited to the dam safety fund created in section 1521.06 of the Revised Code. The chief shall make expenditures from the fund to complete dams and levees for which bonds have been forfeited or to otherwise render them nonhazardous.

(2) Expenditures from the fund for those purposes shall be made pursuant to contracts entered into by the chief with persons who agree to furnish all of the materials, equipment, work, and labor as specified and provided in the contract.

(G) A surety bond shall not be required for a permit for a dam or levee that is to be designed and constructed by an agency of the United States government, if the agency files with the chief written assurance of the agency's financial responsibility for the structure for one year following the chief's approval of the completed construction provided for under division (E) of section 1521.06 of the Revised Code.

**Section 1521.062 Periodic inspection of existing dams and levees.** (A) All dams and levees constructed in this state and not exempted by this section or by the chief of the division of water resources under section 1521.06 of the Revised Code shall be inspected periodically by the chief, except for classes of dams that, in accordance with rules adopted under this section, are required to be inspected by registered professional engineers who have been approved for that purpose by the chief. The inspection shall ensure that continued operation and use of the dam or levee does not constitute a hazard to life, health, or property. Periodic inspections shall not be required of the following structures:

- (1) A dam that is less than ten feet in height and has a storage capacity of not more than fifty acre-feet at the elevation of the top of the dam, as determined by the chief. For the purposes of this section, the height of a dam shall be measured from the natural stream bed or lowest ground elevation at the downstream or outside limit of the dam to the elevation of the top of the dam.
  - (2) A dam, regardless of height, that has a storage capacity of not more than fifteen acre-feet at the elevation of the top of the dam, as determined by the chief;
  - (3) A dam, regardless of storage capacity, that is six feet or less in height, as determined by the chief;
  - (4) A dam or levee belonging to a class exempted by the chief;
  - (5) A dam or levee that has been exempted in accordance with rules adopted under section 1521.064 of the Revised Code.
- (B) In accordance with rules adopted under this section, the owner of a dam that is in a class of dams that is designated in the rules for inspection by registered professional engineers shall obtain the services of a registered professional engineer who has been approved by the chief to conduct the periodic inspection of dams pursuant to schedules and other standards and procedures established in the rules. The registered professional engineer shall prepare a report of the inspection in accordance with the rules and provide the inspection report to the dam owner who shall submit it to the chief. A dam that is designated under the rules for inspection by a registered professional engineer but that is not inspected within a five-year period may be inspected by the chief at the owner's expense.
- (C) Intervals between periodic inspections shall be determined by the chief, but shall not exceed five years.

- (D) In the case of a dam or levee that the chief inspects, the chief shall furnish a report of the inspection to the owner of the dam or levee. With regard to a dam or levee that has been inspected, either by the chief or by a registered professional engineer, and that is the subject of an inspection report prepared or received by the chief, the chief shall inform the owner of any required repairs, maintenance, investigations, and other remedial and operational measures. The chief shall order the owner to perform such repairs, maintenance, investigations, or other remedial or operational measures as the chief considers necessary to safeguard life, health, or property. The order shall permit the owner a reasonable time in which to perform the needed repairs, maintenance, investigations, or other remedial measures, and the cost thereof shall be borne by the owner. All orders of the chief are subject to appeal as provided in Chapter 119. of the Revised Code.
- (E) The owner of a dam or levee shall monitor, maintain, and operate the structure and its appurtenances safely in accordance with state rules, terms and conditions of permits, orders, and other requirements issued pursuant to this section or section 1521.06 of the Revised Code. The owner shall fully and promptly notify the division of water resources and other responsible authorities of any condition that threatens the safety of the structure and shall take all necessary actions to safeguard life, health, and property.
- (F) Before commencing the repair, improvement, alteration, or removal of a dam or levee, the owner shall file an application including plans, specifications, and other required information with the division and shall secure written approval of the application by the chief. Emergency actions by the owner required to safeguard life, health, or property are exempt from this requirement. The chief may, by rule, define maintenance, repairs, or other remedial measures of a routine nature that are exempt from this requirement.
- (G) The chief may remove or correct, at the expense of the owner, any unsafe structures found to be constructed or maintained in violation of this section or section 1521.06 of the Revised Code. In the case of an owner other than a governmental agency, the cost of removal or correction of any unsafe structure, together with a description of the property on which the unsafe structure is located, shall be certified by the chief to the county auditor and placed by the county auditor upon the tax duplicate. This cost is a lien upon the lands from the date of entry and shall be collected as other taxes and returned to the division. In the case of an owner that is a governmental agency, the cost of removal or correction of any unsafe structure shall be recoverable from the owner by appropriate action in a court of competent jurisdiction.
- (H) If the condition of any dam or levee is found, in the judgment of the chief, to be so dangerous to the safety of life, health, or property as not to permit time for the issuance and enforcement of an order relative to repair, maintenance, or operation, the chief shall employ any of the following remedial means necessary to protect life, health, and property:
- (1) Lower the water level of the lake or reservoir by releasing water;
  - (2) Completely drain the lake or reservoir;
  - (3) Take such other measures or actions as the chief considers necessary to safeguard life, health, and property.

The chief shall continue in full charge and control of the dam or levee until the structure is rendered safe. The cost of the remedy shall be recoverable from the owner of the structure by appropriate action in a court of competent jurisdiction.

- (I) The chief may accept and expend gifts, bequests, and grants from the United States government or from any other public or private source and may contract with the United States government or any other agency or entity for the purpose of carrying out the dam safety functions set forth in this section and section 1521.06 of the Revised Code.
- (J) In accordance with Chapter 119. of the Revised Code, the chief shall adopt, and may amend or rescind, rules that do all of the following:
  - (1) Designate classes of dams for which dam owners must obtain the services of a registered professional engineer to periodically inspect the dams and to prepare reports of the inspections for submittal to the chief;
  - (2) Establish standards in accordance with which the chief must approve or disapprove registered professional engineers to inspect dams together with procedures governing the approval process;
  - (3) Establish schedules, standards, and procedures governing periodic inspections and standards and procedures governing the preparation and submittal of inspection reports;
  - (4) Establish provisions regarding the enforcement of this section and rules adopted under it.
- (K) The owner of a dam or levee shall notify the chief in writing of a change in ownership of the dam or levee prior to the exchange of the property

**Section 1521.063 Annual fee; actions against violators.** (A) Except for the federal government, the owner of a dam, that is classified as a class I, class II, or class III dam under rules adopted under section 1521.06 of the Revised Code and subject to section 1521.062 of the Revised Code shall pay an annual fee in accordance with the annual fee schedule established in rules adopted under division (B) of this section. The fee shall be paid to the division of water resources on or before the thirtieth day of June of each year.

All fees collected under this section shall be deposited in the dam safety fund created in section 1521.06 of the Revised Code. Any owner who fails to pay any annual fee required by this section within sixty days after the due date shall be assessed a penalty of ten per cent of the annual fee plus interest at the rate of one-half per cent per month from the due date until the date of payment.

There is hereby created the compliant dam discount program to be administered by the chief of the division of water resources. Under the program, the chief may reduce the amount of the annual fee that an owner of a dam is required to pay in accordance with rules adopted by the chief under division (B) of this section if the owner is in compliance with section 1521.062 of the Revised Code and has developed an emergency action plan pursuant to standards established in rules adopted under this section. The chief shall not discount an annual fee by more than twenty-five per cent of the total annual fee that is due. In addition, the chief shall not discount the annual fee that is due from the owner of a dam who has been assessed a penalty under this section.

(B)(1) The chief shall, in accordance with Chapter 119. of the Revised Code and subject to the prior approval of the director of natural resources, adopt, and may amend or rescind, rules for the collection of fees and the administration, implementation, and enforcement of this section and for the establishment of an annual fee schedule in lieu of the schedule established under in division (A) of this section.

(2) The chief shall, in accordance with Chapter 119. of the Revised Code, adopt rules for the establishment of an annual fee schedule for purposes of this section.

(3) The annual fee schedule must be based on the height of the dam, the linear foot length of the dam, and the per-acre foot volume of water impounded by the dam. For purposes of this section, the height of a dam is the vertical height, to the nearest foot, as determined by the division under section 1521.062 of the Revised Code.

(C) No person, political subdivision, or state governmental agency shall violate or fail to comply with this section or any rule or order adopted or issued under it.

(D) As used in this section, "political subdivision" includes townships, municipal corporations, counties, school districts, municipal universities, park districts, sanitary districts, and conservancy districts and subdivisions thereof.

**Section 1521.064 Inspection Exemptions.** The chief of the division of water resources, in accordance with Chapter 119. of the Revised Code, shall adopt, and may amend and rescind, rules establishing a program under which dams and levees may be exempted from inspections under section 1521.062 of the Revised Code if the continued operation and use of, and any rupturing of or other structural damage to, the dams and levees will not constitute a hazard to life, health, or property. The rules shall establish, without limitation, all of the following:

(A) A procedure by which the owner of such a dam or levee may apply for an exemption under this section;

(B) The standards that a dam or levee shall meet in order to be exempted under this section;

(C) A procedure by which the chief shall periodically review the status of a dam or levee that has been exempted under this section to determine if the exemption should be rescinded;

(D) A requirement that the owner of any dam or levee exempted under this section shall agree, in writing, to accept liability for any injury, death, or loss to persons or property caused by the rupturing of or other structural damage to the dam or levee.

**Section 1521.07 Right of entry.** The chief of the division of water resources or any employee in the service of the division may enter upon lands to make surveys and inspections in accordance with this chapter, when necessary in the discharge of the duties enumerated in this chapter.

**Section 1521.40** (A) No person shall violate any provision of this chapter, any rule or order adopted or issued under it, or any term or condition of a permit issued under it.

(B) The attorney general, upon written request of the chief of the division of water resources, shall bring an action for an injunction or other appropriate legal or equitable action against any person



who has violated, is violating, or is threatening to violate any provision of this chapter, any rule or order adopted or issued under it, or any term or condition of a permit issued under it.

- (C) A person who violates any provision of this chapter, any rule or order adopted or issued under it, or any term or condition of a permit issued under it is liable to the chief for any costs incurred by the division of water resources in investigating, mitigating, minimizing, removing, or abating the violation and conditions caused by it. The chief also may assess a civil penalty of not more than five thousand dollars per day for each day a violation occurs of any provision of this chapter, any rule or order adopted or issued under it, or any term or condition of a permit issued under it.
- (D) Upon the request of the chief, the attorney general shall bring a civil action against the responsible person to recover those costs and civil penalties in the court of common pleas of Franklin county. Money recovered under this division for violations of sections 1521.06 to 1521.063 of the Revised Code, any rule or order adopted or issued under those sections, or any term or condition of a permit issued under those sections shall be deposited in the state treasury to the credit of the dam safety fund created in section 1521.06 of the Revised Code. Money recovered under this division for violations of sections 1521.16 and 1521.22 to 1521.35 of the Revised Code, any rule or order adopted or issued under those sections, or any term or condition of a permit issued under those sections shall be deposited in the state treasury to the credit of the water management fund created in section 1521.22 of the Revised Code.

**Section 1521.99 Penalties.** (A) Whoever violates division (E)(1) of section 1521.05 or division (E)(1) of section 1521.16 of the Revised Code is guilty of a misdemeanor of the fourth degree. All fines collected pursuant to this division shall be deposited in the state treasury to the credit of the water management fund created in section 1521.22 of the Revised Code.

- (B) Whoever violates section 1521.06 or 1521.062 [1521.06.2] of the Revised Code shall be fined not less than one hundred dollars nor more than one thousand dollars for each offense. Each day of violation constitutes a separate offense. All fines collected pursuant to this division shall be deposited in the state treasury to the credit of the dam safety fund created in section 1521.06 of the Revised Code.
- (C) Whoever violates section 1521.22 of the Revised Code or the terms or conditions of a permit issued under that section shall be fined not more than ten thousand dollars for each day of violation. All fines collected pursuant to this division shall be deposited in the state treasury to the credit of the water management fund created in section 1521.22 of the Revised Code.
- (D) Whoever violates section 1521.23 of the Revised Code or the terms or conditions of a permit issued under section 1521.29 of the Revised Code is guilty of a misdemeanor of the fourth degree. All fines collected pursuant to this division shall be deposited in the state treasury to the credit of the water management fund created in section 1521.22 of the Revised Code.

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**CHAPTER 1501:21-1**  
**General Provisions**

1501:21-1-01 Notice of public hearing to adopt, amend, or rescind rules.

- (A) Public notice of hearings to be conducted by the division of water resources, department of natural resources, shall be advertised in the register of Ohio. In addition to public notice given in the register of Ohio, the division may give whatever other notice it reasonably considers necessary to ensure notice constructively is given to all persons who are subject to or affected by the proposed rule, amendment or rescission.
- (B) Said notice shall be given at least thirty days, but not more than sixty days, prior to the hearing. The notice shall state the division's intention to consider adopting, amending, or rescinding a rule; shall include a synopsis or full text of the proposed rule, amendment, or rule to be rescinded or a general statement of the subject matter to which such proposed rule relates; and shall enumerate the date, time, and place of the hearing on the proposed action. The notice shall also state the place from which copies of the proposed rule, amendment, or rule to be rescinded may be obtained.

Effective: May 24, 2018

1501:21-1-02 Authority for rules.

Division-level 1501:21 of the Administrative Code prescribed by the chief of the division of water resources of the department of natural resources, state of Ohio, in accordance with Chapter 119. of the Revised Code and the authority vested in the chief by Chapter 1521. of the Revised Code to issue permits for construction of dams and levees, to make periodic inspections of existing dams and levees, to collect annual fees for dams, and to exempt certain dams and levees from the provisions of sections 1521.06 and 1521.062 of the Revised Code.

Effective: May 24, 2018

1501:21-1-03 Applicability of the construction permit requirements for dams and levees.

In accordance with the provisions of sections 1521.06 and 1521.061 of the Revised Code and the rules and regulations adopted pursuant thereto, a construction permit shall be required for the construction of a dam or levee unless the structure is specifically exempted from these requirements by section 1521.06 of the Revised Code or by rule 1501:21-19-01 of the Administrative Code.

Effective: January 16, 2005

1501:21-1-04 Severability.

The invalidation by a court of a rule adopted or amended pursuant to sections 1521.06 to 1521.064 of the Revised Code shall not affect the validity of any other rule or portion thereof adopted or amended thereunder by the chief.

Effective: December 9, 1999

**CHAPTER 1501:21-3**  
**Definitions; Registered Professional Engineer Requirement**

1501:21-3-01 Definitions.

The following definitions shall apply to the terms used in division-level 1501:21 of the Administrative Code:

- (A) "Applicant" means the individual, corporation, partnership, proprietor, or public agency which is making an application for a construction permit.
- (B) "Appurtenant works" means interrelated elements or components of the dam including but not limited to outlet works and spillway channels.
- (C) "Breach" is defined as an opening in a dam that prevents the dam from impounding a significant amount of water.
- (D) "Bulkhead" means a structure or partition to reduce pressure and shut off water from entering a valve or gate chamber to allow for repair and maintenance of the valve or gate.
- (E) "Chief" means the chief of the division of water resources of the department of natural resources, state of Ohio.
- (F) "Conveyance" is the hydraulic term applied to the measurement of the carrying capacities of stream channels and overbank areas. Conveyance is directly proportional to discharge.
- (G) "Critical flood" means the flood that would result in no additional loss of life, health or property along a critical routing reach downstream of the dam from overtopping failure of the dam when compared to the potential for loss of life, health or property caused by the flood in the absence of a dam overtopping failure.
- (H) "Critical routing reach" means the entire floodplain area downstream of the dam where life, health, or property is potentially affected by failure of a dam.
- (I) "Dam" means any artificial barrier together with any appurtenant works, which either does or may impound water or other liquefied material. Upground reservoirs and lagoons are considered to be dams. A fill or structure intended solely for highway or railroad use that does not permanently impound water or other liquefied material as determined by the chief is not considered a dam.

- (J) "Design flood" is the runoff from the design storm taking into account the physiographic, topographic, hydrologic, and hydraulic characteristics of the drainage area.
- (K) "Division" means the division of water resources of the department of natural resources, state of Ohio.
- (L) "Emergency spillway" means a discharge system designed to operate at an elevation above the principal spill way to safely convey discharges that exceed the principal spill way's capacity without jeopardizing the safety of the dam.
- (M) "Enlargement" means increasing the elevation of the top of an existing dam for the purpose of increasing the elevation of the normal pool level of the impoundment, or increasing the elevation of the top of an existing levee.
- (N) "Flood" means a general and temporary condition of partial or complete inundation of normally dry land area.
- (O) "Flood profile" means a graph or longitudinal plot of maximum water surface elevations of a flood event versus measured distance along a stream from a fixed point of reference.
- (P) "Floodplain" means the land area adjoining a watercourse which may be inundated during a flood.
- (Q) "Freeboard" means the vertical dimension between the top of the dam or levee (without camber) and the reservoir at normal pool level, maximum operating pool, or stream water surface.
- (R) "Height-of-dam" means the vertical dimension as measured from the elevation of the natural stream bed, watercourse, or lowest ground elevation at the downstream or outside toe of a dam to the elevation of the top of the dam.
- (S) "Length-of-dam" means the horizontal dimension as measured along the crest of the dam from natural abutment to natural abutment. Spillway systems over the dam but not in the abutment area are included in the length determination. For upground reservoirs the length is the continuous distance around the crest of the dam.
- (T) "Levee" means any artificial barrier together with any appurtenant works that will divert or restrain the flow of a stream or other body of water for the purpose of protecting an area from inundation by flood waters.
- (U) "One-hundred-year flood" means the flood having a one per cent probability of being equaled or exceeded in any given year.
- (V) "Overtopping" means an event that occurs when the pool or stream elevation exceeds the elevation of the top of a dam or levee.
- (W) "Owner" means those who own, or propose to construct a dam or levee.

- (X) "Pipe conduit" means any tube or hollow channel which conveys water to or from a reservoir, or through a levee.
- (Y) "Primary or principal spillway" means the first discharge system designed to begin operation after the normal design storage capacity has been exceeded.
- (Z) "Probable maximum flood" or "PMF" means the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin under study. The "PMF" is derived from the probable maximum precipitation and is determined by using a hydrologic model to simulate the drainage basin's response to those critical conditions which produce the most severe flood runoff.
- (AA) "Probable maximum precipitation" or "PMP" means theoretically, the greatest depth of precipitation for a given duration that is physically possible over a given size storm area at a particular geographic location. The "PMP" is determined on the basis of data obtained by the national oceanic and atmospheric administration or other sources accepted by the chief.
- (BB) "Reservoir" means any impoundment, or any potential impoundment, that will be created by a dam.
- (CC) "Spillway level" means the elevation of the primary (principal) spillway or the elevation of the top of the dam if there is no spillway.
- (DD) "Storage volume" or "storage capacity" means the volume of water or other liquefied material, which is or may be impounded by a dam at a given elevation above the natural stream bed or above the natural grade for upground reservoirs. Impounded material that can be shown to the satisfaction of the chief to be non-liquefied can be excluded from the storage volume.
- (EE) "Total storage volume" means the total volume of water or other liquefied material impounded when the pool level is at the top of the dam immediately before it is overtopped. Impounded material that can be shown to the satisfaction of the chief to be non-liquefied can be excluded from the total storage volume.
- (FF) "Upground reservoir" means a reservoir formed by artificial barriers on two or more sides and which impounds water or liquefied material pumped or otherwise imported from an exterior source. Lagoons are considered upground reservoirs.

Effective: May 24, 2018

1501:21-3-02 Registered professional engineer and surveyor requirement.

- (A) Registered professional engineers who are qualified in the design, construction, and inspection of dams and levees and who are practicing in accordance with the laws of Ohio shall:



- (1) Prepare design reports, plans and specifications for the construction, modification or repair of dams and levees;
  - (2) Inspect the construction, modification or repair of dams and levees;
  - (3) Perform periodic inspections, detailed investigations, and analyses of dams and levees; and
  - (4) Prepare plans and specifications for and inspect the removal of existing dams and levees unless specifically exempted by the chief.
- (B) Throughout division-level 1501:21 rules of the Administrative Code, the term "engineer" shall mean such a registered professional engineer as described in this rule.
- (C) Registered professional surveyors who are practicing in accordance with the laws of Ohio may be required by the chief to prepare survey data for investigations including but not limited to storage volume calculations, critical flood analyses, or dam failure inundation mapping. Throughout division-level 1501:21 rules of the Administrative Code, the term "surveyor" shall mean such a registered professional surveyor as described in this rule.
- (D) Engineering and construction inspection and testing services for all dam construction shall be performed by an independent company that is not affiliated with, or hired by, the construction contractor.

Effective: May 23, 2010

## **CHAPTER 1501:21-5**

### **Application Procedures**

#### 1501:21-5-01 Application procedures, general.

The procedure for applying for a construction permit and submitting the supporting engineering documents shall consist of two parts, the preliminary design report and the final design submittal, as described in rules 1501:21-5-02 to 1501:21-5-06 of the Administrative Code.

Effective: December 9, 1999

#### 1501:21-5-02 Preliminary design report.

(A) For class I and II levees and for dams, the preliminary design report shall include:

- (1) A general description of the dam or levee and all appurtenances thereto, and the proposed classification of the structure as set forth in rule 1501:21-13-01 or 1501:21-13-09 of the Administrative Code. The description shall include a statement of the purpose for which the dam or levee is to be used, and a

statement setting forth the impact of such dam or levee as it relates to endangering human life, health, or property upstream, downstream or adjacent to the dam or levee.

(2) For dams, maps showing:

- (a) the ownership of all property, in whole or in part, that would be inundated by the reservoir up to and including the elevation of the top of the dam and the ownership of the property upon which the dam is located;
- (b) the location of the proposed structure; the county, township, and section lines;
- (c) the outline of the reservoir at its primary spillway elevation and its maximum pool;
- (d) topographic contours of the lake area up through the top of dam elevation to verify storage volumes;
- (e) the locations of state, county, and township roads; the locations of utilities, i.e., pipe, transmission, and telephone lines;
- (f) the location and elevation of any other structure or facility affected by the proposed dam or levee.

State, county, and U.S.G.S. maps, and aerial photographs may be accepted for these purposes

(3) For levees, maps showing:

- (a) the ownership of all property, in whole or in part, that would be protected and the ownership of the property upon which the levee is located;
- (b) the location of the proposed structure; the county, township, and section lines;
- (c) the locations of state, county, and township roads; the locations of utilities, i.e., pipe, transmission, and telephone lines;
- (d) the location of any other structure or facility affected by the proposed levee; and,
- (e) basement and first floor elevations of all structures potentially affected by the levee may be required to be shown as needed by the chief.

State, county, and U.S.G.S. maps, and aerial photographs may be accepted for these purposes.

(4) A written report of the surficial conditions, i.e., geology, topography, and cultural features, which includes a field reconnaissance by the applicant's engineer.

Logs of borings in the foundation and in the borrow areas, and results of seismic and resistivity subsurface investigations, when they are readily available.

- (5) Typical cross-sections of the dam or levee accurately showing proposed elevations, slopes, pool levels, and top width.
  - (6) Preliminary design assumptions, tentative conclusions, and references. The design assumptions shall pertain to such hydrologic and hydraulic parameters as drainage area, rainfall and runoff data, inflow hydrographs, area-capacity-elevation data, and flood routings, in addition to geologic and geotechnical engineering assumptions.
  - (7) A description of how the streamflow will be diverted around or through the dam site, or otherwise kept from interfering with the work;
  - (8) Other pertinent information as may be required by the chief.
- (B) For proposed class III levees, the preliminary design report shall include a letter from the owner stating the purpose and proposed height of the levee, a map showing the location of the levee, a map showing the ownership of all property, in whole or in part, that would be protected and certification that the levee will be consistent and in accordance with all applicable state and local floodplain regulations and requirements.
- (D) Within forty-five days from the date of receipt of the complete preliminary design report, the chief shall respond in writing with approval, conditional approval, or disapproval of said report. Upon approval, the chief shall designate the approved classification of the proposed structure. If the proposed structure is placed in class IV pursuant to rule 1501:21-13-01 or in class III pursuant to rule 1501:21-13-09 of the Administrative Code, the chief shall notify the applicant that the proposed structure is exempt from the construction permit requirements (rule 1501:12-19-01 of the Administrative Code).

Effective: May 24, 2018

1501:21-5-03 The final design submittal.

The final design submittal shall include an application on a form as specified by the chief, copies of which may be obtained from the division. The final design submittal shall also include the statutory filing fee, the original surety bond, the final design report, plus three copies each of the plans, and the specifications as prescribed in rules 1501:21-5-04 to 1501:21-5-06 of the Administrative Code. Within thirty days, the submittal shall be reviewed and either comments shall be provided or the chief shall issue approval.

Effective: January 16, 2005

1501:21-5-04 The final design report.

The final design report shall include:

- (A) All investigations required by 1501:21-11. Stability and settlement analyses, and seepage and underseepage studies shall be required, unless the applicant can demonstrate to the satisfaction of the chief that these analyses are not necessary.
- (B) The bases, references, calculations, and conclusions relative to hydrologic, hydraulic, and structural design studies, and to the design of spillways and outlet works. Design procedures that have been established by the United States army corps of engineers, the United States department of interior bureau of reclamation, the federal energy regulatory commission, and the United States department of agriculture natural resources conservation service are generally accepted as sound engineering practice. A written summary of the design references and assumptions that are used shall be included in the information that is submitted to the chief.
- (C) Steps to minimize erosion during construction.
- (D) Detailed cost estimates of the following:
  - (1) Construction of the structure and its appurtenances;
  - (2) Performance of construction inspections and materials testing; and
  - (3) Preparation of the operation, maintenance, and inspection manual, the emergency action plan, and the as-built plans.

The design cost for the project is not included.

- (E) For all class I structures except upground reservoirs, an emergency action plan for use during construction.
- (F) For all dams, a first filling monitoring plan.
- (G) Any other studies, investigations, and pertinent design information as may be required by the chief.

Effective: May 23, 2010

1501:21-5-05 The plans.

The plans shall consist of a bound portfolio of the drawings with all sheets being of the same size not larger than twenty-four inches by thirty-six inches. The plans shall also be provided in a digital file format acceptable to the chief.

- (A) Sheet one shall show: the name of the project; its location, e.g. section, township, and county; the name of the owner or applicant; and the classification of the structure. Sheet one shall also contain a vicinity map that shows the project location

with respect to the boundaries of political subdivisions, streams, highways, airports, and railroads.

- (B) Topographic and cross-section surveys shall be made with sufficient accuracy to locate the proposed construction. Locations of baselines, centerlines, and other horizontal and vertical control points shall be shown on a topographic map of the site.
- (C) A map shall be included that shows the locations of borings, test pits, proposed borrow areas, known farm tiles, utility lines, and other areas pertinent to the design and construction of the structure. The location of proposed borrow areas may be excluded from the map if acceptable to the chief.
- (D) The remainder of the plans shall be accurately drawn in sufficient detail as to clearly indicate the extent and complexity of the work.
- (E) The engineer shall affix the engineer's stamp, signature and date on each page of the plans.

Effective: May 23, 2010

1501:21-5-06 The specifications.

The specifications shall include the following:

- (A) The general provisions, which shall specify the rights, duties, and responsibilities of the owner, applicant, applicant's engineer, and builder, and the prescribed order of the work.
- (B) The technical provisions, which shall describe approved work methods, testing methods, testing frequency, equipment, materials, and required end results. The structural and hydraulic properties for the materials to be used as well as specifications for preparation and placement of these materials may also be required. The extent and method of quality control shall be subject to approval by the chief.
- (C) Special provisions as may be required, which shall describe those technical details that are not usually contained in standard technical provisions.

Effective: January 16, 2005

1501:21-5-07 The filing fee.

The filing fee shall be based on the detailed cost estimate for the proposed construction as filed with and approved by the chief in accordance with paragraph (D) of rule 1501:21-5-04 of the Administrative Code, and shall be determined by the following schedule:

- (A) For the first three hundred thousand dollars of estimated cost, a fee of four per cent;

- (B) For the next three hundred thousand dollars of estimated cost, a fee of three per cent;
- (C) For the next four hundred thousand dollars of estimated cost, a fee of two per cent;
- (D) For all costs in excess of one million dollars, a fee of one-half of one per cent.
- (E) In no case shall the filing fee be less than one thousand dollars. If the actual cost exceeds the estimated cost by more than fifteen per cent, an additional filing fee shall be required equal to the fee determined by the preceding schedule less the original filing fee.

Effective: May 24, 2018

## **CHAPTER 1501:21-7**

### **Surety Bond**

#### 1501:21-7-01 The surety bond.

The surety bond shall be in the form prescribed by the chief under section 1521.061 of the Revised Code. Copies of the bond form may be obtained from the division. The surety bond shall be based on the detailed cost estimate for the proposed construction as filed with and approved by the chief in accordance with paragraph (D) of rule 1501:21-5-04 of the Administrative Code.

Effective: January 16, 2005

#### 1501:21-7-02 Release of the surety bond.

- (A) The surety bond shall be released by the chief one year after the approval date (rule 1501:21-17-03 of the Administrative Code), provided that final approval is granted under rule 1501:21-17-04 of the Administrative Code.
- (B) If the owner or the surety decides to abandon the project for which the construction permit was issued, the owner or the surety shall immediately notify the chief in writing of this intent, and submit suitable plans to render the dam or levee non-hazardous. If the chief determines that an abandoned dam or levee does not constitute a hazard to life, health, or property, the chief shall release the surety bond.

Effective: January 16, 2005

#### 1501:21-7-03 Forfeiture of the surety bond.

- (A) If the chief determines during the construction or during the period between approval of construction (rule 1501:21-17-03 of the Administrative Code) and the final inspection (rule 1501:21-17-04 of the Administrative Code) that the construction was not performed in accordance with the terms of the bond as approved, the chief shall so notify the owner and the surety in writing of these findings. The owner and the

surety shall immediately correct the construction to comply with the terms of the bond. If the owner or the surety fails to immediately correct the construction to comply with the terms of the bond, the chief shall declare the bond forfeited and certify the forfeiture to the attorney general for collection in accordance with section 1521.061 of the Revised Code.

- (B) The amount of forfeiture shall be set by the chief in an amount sufficient to correct the construction to comply with the terms of the bond, or in an amount sufficient to render the dam or levee non-hazardous. Any balance of the bond not forfeited shall be returned to the surety upon correction of the construction or after rendering the dam or levee non-hazardous.

Effective: January 16, 2005

## **CHAPTER 1501:21-9**

### **Construction Permit**

1501:21-9-01 The construction permit.

- (A) The construction permit shall be issued by the chief after approval of the final design submittal and supporting documents called for in rule 1501:21-5-03 of the Administrative Code and receipt and acceptance of the surety bond and filing fee. The construction permit shall be valid for a period of two years from the date of issue unless otherwise specified by the chief under this rule. No construction shall be performed until the permit is issued by the chief.
- (B) If the magnitude of the project warrants that construction will exceed a period of two years, the chief may on request of the applicant issue a permit which is valid for a longer period.
- (C) If after construction has begun, a revised construction schedule shows that the permit will expire before construction is completed, the chief may on request of the applicant extend the life of the permit. No extension shall be granted unless the applicant has demonstrated to the satisfaction of the chief that substantial effort has been made to complete the construction.

Effective: January 16, 2005

## **CHAPTER 1501:21-11**

### **Investigations**

1501:21-11-01 Investigations, general requirements.

The applicant shall be required to complete all investigations prior to submission of the final design report. The investigations shall include the items described in rules 1501:21-11-02 to 1501:21-11-05 of the Administrative Code. The scope and degree of precision that will be required for a specific project will be a matter of judgment based on the

complexities of the site and the classification of the proposed structure.

Effective: January 16, 2005

1501:21-11-02 Foundation investigation.

- (A) A foundation investigation shall be conducted to determine the suitability of the site for the development of a dam or levee and any impoundment.
  - (1) The foundation materials beneath any dam, levee, or appurtenance must be able to bear the weight of the structure and any impounded materials without instability or detrimental settlement.
  - (2) The foundation materials beneath the dam, levee, appurtenance or any impoundment area must be able to limit any detrimental seepage that could impact neighboring properties or destabilize the dam or levee.
- (B) The foundation investigation shall be performed so as to define the soil and rock stratigraphy and the groundwater conditions to the satisfaction of the chief.
- (C) The foundation investigation shall consist of borings, test pits, and other subsurface explorations as deemed necessary.
- (D) Laboratory testing of the undisturbed and remolded soil specimens, and rock samples shall be required by the chief, unless the applicant can demonstrate to the satisfaction of the chief that these analyses are not necessary.

Effective: May 24, 2018

1501:21-11-03 Construction materials.

- (A) All materials, such as borrow soil, aggregate, riprap stone, and filter material, are proposed for use in the dam or levee, the applicant shall determine the locations and extents of these materials, and their structural properties and gradations when incorporated into the proposed dam or levee. The applicant shall show the locations of these materials on the plans.
- (B) A construction materials investigation shall be conducted to determine the suitability of the material to construct a dam or levee.
  - (1) The construction materials used to construct the dam must be able to remain stable for all loading conditions and have limited detrimental settlement.
  - (2) The construction materials must be able to limit any detrimental seepage that could impact neighboring properties or destabilize the dam or levee.

Effective: May 24, 2018



1501:21-11-05 Hydrologic and hydraulic investigations.

- (A) Hydraulic and hydrologic analyses shall be accomplished using methodologies and computer analyses developed by the division of water resources, the United States army corps of engineers, the United States geological survey, the natural resources conservation service, the United States bureau of reclamation, the national weather service, or others which employ sound engineering basis and are specifically approved by the chief. Both present and projected future land uses shall be considered in determining the runoff characteristics of the drainage areas. The more severe of these two conditions shall be used in the design.
- (B) For dams, the hydrologic and hydraulic assumptions and design calculations used in spillway designs shall be included in the design submittal. These shall include, but not be limited to:
- (1) Rainfall and runoff data;
  - (2) Reservoir inflow hydrographs;
  - (3) Reservoir area-storage volume elevation data to the top of dam elevation;
  - (4) Spillway elevation-discharge data;
  - (5) Reservoir flood routings and backwater analyses, except as provided in rule 1501:21-13-03 of the Administrative Code; and
  - (6) A dam failure analysis as may be required by the chief for downstream hazard evaluation.
- (C) For levees, the hydrologic and hydraulic assumptions and design calculations used shall be included in the design submittal. These shall include, but not be limited to:
- (1) Discharge/probability data;
  - (2) Hydrographs;
  - (3) Valley cross-sections;
  - (4) Descriptive hydraulic information concerning bridges and other structures that influence the hydraulic characteristics of the watercourse;
  - (5) Stream elevation-discharge-storage data; and
  - (6) Stream flood routings and flood profiles.

Effective: May 24, 2018

**CHAPTER 1501:21-13**  
**Classification and Design of Dams and Levees**

1501:21-13-01 Classification of dams.

- (A) For the purpose of this chapter, dams shall be divided into four classes, which shall be known as class I, class II, class III, and class IV. The chief shall establish a dam's appropriate classification by using the following criteria as a guideline. Such classification shall be established by the chief during the preliminary review described by rule 1501:21-5-02 of the Administrative Code or during the periodic inspection described by rule 1501:21-21-01 of the Administrative Code. The chief reserves the right to reclassify any dam at any time as a result of circumstances not in existence or not known at the time said dam was initially classified.
- (1) Dams having a total storage volume greater than five thousand acre-feet or a height of greater than sixty feet shall be placed in class I. A dam shall be placed in class I when sudden failure of the dam would result in one of the following conditions.
    - (a) Probable loss of human life.
    - (b) Structural collapse of at least one residence or one commercial or industrial business.
  - (2) Dams having a total storage volume greater than five hundred acre-feet or a height of greater than forty feet shall be placed in class II. A dam shall be placed in class II when sudden failure of the dam would result in at least one of the following conditions, but loss of human life is not probable.
    - (a) Disruption of a public water supply or wastewater treatment facility, release of health hazardous industrial or commercial waste, or other health hazards.
    - (b) Flooding of residential, commercial, industrial, or publicly owned structures. At the request of the dam owner, the chief may exempt dams from the criterion of this paragraph if the dam owner owns the potentially affected property.
    - (c) Flooding of high-value property. At the request of the dam owner, the chief may exempt dams from the criterion of this paragraph if the dam owner owns the potentially affected property.
    - (d) Damage or disruption to major roads including but not limited to interstate and state highways, and the only access to residential or other critical areas such as hospitals, nursing homes, or correctional facilities as determined by the chief.
    - (e) Damage or disruption to railroads or public utilities.
    - (f) Damage to downstream class I, II or III dams or levees, or other dams or levees of high value. Damage to dams or levees can include, but is not

limited to, overtopping of the structure. At the request of the dam owner, the chief may exempt dams from the criterion of this paragraph if the dam owner owns the potentially affected property.

(3) Dams having a total storage volume greater than fifty acre-feet or a height of greater than twenty-five feet shall be placed in class III. A dam shall be placed in class III when sudden failure of the dam would result in at least one of the following conditions, but loss of human life is not probable.

(a) Property losses including but not limited to rural buildings not otherwise described in paragraph (A) of this rule, and class IV dams and levees not otherwise listed as high-value property in paragraph (A) of this rule. At the request of the dam owner, the chief may exempt dams from the criterion of this paragraph if the dam owner owns the potentially affected property.

(b) Damage or disruption to local roads including but not limited to roads not otherwise listed as major roads in paragraph (A) of this rule.

(4) Dams which are twenty-five feet or less in height and have a total storage volume of fifty acre-feet or less may be placed in class IV. When sudden failure of the dam would result in property losses restricted mainly to the dam and rural lands, and loss of human life is not probable, the dam may be placed in class IV. Class IV dams are exempt from the permit requirements of section 1521.06 of the Revised Code pursuant to paragraph (C) of rule 1501:21-19-01 of the Administrative Code.

(B) All pertinent information including any unusual circumstances shall be considered by the chief in establishing an appropriate classification for a dam. Probable future development of the area downstream from the dam that would be affected by its failure shall be considered. Completed downstream hazard mitigation such as acquisition, removal or protection of downstream property may also be considered. However, the above criteria shall in no way preclude the chief's requirement of greater safety in the interest of life, health, or property.

Effective: May 23, 2010

1501:21-13-02 Design flood for dams and determination of critical flood.

The magnitude of the design flood for each dam shall be set by the chief and determined from actual streamflow and flood frequency records or from synthetic hydrologic criteria based on current publications prepared by the division, the United States army corps of engineers, the United States geological survey, the national oceanic and atmospheric administration, or others acceptable to the chief.

(A) The minimum design flood will be:

(1) For class I dams, the probable maximum flood or the critical flood;

- (2) For class II dams, fifty percent of the probable maximum flood or the critical flood; and,
  - (3) For class III dams, twenty-five percent of the probable maximum flood or the critical flood.
- (B) Selection of a critical flood as the design flood is acceptable. The design for the critical flood shall be for site-specific conditions and based on a quantitative and relative impact analysis of the downstream critical routing reach. In determining the critical flood, the spillway and storage capacity for the dam shall be designed so that there will be no additional potential for loss of life, health or property in the critical routing reach from overtopping failure of the dam when compared to the potential for loss of life, health or property caused by the flood in the absence of a dam overtopping failure.
- (1) Where the incremental depth of flow between the failure and non-failure floods is 2.0 feet or greater, or the product of the average floodplain flow velocity (in feet per second) and the incremental flood depth (in feet) is greater than 7.0, additional potential for loss of life, health or property in the critical routing reach is expected.
  - (2) If the incremental depth of flow between the failure and non-failure floods is less than 2.0 feet, and the product of the average floodplain flow velocity (in feet per second) and the incremental flood depth (in feet) is less than 7.0, it does not necessarily mean that the critical flood has been determined. Further investigation will be required to determine that no additional potential for loss of life, health or property will occur.
- (C) The minimum critical flood shall be as follows:
- (1) Forty per cent of the probable maximum flood for a class I dam,
  - (2) Twenty per cent of the probable maximum flood for a class II dam, and
  - (3) The one-hundred-year flood for a class III dam.
- (D) The owner or applicant shall submit to the chief, in writing, a request for consideration of the critical flood as the design flood. As required by the Chief, this request shall be accompanied by appropriate supporting calculations. The chief will not consider risk assessment based upon planned evacuation, probability of inhabitation, or monetary recovery of property damage.
- (E) If downstream hazard conditions change at any time during the life of the structure, a reevaluation of the critical routing reach and modification of the critical flood may be required by the chief.

Effective: May 24, 2018

1501:21-13-03 Spillway design, general requirements.

- (A) Every dam shall have a spillway system which will safely operate during the design flood without endangering the safety of the dam.
- (B) Each spillway shall include a means of dissipating the energy of flow without endangering the safety of the dam.
- (C) The capacity of the spillway system shall be equal to the peak inflow rate of the design flood unless the applicant has demonstrated by flood routing procedures that the dam will safely pass the design flood with the spillway system.
- (D) Every upground reservoir shall have an overflow or other device to preclude overfilling the reservoir during normal filling operations. Local watershed drainage into the reservoir must also be included in the design of the overflow device if applicable.
  - (1) The elevation of an overflow device shall be no more than 0.5 foot above the designed maximum operating pool level of the reservoir.
  - (2) A device other than an overflow that is used to preclude overfilling must prevent the reservoir from rising 0.5 foot above the designed maximum operating pool level.

Effective: January 16, 2005

1501:21-13-04 Pipe conduit spillways, general requirements.

- (A) All pipe conduits shall convey flow at the maximum design velocity without damage to the interior surface.
- (B) Seepage control devices acceptable to the chief shall be installed.
- (C) Adequate allowances shall be incorporated in the design to compensate for settlement and possible elongation of the pipe conduit.
- (D) An anti-vortex device that is satisfactory to the chief shall be installed at the intake of all pipe and riser spillway systems. Anti-vortex devices may also be required for other spillway types as necessary to improve the performance of the spillway.
- (E) A trash rack that is satisfactory to the chief shall be installed at the intake of all pipe and riser and/or drop inlet type spillway systems to prevent clogging the pipe conduit. Trash rack devices may also be required for other spillway types as necessary to ensure the performance of the spillway.
- (F) An emergency overflow spillway shall be required, except when specifically exempted by the chief. A vegetated or unlined emergency spillway will be approved by the chief, but only after the applicant has demonstrated that it will pass the design flood without jeopardizing the safety of the structure. The average frequency of use

for a vegetated or unlined emergency spillway must be predicted to be less than the following criteria unless otherwise approved by the chief:

- (1) Once in fifty years for class I dams;
  - (2) Once in twenty-five years for class II dams; and
  - (3) Once in ten years for class III dams.
- (G) The pipe conduit shall be of such size as to remove from the reservoir within ten days following passage of the design flood peak at least eighty percent of the water temporarily detained in the reservoir above the elevation of the primary (principal) spillway.

Effective: January 16, 2005

1501:21-13-05 Pipe conduit spillways, special requirements.

- (A) Pipe conduits shall be of such design as to safely support the total external loads and shall convey flow without rupture or leakage.
- (B) Unless otherwise approved by the chief, the minimum inside dimension of the pipe conduit shall be:
- (1) Twenty-four inches for class I and class II dams.
  - (2) Eighteen inches for class III dams.
- (C) All pipes shall have the ability to resist corrosion from surrounding soils and impounded materials based on current acceptable testing standards.
- (D) Corrugated metal pipe and corrugated plastic pipe shall not be used.

Effective: May 24, 2018

1501:21-13-06 Requirements for drains and other pipe conduits.

- (A) Unless specifically exempted by the chief, dams in class I, class II, and class III shall include a device to permit draining the reservoir within a reasonable period of time as approved by the chief. Pipe conduits used for lake drains shall have a minimum inside diameter of not less than four inches and must be placed at an elevation to account for sedimentation in the reservoir.
- (B) Valves or sluice gates in pipe conduits shall be installed upstream from the centerline of the dam unless otherwise approved by the chief.
- (C) All pipe conduits used as drains, water supply lines, or other pressure-flow conduits, regardless of classification of the dam, shall meet the requirements of paragraphs

(A), (B), (C), and (E) of rule 1501:21-13-04 of the Administrative Code and paragraphs (A), (C), and (D) of rule 1501:21-13-05 of the Administrative Code.

- (D) When the drain outlets into a pipe-conduit upstream from the centerline of the dam, seepage control devices may be omitted from the drain.
- (E) All new dam construction shall include a bulkhead for the outlet works unless specifically exempted by the chief.

Effective: May 24, 2018

1501:21-13-07 Freeboard requirements for dams.

Sufficient freeboard shall be provided to prevent overtopping of the top of the dam due to passage of the design flood and other factors including, but not limited to, ice and wave action. The chief may approve a lower freeboard requirement if the dam is armored against overtopping erosion.

- (A) For class I and class II dams that are upground reservoirs, the minimum elevation of the top of the dam shall be at least five feet higher than the elevation of the designed maximum operating pool level unless otherwise approved by the chief.
- (B) For class III dams that are upground reservoirs, the minimum elevation of the top of the dam shall be at least three feet higher than the elevation of the designed maximum operating pool level unless otherwise approved by the chief.

Effective: January 16, 2005

1501:21-13-08 Additional design requirements for dams.

- (A) The safety factors for the various elements of the dam shall conform to good engineering practice as approved by the chief. The safety factors and the design standards that are used by the applicant shall agree with the approved design assumptions.
- (B) Inspection devices such as piezometers, settlement platforms, stand-pipes, tell-tale stakes, monitoring weirs, inclinometers, and permanent bench marks, may be required by the chief for the division's and the owner's use in the inspection of the structure during and after completion of construction.
- (C) The chief may require dams to have a staff gauge to allow monitoring of lake levels within a range from the lower of five feet below normal pool or the normal drawdown level, to the top of dam elevation. The design of the staff gauge will be reviewed and approved by the chief.
- (D) Grass vegetation or other vegetation of similar properties are the only acceptable vegetative covers for earthen dam embankment surfaces or vegetated earth spillways.

Trees and brush are not acceptable surface covers.

- (E) The applicant shall demonstrate to the satisfaction of the chief that the structure will be consistent and in accordance with all applicable state and local floodplain regulations and requirements.

Effective: May 23, 2010

1501:21-13-09 Classification of levees.

- (A) For the purpose of this chapter, levees shall be divided into three classes, which shall be known as class I, class II, and class III. The chief shall establish a levee's appropriate classification by using the following criteria as a guideline. Such classification shall be established by the chief during the review of the preliminary design report described by rule 1501:21-5-02 of the Administrative Code or during the periodic inspection described by rule 1501:21-21-01 of the Administrative Code. The chief reserves the right to reclassify any levee at any time as a result of circumstances not in existence or not known at the time said levee was initially classified.
  - (1) A levee shall be placed in class I when sudden failure of the levee would result in one of the following conditions.
    - (a) Probable loss of human life.
    - (b) Structural collapse of at least one residence or one commercial or industrial business.
  - (2) A levee shall be placed in class II when sudden failure of the levee would result in at least one of the following conditions, but loss of human life is not probable.
    - (a) Disruption of a public water supply or wastewater treatment facility, or other health hazards.
    - (b) Flooding of residential, commercial, industrial, or publicly owned structures.
    - (c) Flooding of high-value property.
    - (d) Damage or disruption to major roads including but not limited to interstate and state highways, and the only access to critical areas such as hospitals, nursing homes, or correctional facilities as determined by the chief.
    - (e) Damage or disruption to railroads or public utilities.
  - (3) A levee having a height of not more than three feet shall be placed in class III. A levee having a height of more than three feet shall be placed in class III when sudden failure of the levee would result in at least one of the following conditions, but loss of human life is not probable.



- (a) Property losses including but not limited to rural buildings not otherwise described in paragraph (A) of this rule.
- (b) Damage or disruption to local roads including but not limited to roads not otherwise listed as major roads in paragraph (A) of this rule.
- (c) Property losses restricted mainly to the levee and to the owner's property or to rural lands

Class III levees are exempt from the permit requirements of section 1521.06 of the Revised Code pursuant to paragraph (C) of rule 1501:21-19-01 of the Administrative Code.

- (B) All pertinent information including any unusual circumstances shall be considered by the chief in establishing an appropriate classification for a levee. Probable future development of the area adjacent to the levee shall be considered. However, the above criteria shall in no way preclude the chief's requirement of greater safety in the interest of life, health, and property.

Effective: May 24, 2018

1501:21-13-10 Levees, general requirements.

- (A) Future development of areas upstream, downstream, and adjacent to the levee shall be considered in the design.
- (B) The levee shall operate safely during all floods up to the design flood elevation.
- (C) Provisions for drainage of the area protected by the levee shall be incorporated into the structure. Measures shall be included to prevent flooding of this area by backflow through the drainage system.
- (D) The levee must be protected from or designed to prevent erosive velocities along the structure and its foundation.
- (E) Grass vegetation or other vegetation of similar properties are the only acceptable vegetative covers for earthen levee embankment surfaces. Vetch, trees and brush are not acceptable surface covers.

Effective: January 16, 2005

1501:21-13-11 Levees, special requirements.

- (A) Hydraulic analyses shall be conducted to determine flood elevations for stream reaches affected by the construction of a levee and in accordance with rule 1501:21-13-10 of the Administrative Code. The analyses must provide flood depth and velocity data during the one-hundred-year, twenty-five-year, and five-year flood events, and for the top-of-levee flood event. For construction of new levees, the

flood depths and velocities must be determined with and without the levee. The impact of increased flood depths and velocities on property and structures must be provided.

Effective: January 16, 2005

1501:21-13-12 Design flood for levees.

- (A) The design flood shall be established by the chief in concert with the applicant's desired level of protection, but with the utmost interest in safeguarding life, health, and property. For class I levees, the minimum design flood will be the one-hundred-year flood or the critical flood. The design for the critical flood shall be for site-specific conditions and based on a quantitative and relative impact analysis of the protected area. In determining the critical flood, the levee shall be designed so that there will be no additional potential for loss of life, health or property from overtopping failure of the levee when compared to the potential for loss of life, health or property caused by the flood in the absence of a levee overtopping failure.
- (B) The magnitude of the design flood shall be determined from actual streamflow and flood frequency records or from synthetic hydrologic criteria based on current publications prepared by the division, the national oceanic and atmospheric administration (NOAA), the United States army corps of engineers, the United States geological survey, or others specifically approved by the chief.

Effective: January 16, 2005

1501:21-13-13 Freeboard requirements for levees.

- (A) For levees in class I, the minimum elevations of the top of the levee shall be at least three feet higher than the maximum adjacent water surface elevations during passage of the design flood. The chief may approve a lower freeboard requirement with acceptable documentation.
- (B) For levees in class II, the minimum elevations of the top of the levee shall be two feet higher than the maximum adjacent water surface elevations during passage of the design flood.
- (C) Where special conditions of severe frost damage, ice damage, stream obstruction, wave action, or impact of other structures may occur, the chief may require elevations higher than required in paragraph (A) of this rule.

Effective: May 24, 2018

1501:21-13-14 Additional design requirements for levees.

- (A) The safety factors of the various elements of the levee shall conform to good engineering practice as approved by the chief. The safety factors and the design

standards that are used by the applicant shall agree with the approved design assumptions.

- (B) Design references that are used shall be cited in the information that is submitted to the chief.
- (C) Inspection devices, which include but are not necessarily restricted to settlement platforms, tell-tale stakes, inclinometers and permanent bench marks, may be required by the chief for the division's and the owner's use in the inspection during and after completion of construction.
- (D) The applicant shall demonstrate to the satisfaction of the chief that the structure will be consistent and in accordance with all applicable state and local floodplain regulations and requirements.

Effective: May 24, 2018

## **CHAPTER 1501:21-15**

### **Supervision of Construction**

#### 1501:21-15-01 Construction Requirements.

- (A) The applicant shall submit in writing a schedule of the proposed construction including the estimated time to complete the construction activities.
- (B) The applicant shall submit for approval a winterization plan if construction will extend over the winter season.
- (C) The chief may require that the drain remain open and no water be stored until construction has been approved in accordance with rule 1501:21-17-03 or rule 1501:21-22-03 of the Administrative Code.
- (D) The chief may require that the division be notified prior to the start of certain critical construction activities.
- (E) Construction reports shall consist of a detailed daily log of all construction operations, including:
  - (1) The date, location, and results of tests performed on construction materials; and
  - (2) A narrative of problems encountered during construction and inspection and the manner in which they were resolved.
- (F) The registered professional engineer who is responsible for inspecting the construction shall submit periodic progress reports during the construction period as required by the chief. These reports shall be submitted no later than ten calendar days after the end of the reporting period or as stipulated in the terms of the construction permit.

Effective: January 16, 2005

1501:21-15-02 Approval of changes in design, plans, or specifications.

The chief shall be promptly advised of all proposed changes in the approved design, plans, or specifications. There shall be no change in the approved design, plans, or specifications without prior approval of the chief. All such approved changes shall be recorded on the complete set of as-built plans as required in rule 1501:21-15-04 of the Administrative Code.

Effective: December 9, 1999

1501:21-15-04 As-built plans.

One complete set of as-built plans and the detailed final cost shall be submitted to the chief upon completion of the project. All modifications and approved changes shall be accurately recorded on the as-built plans as prescribed in rule 1501:21-15-02 of the Administrative Code.

Effective: December 9, 1999

1501:21-15-05 Engineer's certification.

The registered professional engineer who has inspected the construction shall submit written certification that the structure has been built in conformance with the plans, specifications, and changes approved by the chief.

Effective: October 15, 1981

1501:21-15-06 Operation, maintenance, and inspection manual.

A manual detailing the operation, maintenance, and inspection of the dam or levee and the appurtenances thereto, shall be prepared for the owner's use during the life of the structure. Manuals shall be required for all class I, class II, and class III dams and all class I and class II levees. The manual shall be submitted to the chief for approval upon the completion of construction or as otherwise directed by the chief. The manual shall be provided in both a paper and a digital file format acceptable to the chief. The necessary detail and complexity of the manual will depend upon the complexity of the specific structure for which it is being prepared. However, the manual shall include, but not be limited to, the following:

- (A) An operation plan including, if applicable, a plan for the initial filling of the reservoir;
- (B) A program of scheduled maintenance;

- (C) A program of regular inspection and monitoring of any inspection devices;
- (D) Procedures for safe-rate drawdown of the reservoir;
- (E) Provisions for inspection of the structure and its appurtenances by a qualified engineer;
- (F) Any other measures necessary to insure the continued safe operation and use of the structure.

Effective: May 24, 2018

1501:21-15-07 Emergency action plan.

An emergency action plan shall be required for all class I, II and III dams and all class I and class II levees. The emergency action plan for all class I structures shall include but not be limited to an inundation map of the critical routing reach. An inundation map may also be required for class II and III dams as designated by the chief. The required detail of this map depends upon the complexity of the downstream hazard and shall be acceptable to the chief. Three copies of the emergency action plan shall be submitted to the chief for approval upon the completion of construction or as otherwise directed by the chief. The chief may require additional copies as necessary. The plan shall also be provided in a digital file format acceptable to the chief.

Effective: May 24, 2018

**CHAPTER 1501:21-17**  
**Inspection by Chief**

1501:21-17-01 Inspection procedure.

The chief may make inspections during construction as deemed necessary to insure that the structure is being built in compliance with the approved plans and specifications which serve as the basis for issuing the construction permit. However, the inspections by the chief do not relieve the owner or the registered professional engineer in charge of the responsibility of providing adequate inspection of the work.

Effective: 10-15-81

1501:21-17-02 Notice, order, and revocation for noncompliance.

If at any time during the progress of the work, the chief finds that the work is not being performed in accordance with the approved plans and specifications or approved changes thereof, the chief may serve a written notice to that effect to the owner or the owner's representative by registered or certified mail or by personal service. Such notice shall state the particulars in which the work has not complied with the approved plans and specifications or changes. The chief may order the immediate compliance with such

plans, specifications, or changes. If the owner or the owner's representative fails to comply with the requirements of the order, the permit under which construction is authorized may be revoked by the chief. As prescribed by rule 1501:21-23-01 of the Administrative Code, each notice of a chief's order or a permit revocation shall inform the affected party of the hearing and appeal provisions of Chapter 119. of the Revised Code.

Effective: December 9, 1999

1501:21-17-03 Approval of construction by the chief.

Upon receipt of the engineer's certification required in rule 1501:21-15-05 of the Administrative Code, the as-built plans and detailed final cost required in rule 1501:21-15-04 of the Administrative Code, the operation, maintenance, and inspection manual required in rule 1501:21-15-06 of the Administrative Code, and the emergency action plan required in rule 1501:21-15-07 of the Administrative Code, the chief shall within thirty days inspect the completed construction. If the chief finds that construction was completed in accordance with the approved plans, specifications, and changes, the chief shall within fourteen days after inspection approve the construction and so notify the owner and the surety in writing. The approval date shall be the date such notice is sent by the chief.

Effective: December 9, 1999

1501:21-17-04 Final inspection and approval by the chief.

In the twelfth month following approval of construction by the chief under rule 1501:21-17-03 of the Administrative Code, the chief shall make a final inspection of the construction. If the final inspection shows that no fact has become apparent to indicate that the construction was not performed in accordance with the terms of the permit, plans, specifications, and approved changes thereof, and that the completed construction as performed would apparently not endanger life, health, or property, the chief shall give final approval of the construction and release the surety bond as prescribed in rule 1501:21-7-02 of the Administrative Code.

Effective: October 15, 1981

**CHAPTER 1501:21-19**  
**Exemptions**

1501:21-19-01 Permit exemptions for dams and levees.

In addition to the exemptions noted in section 1521.06 of the Revised Code, the following classes of dams and levees are hereby exempt from the construction permit requirements of sections 1521.06 and 1521.061 of the Revised Code unless otherwise stated and the rules and regulations adopted pursuant thereto:

- (A) Dams and levees designed and constructed by the United States army corps of engineers.
- (B) Dams and levees constructed by the state of Ohio, department of natural resources are exempt from the requirements of section 1521.061 of the Revised Code, provided that copies of the final design report, plans, and specifications required in rules 1501:21-5-04 to 1501:21-5-06 of the Administrative Code, and prepared by registered professional engineers in accordance with rule 1501:21-3-02 of the Administrative Code are filed with and approved by the chief. These dams and levees are not exempt from the requirements of section 1521.06 of the Revised Code.
- (C) Dams placed by the chief in class IV under rule 1501:21-13-01 of the Administrative Code, provided that the structure is built in general conformance with the design proposed in the preliminary design report prescribed by rule 1501:21-5-02 of the Administrative Code.
- (D) Levees placed by the chief in class III under rule 1501:21-13-09 of the Administrative Code, provided that the structure is built in general conformance with the design proposed in the preliminary design report prescribed by rule 1501:21-5-02 of the Administrative Code.
- (E) Modifications or repairs to existing dams or levees, provided that the modifications or repairs do not constitute an enlargement of the structure as defined by rule 1501:21-3-01 of the Administrative Code or a reconstruction of the structure as determined by the chief.

Effective: May 24, 2018

1501:21-19-02 Inspection exemptions for dams and levees.

- (A) In addition to the exemptions noted in section 1521.062 of the Revised Code, the following classes of dams and levees are hereby exempt from inspection requirements of sections 1521.062 of the Revised Code and the rules and regulations adopted pursuant thereto:
  - (1) Dams and levees constructed or inspected by the United States army corps of engineers.
  - (2) Dams placed by the chief in class IV under rule 1501:21-13-01 of the Administrative Code.
  - (3) Levees placed by the chief in class III under rule 1501:21-13-09 of the Administrative Code.
  - (4) Dams placed by the chief in class III under rule 1501:21-13-01 of the Administrative Code, provided that the continued operation and use of, and any rupturing of or other structural damage to the dam will not constitute a hazard to life, health, or property.

(B) Dams and levees of any class may be exempted from inspection under section 1521.064 of the Revised Code if the continued operation and use of, and any rupturing of or other structural damage to, the dams and levees will not constitute a hazard to life, health, or property.

(1) The following procedure shall be used for applying for an inspection exemption under section 1521.064 of the Revised Code.

(a) The owner of the dam or levee shall submit a letter to the chief requesting an exemption under section 1521.064 of the Revised Code.

(b) The owner shall also provide a map showing the location of the dam or levee.

(c) The chief may require submittal of documentation verifying that no person, structure or facility will be damaged by failure of the dam or levee. This documentation may include but not be limited to inundation maps, dam break studies and other calculations and information as deemed necessary by the chief.

(d) The owner shall submit a written certification that they accept liability for any injury, death, or loss to persons or property caused by the rupturing of or other structural damage to the dam or levee. This liability certification is not transferable. If the ownership of the dam or levee changes, the new owner shall submit a new liability certification to continue the exemption.

(2) The dam or levee shall meet the following standards before it can be exempted under section 1521.064 of the Revised Code.

(a) A dam shall have sufficient discharge/storage capacity to pass the one-hundred-year flood, or other design flood as deemed appropriate by the chief, safely through the appurtenant spillway system.

(b) The dam or levee shall be in a condition sufficient to reasonably assure its continued operation and meet all requirements deemed necessary by the chief.

(c) The chief may require the dam or levee to have an approved operation, maintenance and inspection manual and an emergency action plan.

(3) In order to maintain the exemption, the chief will review the status of the dam or levee on an annual basis. The review will follow this procedure.

(a) The owner will submit a notice to the chief certifying that the downstream hazard of the dam or levee has not changed. This notice will be due to the chief by June thirtieth of each year.

(b) The owner shall maintain the dam or levee in good condition and must be demonstrated to the satisfaction of the chief.

(c) The owner shall submit notification to the chief of a change in ownership of



the dam or levee.

(d) The chief may make periodic investigations to verify the exemption status.

(e) If any fact becomes apparent to indicate that the hazard of the dam or levee has changed or that the dam or levee is no longer in good condition, the chief shall rescind the exemption and classify the dam or levee based on rule 1501:21-13-01 of the Administrative Code.

Effective: May 24, 2018

## **CHAPTER 1501:21-21**

### **Periodic Inspection**

#### 1501:21-21-01 Periodic inspection of existing dams and levees.

- (A) The chief shall make periodic inspections and evaluations of all class I, class II, and class III dams and all class I and class II levees to assure that their continued operation and use does not constitute a hazard to life, health, or property. The chief may make, as deemed necessary, periodic inspections of class IV dams and class III levees, and other dams and levees not otherwise specifically exempted from the inspection provisions of section 1521.062 of the Revised Code.
- (B) The classification of each dam and levee shall be reviewed during each periodic or other inspection and may be changed as a result of such inspection. The classification of the dam or levee shall be determined by the chief in accordance with the criteria established in rules 1501:21-13-01 and 1501:21-13-09 of the Administrative Code.
- (C) The chief may use an inspection report of a dam or levee prepared for the owner by a registered professional engineer in lieu of making a periodic inspection under provisions of paragraph (A) of this rule. The report shall meet the requirements of rules 1501:21-3-02 and 1501:21-21-02 (A) and (B) of the Administrative Code.

Effective: May 24, 2018

#### 1501:21-21-02 Periodic inspection procedures.

- (A) Each periodic inspection shall consist of, but not be limited to, the following:
- (1) Review and analysis of available data on the design, construction, operation, and maintenance of the dam or levee, and its appurtenances;
  - (2) Visual inspection of the dam or levee, its appurtenances, the downstream area, and all other areas potentially affected by the structure;
  - (3) Evaluation of the general conditions of the dam or levee, and its appurtenances which may include assessment of the hydrologic and hydraulic capabilities,

structural stabilities, and any other conditions which constitute or could constitute a hazard to the integrity of the structure;

- (4) Evaluation of operation, maintenance, and inspection procedures for the structure; and
  - (5) Evaluation of the emergency action plan for the structure.
- (B) The findings of the periodic inspection shall be presented in a written report that shall consist of, but not be limited to, the following:
- (1) An assessment of the conditions of the dam or levee based on the visual observations, available data on the design, construction, operation, and maintenance of the structure, and hydrologic, hydraulic, stability, and other evaluations;
  - (2) Recommendations for any emergency measures and/or actions;
  - (3) Recommendations for remedial and corrective measures and/or actions relating to design, construction, operation, maintenance, and inspection of the structure;
  - (4) Recommendations for additional detailed studies, investigations, and analyses; and
  - (5) Recommendations for time periods appropriate for implementing any necessary emergency, remedial, or corrective measures and/or actions, and any necessary additional studies, investigations, or analyses.
- (C) The chief shall furnish a copy of the written report of the periodic inspection to the owner, detailing any required repairs, improvements, maintenance, investigations, studies, analyses, tests, or other remedial measures to the dam or levee needed to safeguard life, health, or property. The chief shall advise the owner of the time period in which all required measures and actions shall be accomplished.

Effective: January 16, 2005

1501:21-21-03 Owner's responsibilities in correcting deficient dams and levees.

- (A) Pursuant to the requirements and/or orders of the chief, the owner shall perform such repairs, improvements, maintenance, investigations, studies, analyses, tests, or other remedial measures to the dam or levee as may be judged by the chief as necessary to safeguard life, health, or property. The owner shall be provided with a reasonable period of time in which to perform such required measures and actions. The severity of the deficiencies and the hazard posed by the dam or levee shall be considered by the chief in establishing the prescribed length of the time period. The cost of all required measures and actions shall be borne by the owner.
- (B) The chief shall advise the owner as to which repairs, improvements, maintenance, investigations, analyses, tests, and other remedial measures to the dam or levee must

be accomplished under the direction of a registered professional engineer as per rule 1501:21-3-02 of the Administrative Code. The owner shall submit to the chief for review and approval three copies each of the plans and specifications, and one design report that includes, but is not limited to, assumptions, references, calculations, and investigations. All plans and specifications shall be prepared in accordance with the provisions of rules 1501:21-5-05 and 1501:21-5-06 of the Administrative Code. The chief shall respond in writing within forty-five days from their date of receipt with either approval, conditional approval, or disapproval, describing any required modifications; however, the review of a critical flood analysis may require up to ninety days.

- (C) Construction of corrective measures to dams and levees shall be accomplished under the inspection of a registered professional engineer and shall be in accordance with the requirements of rules 1501:21-15-01 to 1501:21-15-05 of the Administrative Code, unless otherwise modified by the chief.
- (D) The chief shall advise the owner as to which maintenance, repairs, or other remedial measures of a routine nature are not required to be accomplished under the direction of a registered professional engineer and are not subject to the chief's approval pursuant to division (E) of section 1521.062 of the Revised Code. Routine measures may include, but not be limited to the following: removal of all trees, brush, and weeds; establishment and mowing of grass cover; repair of erosion gullies and rills; repair of rodent holes and burrows; repair of undermining; repair or placement of slope protection; repair of concrete deterioration (cracks less than one quarter of an inch wide or surficial spalling); lubrication and operation of outlet gates; grading the crest to a uniform elevation; and installation/repair of trashracks.

Effective: January 16, 2005

1501:21-21-04 Owner's responsibilities in the operation, maintenance, and inspection of dams and levees.

- (A) Pursuant to the provisions of section 1521.062 of the Revised Code, the owner of a dam or levee shall be responsible for the continued safe operation and use of the structure so that it does not constitute a hazard to life, health, or property.
- (B) The owner of a dam or levee shall prepare a written manual detailing the operation, maintenance, and inspection procedures necessary for the continued safe operation and use of the dam-or levee, and an emergency action plan. The contents of such manual and plan shall be as described respectively in rules 1501:21-15-06 and 1501:21-15-07 of the Administrative Code.
- (C) The emergency action plan shall be updated on at least an annual basis including updating all emergency contact information. The owner shall annually submit to the division and the local county emergency management director updated pages of the emergency action plan.

Effective: May 24, 2018

1501:21-21-05 Removal or correction of unsafe dams and levees.

- (A) If the owner fails to perform such repairs, maintenance, remedial measures, or other measures within the required time period as may have been ordered by the chief, the chief shall so notify the owner of the noncompliance. If the chief's intention is to remove or correct the unsafe structure, at the expense of the owner, pursuant to section 1521.062(G) of the Revised Code, the chief shall so notify the owner in writing. The cost of any such removal or correction, together with a proper description of the owner's property, may be certified by the chief to the county auditor and placed by the county auditor upon the tax duplicate. Such cost is a lien upon such lands from the date of entry and shall be collected as other taxes and returned to the division.
- (B) If the chief is unable to identify the owner of a dam or levee under section 1501:21-3-01(V) of the administrative code, or if an owner identified by the chief denies ownership of the structure, the chief may employ any of the following remedial means pursuant to section 1521.062(H) of the revised code without further notice:
- (1) Lower the water level of the lake or reservoir by releasing water;
  - (2) Completely drain the lake or reservoir;
  - (3) Take such other measures or action as the chief considers necessary to safeguard life, health, and property, including, but not limited to, breaching the dam or levee.

The cost of this remedy shall be recoverable from any person ultimately determined to be the owner of the dam or levee by a court of competent jurisdiction. The chief may continue in full charge and control of such dam or levee until the ownership of the structure can be declared by such court.

Effective: May 24, 2018

**CHAPTER 1501:21-22**  
**The chief's inspection of repair construction**

1501:21-22-01 Inspection procedure.

The chief may make inspections during repair construction as deemed necessary to ensure that the structure is being repaired in compliance with the approved plans and specifications. However, the inspections by the chief do not relieve the owner or the registered professional engineer in charge of the responsibility of providing adequate inspection of the work.

Effective: December 9, 1999

1501:21-22-02 Notice, order, and revocation for noncompliance.

If at any time during the progress of the repair construction the chief finds that the work

is not being performed in accordance with the approved plans, specifications, and changes, the chief may serve a written notice to that effect to the owner or the owner's representative by registered or certified mail. Such notice shall state the particulars in which the work has not complied with the approved plans, specifications, and or changes. The chief may order the immediate compliance with the approved plans, specifications, and changes. As prescribed by rule 1501:21-23-01 of the Administrative Code, each chief's order shall inform the affected party of the hearing and appeal provisions of Chapter 119. of the Revised Code.

Effective: January 16, 2005

1501:21-22-03 Approval of construction by the chief.

Upon receipt of the engineer's certification and the as-built plans required in paragraph (C) of rule 1501:21-21-03 of the Administrative Code, the chief shall within thirty days inspect the completed construction. If the chief finds that construction was completed in accordance with the approved plans, specifications, and changes, the chief shall within fourteen days after inspection approve the construction and notify the owner in writing. If the chief finds that construction was not completed in accordance with the approved plans, specifications, and changes, the chief shall notify the owner of the necessary remedial measures within fourteen days after inspection.

Effective: January 16, 2005

**CHAPTER 1501:21-23**  
**Orders of the Chief**

1501:21-23-01 Orders of the chief.

- (A) All orders of the chief are subject to appeal pursuant to Chapter 119. of the Revised Code. Such an appeal or request for hearing must be filed in strict compliance with the provisions therein specified.
- (B) Notice of a chief's order shall be sent to the affected party by registered or certified mail, return receipt requested, not later than the business day next succeeding such order. Such notice shall state the reasons for the chief's action, cite the law or rule directly involved, and state that the party will be afforded a hearing if requested, in writing, within thirty days of the time of mailing the notice.
- (C) Whenever a party requests a hearing pursuant to provisions of Chapter 119. of the Revised Code, the chief shall immediately set the date, time, and place for such hearing and forthwith notify the party thereof. The date for such hearing shall be within fifteen days, but not earlier than seven days, after the party has requested a hearing, unless otherwise agreed to by both the chief and the party.
- (D) Any party adversely affected by an order of the chief issued pursuant to adjudication may appeal to the court of common pleas of Franklin county. Any such notices of

appeal shall be filed within fifteen days after the mailing of the notice of the chief's order.

(E) The filing of an appeal does not automatically stay the effectiveness of the orders of the chief, and until such time as the orders are reversed or otherwise declared unlawful, or a stay of the orders is granted by a court of competent jurisdiction, the orders shall remain in full force and effect.

Effective: January 16, 2005

## **CHAPTER 1501:21-24**

### **Annual fee**

1501:21-24-01 The annual fee.

The fee schedule for the annual fee established by section 1521.063 of the Revised Code shall be as follows:

- (A) For any dam classified as a class I dam under rule 1501:21-13-01 of the Administrative Code, three hundred dollars plus ten dollars per foot of height of dam, eight cents per foot of length of the dam, and eight cents per acre-foot of total storage volume impounded by the dam.
- (B) For any dam classified as a class II dam under rule 1501:21-13-01 of the Administrative Code, ninety dollars plus six dollars per foot of height of dam, eight cents per foot of length of the dam, and eight cents per acre-foot of total storage volume impounded by the dam.
- (C) For any dam classified as a class III dam under rule 1501:21-13-01 of the Administrative Code, ninety dollars plus four dollars per foot of height of dam, eight cents per foot of length of the dam, and eight cents per acre-foot of total storage volume impounded by the dam.

For purposes of this rule, height of dam is the vertical height, to the nearest foot, as determined by the division under section 1521.062 of the Revised Code. For purposes of this rule, length of the dam is the horizontal dimension as measured along the crest of the dam from natural abutment to natural abutment as determined by the division. Spillway systems over the dam but not in the abutment area are included in the length determination. For upground reservoirs the length is the continuous distance around the crest of the dam. For purposes of this rule, total storage volume impounded by the dam is the total volume of water or other liquefied material impounded when the pool level is at the top of the dam immediately before it is overtopped, to the nearest acre-foot with a maximum of seven thousand acre-feet, as determined by the division.

Effective: May 24, 2018

1501:21-24-02 Compliant Dam Discount

The compliant dam discount program established by section 1521.063 of the Revised Code shall be administered as follows:

- (A) The owner of the dam shall receive an annual ten per cent discount, to the nearest dollar, off the annual fee if the dam has an approved and up-to-date emergency action plan in accordance with rule 1501:21-21-04. In order to maintain the discount, the owner must submit the emergency action plan update required by rule 1501:21-21-04 to the chief by June 30 of each year.
- (B) The owner of the dam shall receive an annual fifteen per cent discount, to the nearest dollar, off the annual fee if the dam is in good condition and meets all requirements deemed necessary by the chief in accordance with rule 1501:21-21-04. For purposes of this discount, the chief will evaluate the condition of the dam at each periodic inspection as required by rule 1501:21-21-01 or more frequently as necessary. The dam owner will provide whatever documentation is necessary to verify the condition of the dam.
- (C) The discounted amount shall be reflected on the annual invoice sent to the dam owner.
- (D) If the annual fee is not paid within sixty days following the statutory due date, the full amount of the fee plus penalty and interest is owed as established by section 1521.063 of the Revised Code.

Effective: May 24, 2018