

Readopt with amendment Env-Wr 300 through Env-Wr 700, eff. 1-22-14 (Document #10510), to read as follows:

CHAPTER Env-Wr 300 EXISTING DAMS

PART Env-Wr 301 PURPOSE AND APPLICABILITY

Env-Wr 301.01 Purpose. The purpose of this chapter is to ensure that existing dams are maintained in a manner so that public health, safety, and the environment are protected.

Env-Wr 301.02 Applicability. ~~(a) Subject to (b), below, +~~The requirements in this chapter shall apply to:

~~(a)(1)~~ ***(a)(1)*** Any structure which qualifies as a dam in accordance with RSA 482:2, II ***and that is not regulated by the Federal Energy Regulatory Commission;*** and

~~(b)(2)~~ ***(b)(2)*** Any roadway culvert ***that does not*** meeting the ~~requirements~~***parameters*** of Env-Wr 301.03.

~~(b)~~ The requirements in this chapter shall apply to a dam regulated by the Federal Energy Regulatory Commission (FERC) pursuant to the Federal Power Act, 16 U.S.C. Chapter 12, Subchapter I, only when they do not conflict with rules, standards, protocols, licenses, certificates, or orders promulgated by the FERC pursuant to that authority.

Env-Wr 301.03 Roadway Culverts.

(a) A roadway embankment whose culvert is ***placed along the natural bed elevation of the stream set at the natural streambed*** shall ***not*** be considered a dam if during the 25-year storm-design event: ~~(a) The the~~ water surface elevation at the culvert inlet is ***less than 6*** feet ~~or more~~ above the water surface elevation at the culvert outlet. ~~;~~ ***and***

(b) It impounds ~~2 acre feet or more of water over the crown, or top, of the culvert.~~ ***If additional culverts exist though the roadway embankment their capacity(ies) may be used to determine the water surface elevation during the 25-year design event.***

PART Env-Wr 302 DAM INSPECTIONS; REPAIRS; ALTERNATIVES TO REPAIR

Env-Wr 302.01 Dam Inventory. The department shall maintain an inventory of all ***jurisdictional*** dams in the state as to ownership, height, location, and hazard classification.

Env-Wr 302.02 Dam Inspections.

(a) The department shall inspect dams in accordance with the following frequency:

(1) Low hazard structures shall be inspected at least once every 6 years;

(2) Significant hazard structures shall be inspected at least once every 4 years; ***and***

(3) High hazard structures shall be inspected at least once every 2 years. ~~;~~ ***and***

~~(4) Non-menace structures having a height of 25 feet or more or having a storage capacity of 50 acre feet or more shall be inspected at least once every 6 years.~~

(b) An individual may request the department to inspect any dam by putting such request in writing to the department ***or provided by electronic mail to: damsafety@des.nh.gov.***

~~(e) The written request for inspection shall include:~~

- ~~(1) The location of the dam or water body on which the dam is located;~~
- ~~(2) The name, mailing address, and daytime telephone number of the owner, if known; and~~
- ~~(3) A statement explaining why the requestor believes the dam should be inspected.~~

~~(d)~~**(c)** The department shall review the request and any other available information on the dam. ~~If the department determines that public safety *circumstances* requires the dam to be inspected, the department and~~ shall schedule an inspection of the dam.

Env-Wr 302.03 Repairs Required.

(a) Subject to (c), below, if the department determines as a result of an inspection that repairs or reconstruction to a dam are needed to maintain the dam in a safe condition, it shall notify the owner in writing of such repairs or reconstruction as are necessary and request the owner to undertake such repairs within the time period specified in the notice.

(b) If the owner does not undertake the needed repairs or reconstruction within the time period indicated in a notice sent pursuant to (a), above, the department shall proceed under RSA 482:12 to order the owner to undertake the repairs or reconstruction.

(c) The department shall not issue a request but instead shall directly issue an order requiring repairs or reconstruction if:

- (1) The condition of the dam poses an imminent threat to public safety; or
- (2) The owner of the dam has been non-responsive to department requests relating to ~~other~~ compliance issues.

Env-Wr 302.04 Alternatives to Repairing or Reconstructing a Dam.

(a) In lieu of repairing or reconstructing a dam as required pursuant to Env-Wr 302.03, the owner may:

- (1) Remove the dam in accordance with ***chapter*** Env-Wr 600; or
- (2) ~~Breach or m~~Modify the dam in accordance with Env-Wr 302.05.

(b) Such removal, ~~breach,~~ or modification shall be equivalent to complying with Env-Wr 302.03. ~~the repair or reconstruction order.~~

Env-Wr 302.05 ~~Controlled Breach; Modifications to Lower Impoundment~~ ***Removal of a Dam From Jurisdiction.***

(a) The owner may request approval from the department to ~~perform a controlled breach or to modify the dam so that the impoundment is lowered to a level that is safe for the dam.~~ ***it no longer meets the definition of a dam in accordance with RSA 482:2, II.***

(b) To request approval for ~~a controlled breach or modification,~~ the owner shall submit the following information in writing to the department:

- (1) The name, mailing address, ***email address*** and daytime telephone number of the owner;

- (2) The date of the department's ~~order~~ ***directive*** to repair, ~~or reconstruct~~ ***or remove*** the dam, if any, and if none, the:
 - a. Tax map and lot number of the property on which the dam is located;
 - ~~b. Location of the dam on the applicable USGS Quadrangle map;~~
b. A description of the specific location of the dam;
 - c. Name of the stream, river, or other water body on which the dam is located, if applicable;
 - d. Reason(s) for the proposed ~~breach or~~ modification; and
 - e. Hazard classification of the dam;
 - ~~(3)~~ The amount of water currently impounded by the dam, in acre feet;
 - ~~(4)~~ Whether the request is for a controlled breach or other modification;
 - ~~(5)~~**(3)** A detailed explanation of the specific work that will be performed, including anticipated ***inflows and outflows*** during the work and the effect of such flows on upstream and downstream property and ***any potential*** public safety ***concerns***;
 - ~~(6)~~**(4)** The name(s), mailing address(es), ***email address(es)*** and daytime telephone number(s) of the person(s) proposed to perform the work; and
 - ~~(7)~~**(5)** A proposed schedule for the work, which shall include time for the notice and hearing required by RSA 482:13, as applicable.
- (c) The department shall approve the ~~proposed breach or~~ modification if the department determines that:
- (1) The proposed ~~breach or~~ modification will cause the structure to no longer meet the definition of a dam; and
 - (2) The work will be performed in a manner that will not cause flows that would result in property damage or threaten public safety upstream or downstream of the dam.
- (d) If the department determines that after the ~~proposed breach or~~ modification the structure will still meet the definition of a dam, the department shall ~~approve~~ ***require the submission of an application to reconstruct a dam; and approval of*** the ~~breach or~~ modification of the dam ***shall be given*** provided that:
- (1) The work will be performed in a manner that will not cause property damage or threaten public safety upstream or downstream of the dam;
 - (2) The threat posed to life or property after completion of the work is no more than it would have been if the work required by the department pursuant to Env-Wr 302.03 had been completed, if applicable; and
 - (3) The requirements of ~~Env-Wr 303.11~~ ***Env-Wr 303.10*** relative to discharge capacity will be met as a result of the proposed work.
- Env-Wr 302.06 Notification to Public. After receiving approval pursuant to ***Env-Wr 302.03 through*** Env-Wr 302.05, the owner shall refrain from undertaking the work until the requirements of ***RSA 211:11 relative to notification to NH fish and game department,*** and RSA 482:13, ~~as applicable,~~ relative to notice to municipalities ~~and hearing~~ have been met, ***as applicable.***

PART Env-Wr 303 REQUIREMENTS FOR EXISTING DAMS

Env-Wr 303.01 Annual Registration Fee.

(a) Pursuant to RSA 482:8-a, annual registration fees for dams in the amount specified in RSA 482:8-a shall be payable to the department by January 1 of each calendar year.

(b) The department shall send a written notice, by October 31 of each year, to each owner specifying the amount of the registration fee that shall be due.

(c) The department shall send a second notice to each owner who fails to submit the annual registration fee by January 1. Such notice shall inform the owner that the payment is overdue and that if the owner fails to submit the registration fee within 10 days, the owner shall be subject to the penalties authorized by RSA 482:89.

~~(d) Notices sent pursuant to (b) and (c), above, shall include whatever information the department has relative to the tax map and lot number of the dam and the volume and page number of the deed to the dam and to the property on which the dam is located, if different. At the time of paying the annual registration fee, the owner shall confirm or, if necessary, provide or correct the information.~~

Env-Wr 303.02 Review of Hazard Classification

(a) The department shall review the classification of a dam in conjunction with any inspection conducted pursuant to Env-Wr 302.02.

(b) Classifications for all dams will be determined by the impacts caused by modeling the failure occurring at the peak reservoir levels associated with sunny-day, 50-year and 100-year base flow conditions. The breach parameters used shall conform to Table 5.1 and Figure 5.1 as contained within Env-Wr 502.04;

~~(b)~~***(c) If the department determines that a dam no longer meets the criteria of the class to which it had been assigned, the department shall reassign the dam to the proper classification of a dam as defined in Env-Wr 101.07.***

~~(c)~~***(d) Upon*** ~~If~~ reassigning a dam to a different classification, the department shall notify the owner in writing of:

- (1) The new classification; and
- (2) Any new requirements that might apply as a result of the reclassification.

Env-Wr 303.03 Appeal of Classification.

(a) If the owner disagrees with the department's decision to reclassify a dam's hazard classification, the owner may request that the department reconsider the decision.

(b) To request reconsideration, the owner shall submit a written request ***by first-class mail*** to the department ***or via email to: damsafety@des.nh.gov***, that includes the following:

- (1) The name, mailing address, ***email address***, and daytime telephone number of the owner;
- (2) The ***state dam inventory*** number assigned by the department, if known, and if not known, the location of the dam by.
 - a. Tax map and lot number of the property on which the dam is located;
 - ~~b. Location of the dam on the applicable USGS Quadrangle map; and~~

b. A description of the specific location of the dam; and

c. Name of the stream, river, or other water body on which the dam is located, if applicable.;

(3) The results of a ***an independent dam breach*** analysis, ~~including routing of the flow downstream of the dam, completed in accordance with Env-Wr 502~~ ***conducted using the parameters found in Env-Wr 303.02(b) and Env-Wr 502.04***; and

(4) An assessment of all structures potentially impacted by a dam failure, ***including maximum calculated*** the depth of flooding at critical structures or groups of structures.

(c) If the department determines that the information requested in (b) is insufficient to grant the requested reconsideration, the department shall:

(1) Deny the request ***in writing and provide the reasons for the denial***; or

~~(2) If the department believes that a favorable decision might be made if inundation mapping is provided, request the owner to provide inundation mapping completed in accordance with Env-Wr 503.01;~~

(2) Request that the owner resubmit the request and provide additional information for consideration.

(d) The department shall notify the owner of its decision in writing within ~~60-120~~ days of receiving ***a complete information submittal***.

~~Env-Wr 303.04 Dam Monitoring.~~

~~(a) The owner of a low hazard, significant hazard, or high hazard dam, or the owner's designee, shall monitor the dam in accordance with this section.~~

~~(b) The dam monitor shall:~~

~~(1) Be trained in the operation of the dam;~~

~~(2) Be trained to detect and assess conditions that could affect the safety of the dam;~~

~~(3) Have authority from the owner to operate the structure during emergency situations;~~

~~(4) For a significant hazard or high hazard dam, be available at the dam within 2 hours at all times; and~~

~~(5) For a low hazard dam, be available at the dam within 2 hours during periods of heavy precipitation, high water levels, or receipt of notification of other events that could threaten the structural integrity of the dam.~~

~~(c) The owner of a low hazard, significant hazard, or high hazard dam shall provide:~~

~~(1) A communication system between the monitor and the local communities; and~~

~~(2) The means, materials, and equipment needed to make emergency repairs to the structure.~~

~~(d) The owner of a significant hazard or high hazard dam also shall provide the training and equipment, including alternative power sources, necessary to operate the structure.~~

Env-Wr 303.05~~303.04~~ Operation, and Maintenance ~~Plan~~ ***and Response Form***.

(a) The owner of a low hazard, significant hazard, or high hazard dam shall ***complete and*** submit a ~~written operation and maintenance plan for approval by the department~~ ***the "Operation, Maintenance and Response Form" (OMRF) NH-DES-W-02-010, December 2023,*** to the department available at <https://onlineforms.nh.gov/?formtag=NHDES-W-02-010>.

~~(b)~~ The operation and maintenance plan shall:

~~(1)~~ Describe the seasonal control of impoundment water levels;

~~(2)~~ Describe regular maintenance activities; and

~~(3)~~ Identify the name(s) and address(es) of the dam monitor(s) required by Env-Wr 303.04 and any other emergency contacts for operation of the dam that the owner wishes to designate.

~~(c)~~ The department shall approve the plan if:

~~(1)~~ The information submitted addresses the items specified in (b), above; and

~~(2)~~ Compliance with the submitted plan will result in a dam that will be operated safely during all flow conditions and not become a dam in disrepair.

~~(d)~~***(b)*** The owner shall ***review and*** update the ~~operation and maintenance plan~~ ***OMRF*** as necessary, ***but no less frequently than after each periodic inspection conducted by the department,*** and shall submit a ~~written update either an updated form or a statement~~ to the department within 15 days of ***completing the review,*** ***indicating that the current form remains accurate*** any changes;

~~(e)~~ An owner that is required to complete an emergency action plan ("EAP") pursuant to Env-Wr 303.06 may incorporate the operation and maintenance plan as an appendix to the EAP.

~~(f)~~***(c)*** The owner shall operate and maintain the dam in accordance with the ***submitted*** ~~approved operation and, maintenance plan~~ ***OMRF and in the best interest of public safety.***

Env-Wr 303.06~~303.05~~ Emergency Action Plan Required.

(a) As required by RSA 482:11-a, the owner shall develop an emergency action plan (EAP) for any dam, ***where*** the failure of which may threaten life or property.

(b) ***In order to facilitate the development of an EAP, the owner may use the EAP template found at the following link:*** <https://www.des.nh.gov/climate-and-sustainability/storms-and-emergencies/dam-emergency-action-plans>.

~~(b)~~***(c)*** The owner of a significant hazard or high hazard dam shall develop an EAP in accordance with Env-Wr 500.

~~(e)~~ The ~~operation and, maintenance~~ ***OMRF*** plan prepared ***completed and submitted*** by the owner of a low hazard dam ***pursuant to Env-Wr 303.04,*** shall constitute the EAP for that dam.

Env-Wr 303.07 ***303.06*** Dam Repair and Reconstruction.

(a) Pursuant to RSA 482:9, the owner shall not initiate, or authorize anyone else to initiate, work on a dam which qualifies as reconstruction without first obtaining a permit from the department pursuant to Env-Wr 400.

~~(b) The owner may undertake repairs other than those qualifying as reconstruction without prior department approval.~~

(b) The owner shall consult with the department on any potential modifications or repairs to determine if they meet the definition of reconstruction pursuant to RSA 482:2, X.

(c) An owner wishing to ~~perform a controlled breach or otherwise~~ modify the dam to lower the impoundment to a safe level ***so that the impoundment is lowered to a level that reduces potential downstream impacts related to failure and is safe for the dam,*** shall proceed in accordance with Env-Wr 302.05.

Env-Wr ~~303.08~~***303.07*** Transfer of Ownership.

(a) The owner shall provide the ***following*** information ~~specified in (b), below,~~ to any prospective owner prior to transferring:

~~(1) Title to the dam; or~~

~~(2) If ownership of the dam is tied to ownership of the property, the property on which the dam is located.~~

~~(b) The owner shall provide the following information:~~

~~(1) The existence of the dam;~~

(1) Any and all deeds, easements, agreements, or other rights associated with the dam;

(2) The ***state dam inventory*** number assigned by the department; ~~and~~

(3) Any letters or orders issued by the department relative to the condition of the dam; ***and***

(4) The existing OMRF.

~~(e)~~***(b)*** Within 30 days of the transfer of ownership of a dam or the property on which a dam is located, the new owner shall inform the department in writing of the transfer of ownership by providing the following ~~information:~~

(1) The name of the former owner;

(2) The ***state dam inventory*** number assigned by the department;

(3) The name, mailing address, ***email address*** and daytime telephone number of the new owner;

(4) The tax map and lot number of the dam; ~~and~~

(5) The volume and page number of the deed which transferred ownership of the dam or the property on which the dam is located;;

(6) An updated "Operation, Maintenance and Response Form" in accordance with Env-Wr 303.04, if the dam is classified as low, significant, or high hazard; and

(7) An updated EAP, if one is required for the dam, in accordance with Env-Wr 500.

Env-Wr ~~303.09~~ ***303.08*** Emergency Breach.

(a) An owner may purposefully breach a dam without prior approval from the department only when a threat to public safety or public health exists or significant damage to public or private property is imminent.

(b) The owner shall notify the department and the local ***emergency management director***, police, and fire departments ***and activate the EAP*** prior to performing an emergency breach, if possible.

(c) If it is not possible to ~~notify the department and local police and fire departments prior to performing an emergency breach~~ ***meet the requirements of (b), above***, the owner shall make such notifications as soon as reasonably possible, but never more than one hour after the initiation of the emergency breach.

(d) Within ~~30~~ ***24 hours*** days of performing an emergency breach, the owner shall ~~submit an application to the department~~ ***confirm with the department that the dam has been stabilized and no longer poses a hazard risk.***

~~(1) To reconstruct the dam in accordance with Env-Wr 400, indicating whether the owner plans to further modify or rebuild the dam; or~~

~~(2) To remove the dam in accordance with Env-Wr 600.~~

(e) Within 90 days of performing an emergency breach, the owner shall file a letter of intent with the department which indicates whether the dam will be:

(1) Reconstructed as defined in RSA 482:2, X and Env-Wr 400: or

(2) Removed in accordance with chapter Env-Wr 600.

Env-Wr ~~303-10~~ ***303.09*** Other Emergency Measures.

(a) An owner may take measures which otherwise would require a permit to reconstruct a dam, other than emergency breaches, when it is necessary to do so in order to eliminate or reduce the risk of full or partial dam failure. Emergency repairs shall be limited to temporary stabilization of the site or mitigation of the immediate threat.

(b) The owner shall notify the department prior to taking such measures if possible but never more than 24 hours after the initiation of necessary repairs.

(c) Within 48 hours of completing the emergency repairs, the owner shall submit a written statement to the department that explains the nature of the emergency and what corrective measures were taken.

(d) Within ~~30~~ ***90*** days of performing the emergency ~~repairs~~ ***measure***, the owner shall ~~submit an application to the department to reconstruct a dam in accordance with Env-Wr 400~~ ***file a letter of intent with the department which indicates whether the dam will be:***

(1) Repaired if not reconstructed as defined in RSA 482:2, X;

(2) Reconstructed in accordance with RSA 482:2, X and Env-Wr 400; or

(3) Removed in accordance with chapter Env-Wr 600.

Env-Wr ~~303-11~~ ***303.10*** Discharge Capacity.

(a) All low hazard, significant hazard, or high hazard dams constructed prior to February 19, 1981 shall pass the flows indicated below with one foot of freeboard and without manual operations:

(1) Low hazard dams shall pass a 50-year ***design event*** flood, ~~or at the owner's option, the site specific inflow design flood;~~

(2) Significant hazard dams shall pass the 100-year ***design event*** flood, ~~or at the owner's option, the site specific inflow design flood;~~ and

(3) High hazard dam shall pass ~~250% of the 100-year flood~~ ***the 1,000-year design event***, or at the owner's option, the site specific inflow design flood ***approved by the department***.

(b) ~~All Dams~~ constructed after February 19, 1981 shall pass the flow required by the administrative rules in place at the time of the dam's construction, in accordance with the classification of the dam at the time of construction, ***or at the owner's option, the requirements in Env-Wr 303.10(a) above***.

Env-Wr ~~303.12~~ ***303.11 Meeting Discharge Capacity Requirements***.

(a) If a dam does not have adequate discharge capacity to pass the ~~flood-design event~~ specified in ~~Env-Wr 303.11~~ ***Env-Wr 303.10*** with one foot of freeboard, the owner shall submit a plan to the department to address the deficiency.

(b) The plan submitted pursuant to (a), above, shall:

(1) Specify the action to be taken, per (c), below; ***and***

~~(2) Specify the proposed timeframe for taking the action; and~~

~~(3)~~(2) Include the results of ***existing and proposed*** hydrologic ***and hydraulic*** analyses completed pursuant to Env-Wr 403.05 ***and Env-Wr 403.06***, assessing the ~~floods-design event~~ and discharge capacity of the structure.

(c) The plan shall specify which of the following actions the owner intends to pursue:

(1) Increase the capacity of the dam to pass the ~~flood-design event~~ with ***at least*** one foot of freeboard and without manual operations;

(2) Submit a stability analysis to the department showing that the dam is safe against sliding ***or*** ; overturning, or ~~erosion by overtopping~~ ***other failure mode***, as applicable, during the ~~specified flood design event pursuant to Env-Wr 303.10~~, using the methods outlined in "Engineering Guidelines for Evaluation of Hydropower Projects" published by the Federal Energy Regulatory Commission (FERC), Chapter 3 dated ~~2002~~ ***2016***, and Chapter 4 dated ~~1991~~ ***2006***, available as noted in Appendix B;

(3) Submit a stability analysis to the department showing that the dam is safe against erosion by overtopping during the design event pursuant to Env-Wr 303.10;

~~(3)~~(4) Stabilize the dam so that it is safe under the specified ~~flood conditions~~ ***design event***; or

~~(4)~~(5) Modify the dam so that the hazard classification is ~~lowered~~ ***reduced*** and the dam passes the ~~appropriate flow for~~ ***design event applicable to*** the new classification.

(d) The department shall approve the plan if the department determines that:

(1) The proposed action will bring the dam into compliance with ~~Env-Wr 303.11~~ ***Env-Wr 303.10***;

(2) The work can be done in a way that will not ~~endanger~~ ***endanger*** life or property downstream of the dam; ~~or~~; ***and***

~~b. Cause environmental losses that are not reversible environmental losses; and~~

(3) The time frame for the work is reasonable under the circumstances, including the risk posed by the deficiency, the owner's financial resources, and the timing of the work in relation to other uses of the impounded water.

(e) The department shall notify the owner in writing of its decision. If the plan is not approved, the notice shall specify the reason(s) for ~~the non-approval~~ ***denial***.

(f) If work under the plan as approved constitutes reconstruction of the dam, the owner shall submit an application ***for dam reconstruction*** in accordance with ***chapter*** Env-Wr 400.

Env-Wr ~~303.13~~ ***303.12*** Request for Time Extension.

(a) An owner may request a time extension to comply with any directive of the department issued pursuant to RSA 482:12.

(b) The request shall be submitted in writing to the department with the following information:

- (1) The reason(s) why an extension is needed;
- (2) The current status of the repairs or investigations; and
- (3) The length of time of extension requested.

(c) The department shall grant the request for time extension if it determines that ***the information provided in (b), above, is reasonable, and:***

- ~~(1) The owner has in good faith pursued the work required by the directive;~~
- ~~(2) The owner is unable to complete the work during the time period specified;~~
- ~~(3)~~***(1)*** The current condition of the dam is such that it is not expected to fail under flow conditions anticipated during the extension; and
- ~~(4)~~***(2)*** The condition of the dam will not deteriorate so as to pose a threat to public safety under flow conditions anticipated during the extension.

(d) The department shall notify the owner of the decision on the request in writing. If the department denies the request, the department shall state the reason(s) for the denial.

Env-Wr ***303.13*** ***Maintenance and Operation of Low, Significant, and High Hazard Dams.***

(a) Owners of low, significant, and high hazard dams shall undertake the following maintenance activities aimed at promoting dam stability, and safe and consistent operating conditions:

- (1) Remove brush, trees and woody growth from the dam, embankment and/or spillway and 15 feet beyond the footprint of the dam. Stumps shall be cut flush to the ground. No trees or large vegetation shall be planted within 15 feet of the footprint of the dam;***
- (2) Maintain and inspect gate components, valves, flashboards, and other mechanical equipment associated with operation of the dam;***
- (3) Exercise any gate that is used to routinely control water levels;***
- (4) Maintain adequate and suitable vegetation or other erosion-resistant ground cover to prevent the erosion of the earthen portions of the dam;***
- (5) Control, remove, and exterminate rodents, and repair related damage;***
- (6) Repair earthen embankments, vegetated spillways, and abutments to be free of erosion, depressions, sinkholes, or other deficiencies;***

(7) ***Maintain the crest by:***

- a. ***Maintaining a stable base that resists rutting or other damage from routine use and provides for safe access to operate and maintain the dam;***
- b. ***Maintaining adequate grade control to prevent ponding and the concentration of surface runoff to unprotected areas; and***
- c. ***Grading the crest to eliminate settled areas, depressions, and potholes by filling them with properly compacted material. Grading activities shall not result in raising or lowering the overall crest elevation.***

(8) ***Maintain the intake of horizontal orifices to be free of debris by:***

- a. ***Installing a trash rack or grates which shall be sloped or domed and not flat;***
- b. ***Incorporating a bar opening or bar spacing that shall be adequate to efficiently pass smaller debris through the outlet system, but prevent larger debris from entering and clogging the system.***

(9) ***Repair concrete, wood, metal, and other materials.***

PART Env-Wr 304 NON-PERMITTED EXISTING DAMS

Env-Wr 304.01 Application to Permit Existing Dam.

(a) When the department gains knowledge of the existence of a non-permitted dam, either by its own reconnaissance or by reports of others, it shall send a letter by certified mail to the owner of the property on which the dam is located stating the non-permitted status of the dam and the requirements with which the owner shall comply.

(b) The department shall include with the letter an ~~“application to permit an existing dam”~~ ***“Application for Permit of an Existing Dam Application,” NHDES-W-02-002, December 2023, available at: <https://onlineforms.nh.gov/?formtag=NHDES-W-02-002>, and a copy of RSA 482:5.***

(c) Upon written notice from the department that an existing dam is non-permitted, the owner, ***working in conjunction with the department,*** shall file the ***application referenced in (b) above, and the following information:*** ~~following information on or with, as applicable, the permit application form:~~

- ~~(1) The height and length of the dam, in feet;~~
- ~~(2) (1) The volume and page number at the county registry of deeds of the deed to the dam and of the property on which the dam is located, if different;~~
- ~~(3) The tax map and lot number of the property on which the dam is located;~~
- ~~(4) (2) The location of the dam on the applicable USGS Quadrangle map;~~
- ~~(5) The name of the stream, river, or water body on which the dam is located, if applicable;~~
- ~~(6) The type and purpose of the dam;~~
- ~~(7) A description of the dam foundation material;~~

~~(8) The size of the drainage area, normal pond area, maximum pond area, normal storage capacity, and maximum storage capacity of the dam;~~

~~(9) (3) An operation and maintenance plan~~ ***"Operation, Maintenance and Response form*** prepared as specified in ~~Env-Wr 303.05~~ ***Env-Wr 303.04***;

~~(10) (4) Plans and specifications which shall, at a minimum, include the following:~~

a. A scaled plan view;

b. A scaled cross-section view of the dam through the outlet, showing elevations of pipe inlet and outlet, if applicable, watertight connections, and embankment material; ~~and~~

c. Design and cover of embankment slopes; ~~and~~

~~(11) The name, address, and daytime telephone number of the owner.~~

(5) An engineer's resume as required by Env-Wr 403.03;

(6) The results of any subsurface explorations;

(7) The results of any structural analyses, with may include but not limited to, stability analyses for overturning, sliding, and slope failure;

(8) The results of hydrologic and hydraulic calculations, which show that the dam has the capacity to safely discharge the design storm with 1 foot freeboard without manual operations;

(9) A document that proves ownership of flowed land or flowage rights pursuant to Env-Wr 402.02(c)(2);

(10) The results of a seepage analysis for significant and high hazard dams, if applicable;

(11) An EAP for significant and high hazard dams, if applicable; and

(12) Construction plans and specifications.

(d) Within 30 days of receipt of the permit application, the department shall inspect the dam and areas potentially affected by a failure of the dam for conditions and factors affecting the hazard potential classification and determine whether repair or reconstruction of the dam is required to comply with applicable laws and regulations related to dams.

~~(e)~~***(e)*** The owner shall include the following with the application:

(1) The fee required by RSA 482:9, II; and

(2) A statement that the owner has legal flowage rights on all lands which will be permanently or temporarily flooded by the dam and an indication of whether those rights are fee simple ownership, a flowage easement, prescriptive rights, or mill privileges.

~~(e)~~***(f)*** The owner shall sign the application and the statement required by ~~(e)(2)~~***(e)(2)***, above, if such statement is separate from the application.

~~(f)~~***(g)*** The owner's signature shall constitute certification that the information provided is true and complete to the knowledge and belief of the owner.

~~(g)~~***(h)*** The owner shall return the completed permit application within ~~30~~***60*** days of receiving the letter sent pursuant to (a), above.

~~Env-Wr 304.02 Inspection. Within 30 days of receipt of the permit application, the department shall inspect the dam and area affected by the dam for conditions and factors affecting the hazard potential classification, and determine whether repair or reconstruction of the dam is required for the public safety.~~

Env-Wr ~~304.03~~***304.02*** Notice to Municipality.

(a) Pursuant to RSA 541-A:39, when the department receives an application to permit a non-permitted dam, the department shall issue a notice to the municipality in which the dam is located to invite the municipality to submit data or information pertaining to the department's assessment of the dam's potential hazard. If the department receives such correspondence within ~~20~~***30*** days of the town's receipt of the notice, it shall consider the information in issuing a permit.

~~(b) For structures that are likely to be classified as significant hazard or high hazard, the department shall notify the municipality in which the structure is located and any municipalities which could be affected by a failure of the structure of a public hearing to be held by the department in the municipality in which the dam is located or in a municipality which could be affected by a failure of the structure. At the public hearing, the owner shall present information about the dam and a draft emergency action plan, and the department shall receive comment from the public.~~

Env-Wr ~~304.04~~***304.03*** Issuance of Permit. Subject to Env-Wr 304.05, the department shall issue a permit for the dam pursuant to RSA 482:5 if:

(a) The application is complete, including all information required by Env-Wr 304.01;

(b) The department has determined that the dam's condition is such that it does not pose an imminent threat to public safety; and

(c) Issuance of the permit is consistent with RSA 482:1.

Env-Wr ~~304.05~~***304.04*** Limitations on Permit Issuance.

(a) A permit for a significant hazard or high hazard non-permitted dam built on or after July 25, 2000 shall be issued only if the dam meets the criteria established in RSA 482:9, V.

(b) A permit for a dam on a great pond shall be issued only in accordance with RSA 482:6.

CHAPTER Env-Wr 400 CONSTRUCTION OR RECONSTRUCTING A DAM

PART Env-Wr 401 PURPOSE AND APPLICABILITY

Env-Wr 401.01 Purpose. The purpose of this chapter is to implement RSA 482:9 by specifying the procedures for applying for a permit to construct or reconstruct a dam.

Env-Wr 401.02 Applicability.

(a) Subject to (b), below, the requirements in this chapter shall apply to any person who:

(1) Plans to construct or reconstruct a structure that qualifies as a dam pursuant to Env-Wr 301.02;
or

(2) Has taken emergency measures as specified in ~~Env-Wr 303.09~~***Env-Wr 303.08*** or ~~Env-Wr 303.10~~***Env-Wr 303.09***.

(b) The requirements in this chapter shall ***not*** apply to a dam regulated by the Federal Energy Regulatory Commission (FERC) pursuant to the Federal Power Act, 16 U.S.C. Chapter 12, Subchapter I, ~~only when they do not conflict with rules, standards, protocols, licenses, certificates, or orders promulgated by the FERC pursuant to that authority.~~

PART Env-Wr 402 APPLICATION PROCEDURES

Env-Wr 402.01 Application Filing.

(a) An ***"Application for Permit to Construct or Reconstruct a Dam" form, NHDES-W-02-001, December 2023, available at <https://onlineforms.nh.gov/?formtag=NHDES-W-02-001>***, application to ~~construct a dam~~ shall be filed by the owner(s) of the ***dam, and the owner(s) of the*** property, ***if different than the dam owner,*** on which the dam is proposed to be located.

(b) An application to ~~reconstruct a dam, including an application~~ relative to emergency measures pursuant to ~~Env-Wr 401.02(a)(2)~~***Env-Wr 303.08 and Env-Wr 303.09***, shall be filed by the owner(s) of the dam.

Env-Wr 402.02 Content of Application.

~~(a) The applicant shall submit a completed "application to construct or reconstruct a dam" form to the department.~~

~~(b)~~***(a)*** The applicant shall provide the following information ~~on or~~ with the ***application form required in Env-Wr 402.01(a) above:***

~~(1) The name, mailing address, and daytime telephone number of each applicant;~~

(1) A statement that the owner has legal flowage rights on all lands which will be permanently or temporarily flooded by the dam and whether those rights are fee simple ownership, a flowage easement, prescriptive rights, or mill privileges;

(2) The volume and page number of the deed for the property on which the dam is or is proposed to be located and, for an existing dam that was conveyed separately from the property, the volume and page number of the deed for the dam;

~~(3) The~~***A description of the specific*** location of the existing or proposed dam ~~on the applicable USGS Quadrangle map;~~

~~(4) The city/town tax map number and lot number for the property on which the dam is or is proposed to be located;~~

~~(5) The name of the stream, river, or other water body on which the dam is or will be located, if applicable;~~

~~(6) The height and length of the existing or proposed dam;~~

~~(7) The type and purpose of the existing or proposed dam;~~

~~(8) A description of the type of existing or proposed foundation material;~~

(4) The corresponding wetlands dredge/fill file number, if applicable;

~~(9)~~**(5)** The size of the drainage area, normal pond area, maximum pond area, normal storage capacity, and maximum storage capacity of the existing or proposed dam; and

~~(10)~~ A plan and cross-section sketch of proposed dam.

(6) An OMRF prepared as specified in *Env-Wr 303.04*;

(7) An engineer's resume as required by *Env-Wr 403.03*;

(8) The results of any subsurface explorations;

(9) The results of any structural analyses, with may include but not limited to, stability analyses for overturning, sliding, and slope failure;

(10) The results of hydrologic and hydraulic calculations, which show that the dam has the capacity to safely discharge the design storm with 1 foot freeboard without manual operations;

(11) A document that proves ownership of flowed land or flowage rights pursuant to *Env-Wr 402.02(c)(2)*;

(12) The results of a seepage analysis for significant and high hazard dams, if applicable;

(13) An EAP for significant and high hazard dams, if applicable; and

(14) Construction plans and specifications.

~~(e)~~**(b)** The owner shall include the following with the application:

(1) The fee required by RSA 482:9, II; ~~and~~

~~(2)~~ A statement that the owner has legal flowage rights on all lands which will be permanently or temporarily flooded by the dam and an indication of whether those rights are fee simple ownership, a flowage easement, prescriptive rights, or mill privileges.

(2) Preliminary plans, specifications and other documentation related to the construction or reconstruction; and

(3) Deeds, easements, rights or agreements associated with the dam and the property on which the dam is located, if applicable.

~~(d)~~ All forms shall be printed in ink, or typed.

~~(e)~~ The owner shall sign the application and the statement required by ~~(c)(2)~~, above, if such statement is separate from the application.

~~(f)~~**(c)** The ***property owner's owner(s) and dam owner(s), if different, shall sign the application to certify signature shall constitute certification*** that the information provided is true and complete to the knowledge and belief of the ***owner signatory(ies)***.

~~(g)~~**(d)** Incomplete or improperly completed forms shall be returned by the department to the applicant or applicants with a statement for the reason(s) for the return and the additional information required.

Env-Wr 402.03 Statutory Requirements for Certain Dams.

(a) Pursuant to RSA 482:7, a new dam on a great pond shall not be constructed without specific authorization from the legislature.

(b) The department shall hold a public hearing pursuant to RSA 482:30 and RSA 482:31 upon receipt of an application for construction or reconstruction of dams falling within the scope of RSA 482:17, ***and conduct the hearing in accordance with the provisions of Env-C 200 relative to non-adjudicative proceedings.***

~~(1) The public hearing shall be conducted in accordance with the provisions of Env-C 200 relative to non-adjudicative proceedings.~~

~~(d)~~(c) Pursuant to RSA 482:9, V, no permit to construct ***or reconstruct*** a significant hazard or high hazard dam shall be issued unless the requirements of that section are met.

Env-Wr 402.04 Notice to Owner.

(a) Within 10 days of receipt of an application, the department shall provide the owner with the following:

- (1) The dam number;
- (2) The date of receipt of the application; and
- (3) A statement that construction shall not commence until the department and all other appropriate state or federal agencies have granted final approval.

(b) Within 30 days of classification by the department, the department shall provide the owner with the following:

- (1) Design and construction requirements for the particular structure depending upon classification; ***and***
- (2) Specific information needed for design review per Env-Wr 403 if the submitted design is lacking in particular areas; ~~and~~
- ~~(3) For significant hazard and high hazard structures, notification that a permit will not be issued until a draft EAP has been submitted to the department for review and a public hearing held by the department in the community in which the dam is located.~~

Env-Wr 402.05 Classification Procedure.

(a) The department shall review all new dam applications to classify the structure in accordance with ~~Env-Wr 101.21, Env-Wr 101.25, Env-Wr 102.28, and Env-Wr 102.39~~***Env-Wr 101.07.***

(b) If the owner disagrees with the department's hazard classification, the owner shall submit, for review by the department, the following:

- (1) The results of a dam breach analysis performed in accordance with ~~Env-Wr 502.06~~ ***Env-Wr 303.02 and Env-Wr 502.04;***
- (2) Breach routing in accordance with ~~Env-Wr 502.07~~ ***Env-Wr 502.05;*** and
- (3) Inundation mapping in accordance with Env-Wr 503.01.

(c) The owner of a proposed dam shall meet specific requirements relative to design, construction, inspection and maintenance of the structure in accordance with the applicable provisions of Env-Wr 403.

Env-Wr 402.06 Additional Information Required. If the dam will be a low hazard, significant hazard, or

high hazard structure, the owner shall submit:

- (a) Plans and specifications which shall, at a minimum, include the following:
 - (1) Scaled plan view;
 - (2) Scaled cross-sectional view of dam through the outlet, showing elevations of inlet and outlet, watertight connections, embankment material;
 - (3) Design of and cover treatment for ***erosion-resistant*** embankment slopes;
 - (4) Gradation analysis for all ***structural*** soils ***and fill materials*** to be used during construction;
 - (5) Compaction specifications in accordance with Env-Wr 403.02(d) a©(e);
 - (6) Construction sequence; ~~and~~
 - (7) ~~For reconstruction, the~~ plans shall be of sufficient detail to show the location of the proposed work in relation to the entire dam; and
 - (8) A written operation ~~and~~, maintenance, ~~plan~~ ***and response form as described in Env-Wr 303.04.***
- ~~(1) (1) Describes the seasonal control of impoundment levels;~~
- ~~(2) Describes regular maintenance activities;~~
- ~~(2) (3) Includes the name(s) and address(es) of the dam monitor(s).~~

Env-Wr 402.07 Notice to Municipality.

(a) Subject to (b) and (c), below, when the department receives an application to construct or reconstruct a dam, it shall issue a notice to the municipality in which the proposed dam will be located pursuant to RSA 541-A:39, to inform the municipality of the location, height and size of the impoundment of the proposed dam. The municipality may submit data or information pertinent to the department's consideration of the application. If the department receives such correspondence within ~~20~~***30*** days of the town's receipt of the notice, it shall consider the information in issuing a permit to construct or reconstruct the dam.

(b) When the department receives an application to construct a ***new*** significant hazard or ***new*** high hazard structure, the department shall send the notice to the municipality and any municipalities which could be affected by a failure of the dam, and shall include notice of a public ~~hearing~~***information meeting*** to be held by the department in the municipality in which the dam is located or in a municipality that may be affected by a failure of the dam. At the public ~~hearing~~***information meeting***, the owner shall present information about the dam and a draft emergency action plan, ~~and the department shall receive comment from the public.~~

(c) If the application is to construct a ***new*** dam on a great pond, the department shall send the notice to all municipalities in which the great pond is located.

PART Env-Wr 403 SPECIFIC DESIGN REQUIREMENTS

Env-Wr 403.01 Purpose. The purpose of this part is to set forth the minimum design requirements for all new dams and the minimum design requirements for the specific work proposed for reconstruction of existing dams.

Env-Wr 403.02 Minimum Design Requirements of All Dams. An application for construction of a new dam or reconstruction of an existing dam shall incorporate the following ***minimum*** design requirements:

- (a) The embankment slopes shall be no steeper than 2.5 horizontal to 1 vertical unless a specific design for a steeper slope shows that the embankment is stable and capable of being safely maintained;
- (b) The embankment top width shall be ***a minimum of 6 feet*** ~~or greater~~;
- (c) Any ~~earthen~~ spillway shall be constructed ***on properly prepared*** in natural ***undisturbed*** ground;
- (d) Soil compaction specifications shall be shown on the plans;
- (e) Pre-compacted lift thickness shall be compatible with the material and equipment to be used, but no greater than 12 inches in depth;
- (f) A pond drain shall be incorporated for any new dam, except as noted in Env-Wr 403.03(a)(5); and***
- (g) Trees, brush, and woody growth shall be removed from at least 15 feet beyond the footprint of the manmade structure.***

Env-Wr 403.03 Additional Requirements Based on Hazard Classification.

- (a) For the construction or reconstruction of a low hazard, significant hazard, or high hazard dam:
 - (1) All final plans and design documents shall be stamped by ~~an professional engineer, licensed in the State of New Hampshire, as defined by Env-Wr 101.16 and shall submit an affidavit attesting to the qualifications in paragraph (2)a.-d., below. with a minimum of 5 years of engineering experience related to the design and construction of similar dam projects, as determined by the department after a review of the engineer's resume~~
 - (2) The engineer shall be responsible for the following:***
 - a. Submitting supporting documentation showing relevant experience as a registered engineer in the design, construction, and safety evaluation related to the type of the dam under review;***
 - b. Understanding all applicable regulatory requirements of a dam project and the required work, analyses and oversight needed to design and/or observe construction to evaluate compliance with approved plans and specifications for the project;***
 - c. Using current state of the practice methods and means to site and design dams with safety as the primary goal and to complete engineering methodology that represents the professional level of care exercised by qualified engineers; and***
 - d. Assembling and supervise a team of qualified engineers, geologists, geological engineers and other professionals as required to address all of the disciplines for the design and/or the observation of construction of a dam.***
- ~~(2)~~***(3)*** The project shall be inspected in accordance with Env-Wr 405;
- ~~(3)~~***(4)*** A construction inspection plan, prepared in accordance with Env-Wr 405.04, shall accompany the application for construction or reconstruction; ***and***
- ~~(4)~~***(5)*** A design for construction of a new low hazard, significant hazard, or high hazard dam, with the exception of dams impounding liquid industrial, agricultural, or commercial wastes, ***contaminated sediments*** or municipal sewage, shall be equipped with a pond drain.

~~(e)~~**(b)** A design for construction ***or reconstruction*** of a significant hazard or high hazard dam shall also include the following:

- (1) The results of a stability analysis of the structure for overturning, sliding, and slope failure, as applicable, including factors of safety, using the methods outlined in “Engineering Guidelines for Evaluation of Hydropower Projects” published by FERC, Chapter 3 dated ~~2002~~***2016*** and Chapter 4 dated ~~1991~~***2006***, available as noted in Appendix B;
- (2) The results of a seepage analysis;
- (3) The results of subsurface explorations, including, but not limited to borings and test pits; and
- (4) A draft ***breach analysis and draft*** emergency action plan (EAP), or if an EAP has already been approved, an updated EAP, in accordance with ***chapter*** Env-Wr 500.

~~(d)~~ A design for reconstruction of a significant hazard or high hazard dam shall include the items identified in (c), above, if the department determines that the items are applicable based on the type of work to be done.

Env-Wr 403.04 Design Floods-***Events*** for New Dams.

(a) A new dam shall be designed to safely pass the ~~flows~~***event*** indicated below without manual operation and with the freeboard requirements indicated:

- (1) A non-menace structure shall pass the 50-year ~~flood~~***design event*** or, at the owner’s option, the site-specific inflow design flood, with ***at least*** one foot of freeboard ~~or, at the owner’s option, freeboard equal to the effects of maximum wave run up;~~
- (2) A low hazard structure shall pass the 100-year ~~flood~~***design event*** or, at the owner’s option, the site-specific inflow design flood, with ***at least*** one foot of freeboard ~~or, at the owner’s option, freeboard equal to the effects of maximum wave run up;~~
- (3) A significant hazard structure shall pass ½ of the probable maximum flood (PMF) as determined using Hydrometeorological Report No. 52 (HMR 52) from the National Oceanic and Atmospheric Administration (NOAA), ~~1987~~***1982***, available as noted in Appendix B, or the site-specific inflow design flood, ~~with freeboard equal to the effects of maximum wave run up;~~ and
- (4) A high hazard structure shall pass the PMF as determined using HMR 52, ~~1987~~***1982***, available as noted in Appendix B, or the site-specific inflow design flood, ~~with freeboard equal to the effects of maximum wave run up;~~

~~—— (b) Wave run up calculations shall identify maximum wind speeds and fetch limitations.~~

~~—— (c) For a significant hazard or high hazard dam, and when the option is applied for a non-menace or low hazard dam, the owner shall submit wave run up calculations with the application.~~

~~(d)~~**(b)** The owner shall submit the results of calculations performed for hydrologic and hydraulic analyses pursuant to (a), above, and Env-Wr 403.05 with the application.

Env-Wr 403.05 Hydrologic ***and Hydraulic*** Investigations.

(a) Hydrologic ***and hydraulic*** investigations shall be performed on the entire contributing drainage area ***using the rainfall-runoff curve number method provided in the NRCS “National Engineering Handbook”, Part 630, Hydrology, Chapters 4, 6-10, 14-17; dated March 2020 as implemented in:***

- ~~(1) “The U.S. Army Corps of Engineers’ Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) version 4.11;~~
 - ~~(2) The U.S. Army Corps of Engineers’ Hydrologic Engineering Center River Analysis System (HEC-RAS) version 6.3.1; or~~
 - ~~(3) HydroCAD Stormwater Modeling version 10.2.~~
- (b) Precipitation estimates for the design flood shall be obtained from:
- ~~(1) NRCC Research Publication RR-93-5, Atlas of Precipitation Extremes for Northeastern United States and Southeastern Canada, 1993, available as noted in Appendix B; or~~
 - ~~(1) ***Extreme Precipitation in a Changing Climate for New York and the New England States***, version 2.0, published by the USDA, NRCS and Cornell University’s Northeast Regional Climate Center;~~
 - ~~(2) ***“NOAA Atlas 14, Precipitation-Frequency Atlas of the United States”, Volume 10, Version 3.0, 2019, published by the National Oceanic and Atmospheric Administration, National Weather Service;***~~
 - ~~(2)(3) U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, Hydrometeorological Report No. 51, Probable Maximum Precipitation Estimates, United States East of the 105th Meridian, June 1978, available as noted in Appendix B.~~
- (c) ~~A H~~***hydrologic modeling for 50-year or 100-year storms shall incorporate and hydraulic analyses report shall be submitted to the department and shall include*** the following:
- ~~(1) The size of the drainage area;~~
 - ~~(2) The shape of the drainage area;~~
 - ~~(3) Antecedent moisture condition 2, as defined in the USDA NRCS National Engineering Handbook, 210-VI-NEH-630.10, July 2004, available as noted in Appendix B;~~
 - ~~(4) Ground slopes;~~
 - ~~(5) Soil types;~~
 - ~~(6) Vegetation;~~
 - ~~(7) Land use;~~
 - ~~(8) Distribution of varying precipitation amounts throughout the watershed; and~~
 - ~~(9) Ponds, swamps, and other factors affecting the amount and rate of runoff.~~
- (1) A summary narrative of the project;***
 - (2) A description of the drainage area;***
 - (3) Time of concentration calculations;***
 - (4) Curve number calculations;***
 - (5) Storage calculations;***

- (6) ***Discharge rating curve calculations;***
- (7) ***Flashboard calculations;***
- (8) ***Any other calculations and/or assumptions used in the modeling;***
- (9) ***Drainage area plans which delineate each sub-basin identifying the following:***
 - a. ***The location and size in acres of sub-basins, reaches, ponds and storage areas, and all points of interest, included in the model;***
 - b. ***Hydrologic Soils Groups obtained from the NRCS/USDA web soil survey at USDA Web Soil Survey; and***
 - c. ***Land cover;***
- (10) ***All error messages, warnings, and other such indicators provided by the software model, with explanations for their occurrence, as applicable; and***
- (11) ***All electronic files required to run the model.***

(d) The storm duration used in the modeling shall exceed the time for water to flow from the outermost point in the system to the subject location, ***but shall be no less than 24 hours***, so as to ensure that the total runoff volume will be included in the routing of the storm through the dam structure.

Env-Wr 403.06 ***Additional References for Hydraulic Determinations.***

~~(a) Because the engineering science of hydraulics is documented in many competent texts, most of which rely on the same basic concepts, relationships and formulas, the designer may use any text, combination of texts, or related computer software applications for the design analysis.~~

~~(b)(a) The department shall use one or more of the following texts in evaluating the competence of the submitted design: "Handbook of Hydraulics", Seventh ~~Eighth~~ Edition, 1996~~2017~~, available as noted in Appendix B.~~

~~(1) "National Engineering Handbook, Section 5, Hydraulics" by USDA NRCS, 1956, available as noted in Appendix B; or~~

~~(2) "Handbook of Hydraulics", Seventh Edition, 1996, available as noted in Appendix B.~~

Env-Wr 403.07 ***Concrete Design Criteria.***

~~(a) Because the design of concrete structures is documented in many competent texts, the designer may use any text, combination of texts or related computer software applications.~~

~~(b)(a) The department shall use one or more of the following texts in evaluating the competence of the submitted design:~~

~~(1) "Building Code Requirements for Structural Concrete & Commentary," ACI 318-05~~318-19(22)~~, American Concrete Institute, 2005~~2019~~, available as noted in Appendix B ***for anchor design; or***~~

~~(2) "Design of Small Dams" by US Department of Interior, Bureau of Reclamation, third Edition, 1987, available as noted in Appendix B; or~~

~~(3) "National Engineering Handbook, Section 6, Structural Design", USDA NRCS, 1980, available as noted in Appendix B.~~

(2) “Code Requirements for Environmental Engineering Concrete Structures and Commentary,” ACI-350-20 and ACI 350R-20, American Concrete Institute, 2020, available as noted in Appendix B, for concrete design.

Env-Wr 403.08 Steel Design Criteria.

~~(a) Because the design of steel structures is documented in many competent texts, the designer may use any text, combination of texts or related computer software applications.~~

(b)(a) The department shall use ~~one or more~~ of the following texts in evaluating the competence of the submitted design “Steel Construction Manual” by the American Institute of Steel Construction, ~~Fourteenth~~ ***Fifteenth*** Edition, ~~2011~~ ***2017***, available as noted in Appendix B.

~~(1) “Steel Construction Manual” by the American Institute of Steel Construction, Fourteenth Edition, 2011, available as noted in Appendix B.; or~~

~~(2) “National Engineering Handbook, Section 6, Structural Design” USDA NRCS, 1980, available as noted in Appendix B.~~

Env-Wr 403.09 Timber Design Criteria.

~~(a) Because the design of timber structures is documented in many competent texts, the designer may use any text, combination of texts or related computer software applications.~~

(b)(a) The department shall use one or more of the following texts in evaluating the competence of the submitted design:

~~(1) “Timber Construction Manual” by the American Institute of Timber Construction, Fourth~~ ***Sixth*** Edition, dated ~~1994~~ ***2012***, available as noted in Appendix B; or

~~(2) “National Engineering Handbook, Section 6, Structural Design” USDA NRCS, 1980, available as noted in Appendix B.~~

(2) “2018 National Design Specification for Wood Construction” by the American Wood Council, dated 2018, available as noted in Appendix B.

Env-Wr 403.10 Earth Embankment Design Criteria.

~~(a) Because the design of earth embankments is documented in many competent texts, the designer may use any text, combination of texts or related computer software applications.~~

~~(b)~~ The department shall use one or more of the following texts in evaluating the competence of the submitted design:

~~(1)~~ ***(a)*** USDA NRCS Earth Dams and Reservoirs Technical Release ***210-60*** (TR ***210-60***), ~~2005~~ ***2019***, available as noted in Appendix B;

~~(2) “Design of Small Dams” U.S. Department of the Interior, Bureau of Reclamation, third edition, 1987, available as noted in Appendix B;~~

~~(3) ACER Technical Memorandum No. 9, “Guidelines for Controlling Seepage Along Conduits Through Embankments” by the U.S. Department of the Interior, Bureau of Reclamation, 1987, available as noted in Appendix B; or~~

~~(4) U.S. Department of Agriculture, NRCS Agricultural Handbook 590, 1997, available as noted in Appendix B.~~

(b) Evaluation and Monitoring of Seepage and Internal Erosion” FEMA P-1032, May 2015, available as noted in Appendix B;

(c) Filters for Embankment Dams – Best Practices for Design and Construction” FEMA, 2011, available as noted in Appendix B;

(d) “Technical Manual: Conduits through Embankment Dams” FEMA L-266, September 2005, available as noted in Appendix B;

(e) “Technical Manual: Overtopping Protection for Dams” FEMA P-1015, May 2015, available as noted in Appendix B;

(f) “Technical Manual: Plastic Pipe Used in Embankment Dams” FEMA P-675, November 2007, available as noted in Appendix B; or

(g) NRCS “National Engineering Handbook”, Part 628, Articulated Concrete Block Armored Spillways, March 2019, as noted in Appendix B.

PART Env-Wr 404 ISSUANCE AND CONDITIONS OF PERMITS

Env-Wr 404.01 Approval.

(a) Subject to (b) through (d), below, the department shall approve an application to construct or reconstruct a dam if:

(1) The requirements of Env-Wr 402 and Env-Wr 403 have been met; and

(2) Issuance of the permit is consistent with RSA 482:1 and any other applicable provisions of RSA 482.

~~(b) If the proposed dam is a significant hazard or high hazard dam, the application shall not be approved until:~~

~~(1) A final emergency action plan has been completed and approved in accordance with Env-Wr 505; and~~

~~(2) The department has determined that the dam will serve a public benefit as required by RSA 482:9, V.~~

~~(e)~~**(b)** If the proposed dam is a new dam on a great pond, the application shall not be approved until the owner has been granted authority by the legislature to construct or reconstruct the dam.

~~(d)~~**(c)** If the dam is proposed under RSA 482:17, the application shall not be approved until the department has determined after holding a non-adjudicative hearing in accordance with the applicable provisions of Env-C 200 that it is in the public benefit to grant the permit pursuant to RSA 482:31.

Env-Wr 404.02 Issuance and Recordation of Permit/Registration.

(a) Upon review and approval of the application, the department shall issue a permit authorizing the construction or reconstruction. The permit shall include any restrictions, requirements or disclaimers as specified in Env-Wr 404.03.

(b) The department shall send the original permit to the registry of deeds for the county in which the dam is located to be recorded.

(c) The department shall send a copy of the permit to the owner at the time of approval. The department shall send the original permit to the owner upon ~~receiving it back~~ ***receipt*** from the registry of deeds.

Env-Wr 404.03 Conditions of Permit. The following conditions shall apply to all permits to construct or reconstruct a dam:

(a) The permit shall be valid for ~~25~~ years from the date of issuance;

(b) Work under the permit shall be completed within ~~25~~ years unless the owner has requested and received a time extension in accordance with Env-Wr 404.04;

(c) All work on the dam shall comply with the approved plans and specifications, subject to design changes approved and documented in accordance with Env-Wr 404.05;

(d) The ~~construction~~ engineer shall provide a final inspection report in accordance with ~~Env-Wr 405.08~~ ***Env-Wr 405.07***;

(e) The ~~construction~~ engineer shall certify to the department that the work was completed in accordance with the approved plans and specification and design intent as required by ~~Env-Wr 405.09~~ ***Env-Wr 405.08***;

(f) Inspections shall be performed in accordance with the plan submitted pursuant to Env-Wr 405.04;

~~(g) At least 10 days prior to commencing work, the owner shall notify the department by certified mail of the date that the work is expected to commence;~~

~~(h)~~ ***(g)*** The owner shall notify the department upon completion of the work in accordance with ~~Env-Wr 405.11(a)~~ ***Env-Wr 405.10(a)***;

~~(i) If an emergency action plan is required, no liquid shall be impounded until the EAP is approved by the department.~~

~~(j)~~ ***(h)*** The owner shall maintain a current mailing ***and email*** address with the department;

~~(k)~~ ***(i)*** The owner shall operate and maintain the structure in accordance with the written ***approved*** operation, ~~and~~ maintenance ***and response form*** procedures submitted in accordance with Env-Wr 402.06~~(b)~~ ***(a)(8)***; and

~~(l)~~ ***(j)*** The department shall include in the permit any other conditions necessary to ensure protection of public safety that are based on the specific design, site, and watershed.

Env-Wr 404.04 Time Extension. The department shall grant a ***single*** 2-year time extension to construct a dam if:

(a) The owner requests the extension in writing prior to the permit's expiration date;

(b) The hazard classification of the dam has not changed; ***and***

(c) The approved plans meet current design requirements or can be amended to meet current requirements ~~as specified in~~ ***in accordance with*** Env-Wr 404.05; ~~and~~.

~~(d) The site is stabilized and the condition of the project is such that granting a time extension to complete the construction will not threaten human life, public safety, or the environment.~~

Env-Wr 404.05 Design Changes.

(a) No changes shall be made to the plans and specifications approved by the department, either before or during construction, unless:

- (1) The changes are approved by the ~~design~~-engineer; and
- (2) The changes are approved by the department in ~~writing~~ ***or electronic mail***.

(b) To request a change, the owner or the ~~owner's designee~~ ***engineer*** shall submit a request for the change in writing ***or electronic mail*** to the department, which shall include:

- (1) The specific information regarding the requested change; and
- (2) The reason the change is being requested.

(c) The department shall approve the change if the overall design as revised would have been approved if it had been submitted originally.

(d) The department shall notify the owner and the ~~owner's designee~~ ***engineer***, if applicable, of the decision on the request in writing ***or electronic mail***. If the request is denied, the decision shall state the reason(s) for the denial.

(e) If time is of the essence, the department shall convey verbal approval prior to issuing written ***or electronic mail*** approval.

PART Env-Wr 405 DAM CONSTRUCTION INSPECTIONS

Env-Wr 405.01 Purpose. The purpose of this part is to set forth the requirements for dam construction inspections.

Env-Wr 405.02 Applicability. These rules shall apply to construction inspections which are required during construction and reconstruction of a low hazard, significant hazard, or high hazard dam pursuant to RSA 482:11.

Env-Wr 405.03 ~~Construction-Engineer~~ ***for Construction***.

(a) Prior to any ***starting*** work on the dam ~~starting~~, the owner shall engage an ~~construction~~-engineer to ensure compliance with approved plans and specifications ***during construction***.

(b) The ~~construction~~-engineer shall ~~have a minimum of 5 years of engineering experience related to construction inspection or design of similar dam construction projects~~ ***comply with the requirements of Env-Wr 403.03(a)(2) a.-d.***

~~— (c) The owner shall submit the construction engineer's resume of related construction inspection or design experience to the department for review and approval. Department approval shall be based upon the satisfaction of the criterion of (b), above.~~

~~(d)~~(c) The ~~construction~~-engineer shall have ultimate responsibility for ***project oversight related to:***

- (1) The accurate completion of all inspection tasks; and
- (2) Compliance with approved plans and specifications.

~~(e)~~(d) The ~~construction~~-engineer may assign some inspection tasks to a duly-authorized and ***qualified*** agent provided that the agent's inspection tasks are explicitly identified in the construction inspection plan described in ***and*** submitted pursuant to Env-Wr 405.04. ***The engineer shall be responsible for ensuring that the agent is qualified to perform the duties assigned.***

~~(f)~~ ***(e)*** Prior to ***starting*** any work on the dam ~~starting~~, the ~~construction~~ engineer shall sign, date, and submit to the department a completed acknowledgement form provided by the department, as specified in ~~(e)~~ ***(f)***, below.

~~(g)~~ ***(f)*** The ~~construction~~ engineer ***responsible for performing the inspections during dam construction*** shall ***complete and submit "Dam Construction Inspection Engineer Acknowledgement Form," NHDES-W-02-011, December 2023, available at: <https://onlineforms.nh.gov/?formtag=NHDES-W-02-011>*** ~~provide the following on the acknowledgement form:~~

- ~~(1) The name and address of the owner of the dam;~~
- ~~(2) The name of the dam and the dam's location, by town;~~
- ~~(3) The dam number assigned by the department;~~
- ~~(4) The construction engineer's name and professional engineer's license number;~~
- ~~(5) The name and professional engineer's license number of the design engineer; and~~
- ~~(6) The date of the plans, specifications, supporting assumptions, and calculations reviewed by the construction engineer; and~~
- ~~(7) A certification that he or she has reviewed the plans, specifications, supporting assumptions, and calculations, and understands the design and the intent of the design.~~

(g) The engineer shall sign and date the form and the signature shall constitute certification that that they have reviewed the plans, specifications, supporting assumptions, and design calculations, and other documentation related to the design and construction and understands the design and the intent of the design.

Env-Wr 405.04 Inspections During Construction or Reconstruction.

(a) Prior to ***starting*** any work on the dam ~~starting~~, the owner shall submit a written ***construction*** inspection plan to the department.

(b) The plan required by (a) above shall contain detailed information relative, but not limited, to the following:

- (1) Which activities shall be monitored and by whom;
- (2) Field tests to be performed and the frequency of testing;
- (3) Material testing requirements; and
- (2) Documentation and reporting requirements, including ~~inspection~~ ***weekly*** reports and construction progress photographs.

(c) The department shall approve the plan if it determines that the plan is adequate to ensure that the dam will be constructed or reconstructed in accordance with the approved plans and specifications.

~~(d) The department shall inform the owner of its decision on the plan in writing. If the plan is not approved, the decision shall state the reason(s) for the non-approval.~~

~~(e)~~ ***(d)*** Inspections during construction or reconstruction shall be performed in accordance with the approved ***inspection*** plan.

Env-Wr 405.05 Work Items to be Inspected. The ~~construction~~ engineer ***or designee*** shall ***be present and*** inspect, document, and photograph, ***at a minimum***, the following work items:

- (a) Excavation and sub-grade preparation;
- (b) Pipe placement ***and bedding material***;
- (c) Placement of graded aggregate drain materials;
- (d) ***Placement of*** ~~E~~earthfill;
- (e) Cut-off construction;
- (f) Steel placement, ***rebar and structural steel***;
- (g) ***Overtopping protection***;
- ~~(g)~~***(h)*** Final grading; and
- ~~(h)~~***(i)*** Pouring of concrete.

Env-Wr 405.06 Inspection Frequency. The frequency of inspections for construction and reconstruction projects shall be as follows: ~~(a) Low hazard dam inspections shall be as frequent as needed to ensure compliance with approved plans and specifications; and~~ ***in accordance with the requirements of the approved construction inspection plan.***

~~(b) Significant hazard and high hazard dam inspections shall be conducted continuously by on-site inspectors unless specifically exempted by the approved inspection plan for particular items of work.~~

~~Env-Wr 405.07 No Design Changes Without Prior Approval. No changes from the approved plans and specifications shall be implemented unless the change is approved in accordance with Env-Wr 404.05.~~

Env-Wr ~~405.08~~***405.07*** Final Inspection Report.

(a) The ~~construction~~ engineer shall submit an inspection report to the department within ~~30~~***60*** days of the completion of the project.

(b) The report shall include:

- (1) A copy of all test results;
- (2) The ~~construction~~ engineer's ***and agent's, if one or more are employed***, observations of the work items specified in Env-Wr 405.05;
- (3) Representative construction progress photographs;
- (4) Documentation of ***all*** department-approved changes in design;
- (5) ~~Documentation and results of~~ ***Summary reports for*** all construction inspections, including photographs;
- (6) Foundation conditions observed during excavation; and
- (7) Any other data pertinent to determining the integrity of the structure, ***including unexpected conditions or unusual circumstances.***

Env-Wr ~~405.09~~**405.08** Affidavit of Compliance. ~~Within 10 days of completing the project, the construction~~***Prior to filling the reservoir, the*** engineer shall provide the department with an affidavit of compliance indicating that the construction or reconstruction was completed in accordance with approved plans, specifications, and the intent of the design, including any design changes approved in accordance with Env-Wr 404.05.

Env-Wr ~~405.10~~**405.09** As-built Drawings. The construction engineer shall submit as-built drawings of the project to the department within 180 days of submitting the affidavit of compliance.

Env-Wr ~~405.11~~**405.10** Requirements Prior to Impounding.

(a) The owner shall notify the department in writing ***or by electronic mail*** upon the completion of construction or reconstruction of any low hazard, significant hazard, or high hazard dam and prior to filling the reservoir. The notice shall include the ***state*** dam ***inventory*** number and the location of the dam.

(b) Within 10 working days of receipt of notice from the owner, the department shall perform a final visual inspection with the reservoir drained.

(c) The department shall either authorize filling of the reservoir by issuance of a certificate of approval or order remedial action for noncompliance with the approved plans and specifications.

(d) No person shall close gates or take other actions that cause the dam to impound water until the owner is authorized by the department ~~in writing~~ to fill the reservoir.

(e) The department shall authorize the owner to fill the reservoir only after the department:

~~(1) Determines that the construction was completed in accordance with the approved plans and specifications;~~

(1) Receives the affidavit of compliance as required by Env-Wr 405.08;

(2) Performs a final visual inspection of the dam; ***and***

~~(3) Approves the emergency action plan; and~~

(3) Verifies that the final EAP has been approved, distributed to all EAP holders and a successful test of the notification flowchart has occurred, if applicable.

~~(4) Receives the construction engineer's final inspection report and affidavit of compliance.~~

CHAPTER Env-Wr 500 EMERGENCY ACTION PLANS

PART Env-Wr 501 PURPOSE AND APPLICABILITY

Env-Wr 501.01 Purpose and Applicability.

(a) The purpose of the rules in this chapter is to establish the requirements for an emergency action plan (EAP), whose purpose is to assist emergency responders in the event of a specific dam failure by:

(1) Delineating the area which could be ~~affected~~***inundated***;

(2) Providing notification procedures; and

(3) Identifying the responsibilities of individuals or agencies in a response.

(b) The owner shall prepare an EAP in accordance with these rules for ***any high or significant hazard dam***.

~~(1) Any high hazard dam; and~~

~~(2) Any significant hazard dam, unless:~~

~~a. The dam is classified as a significant hazard structure only because it impounds a public water supply and the owner has submitted to the department an emergency plan for a community water system pursuant to Env Ws 360.15 or successor rule Env Dw 503.21; or~~

~~b. The dam is classified as a significant hazard structure only because it impounds liquid industrial, agricultural, or commercial waste, septage, sewage, or contaminated sediments and the owner maintains a list of emergency contact numbers as a condition of the dam's permit under RSA 485-A or RSA 485-C.~~

(c) EAPs for dams subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) shall be prepared in accordance with FERC requirements and ***a copy*** filed with the department.

(d) EAPs for the following U.S. Army Corps of Engineers (USACE) dams ***projects*** shall be prepared in accordance with USACE requirements and ***a copy*** filed with the department ***including:***

- (1) Franklin Falls Dam;
- (2) Blackwater Dam;
- (3) Hopkinton-Everett Dams;
- (4) Edward MacDowell Dam;
- (5) Otter Brook Dam; and
- (6) ~~Surrey-Surry~~ ***Surry*** Mountain Dam.

PART Env-Wr 502 BREACH ANALYSIS

Env-Wr 502.01 When Required. Unless exempted pursuant to Env-Wr 502.02, prior to preparing an EAP the owner shall have a dam breach analysis performed in accordance with this part.

Env-Wr 502.02 Exemption from Breach Analysis.

(a) Subject to ~~Env-Wr 502.03(c)~~, ***below***, an owner shall be exempted from the development of a breach analysis if the department determines that the hazard classification is based solely on the potential damage to one or more isolated and easily identified bridges, roadways, or other structures located below the dam, ~~and no other damages will result from a dam breach.~~

(b) If this exemption applies to a dam, ***the*** department shall:

- (1) Notify the owner in writing ***or by electronic mail*** of the exemption; and
- (2) Inform the owner of the exact structures to be delineated on a simplified inundation map, as required by Env-Wr 503.02.

~~Env-Wr 502.03 Repeal of Breach Analysis Exemption.~~

~~(a)(c)~~ If ~~downstream developments~~ ***conditions downstream of the dam*** change such that additional bridges, roadways, or other structures would be affected by a dam failure and these structures are not isolated and easily identifiable, the department shall notify the owner in writing that ***the exemption has been repealed and*** a dam breach analysis, as described in Env-Wr 502.064, shall be required due to the new developments downstream of the dam.

~~(b)~~ Within 90 days of notification pursuant to (a), above, the owner shall:

- ~~(1)~~ Complete a breach analysis in accordance with this part; and
- ~~(2)~~ Produce and distribute an inundation map in accordance with Env-Wr 503.

~~Env-Wr 502.04~~ Expansion of Study Area.

~~— (a)~~ If after approving a breach analysis the department determines that downstream development has changed such that new structures would be affected by a dam failure and the threat to these structures is not easily identifiable, the department shall notify the owner in writing that the scope of the dam breach analysis previously performed must be expanded

~~— (b)~~ Within 90 days of notification pursuant to (a), above, the owner shall:

- ~~(1)~~ Expand the scope of the previously approved breach analysis to include the newly developed area(s); and
- ~~(2)~~ Produce an amended inundation map and distribute it to all EAP holders

Env-Wr ~~502.05~~ **502.03** Breach Analysis Required Due to Reconstruction. The owner shall complete a new or revised breach analysis, as applicable, to ascertain the impacts of a dam failure if:

(a) The dam is reconstructed, resulting in a ~~larger or higher~~ ***normal pool level or an increase in impoundment storage***; ~~or~~

(b) A change in structural configuration could result in failure modes that reduce or increase the effects of a dam failure; or

~~(b)(c)~~ A change in the discharge capacity ~~would~~ ***could*** result in reducing or increasing the effects of a dam failure.

Env-Wr ~~502.06~~ **502.04** Specific Requirements and Breach Parameters.

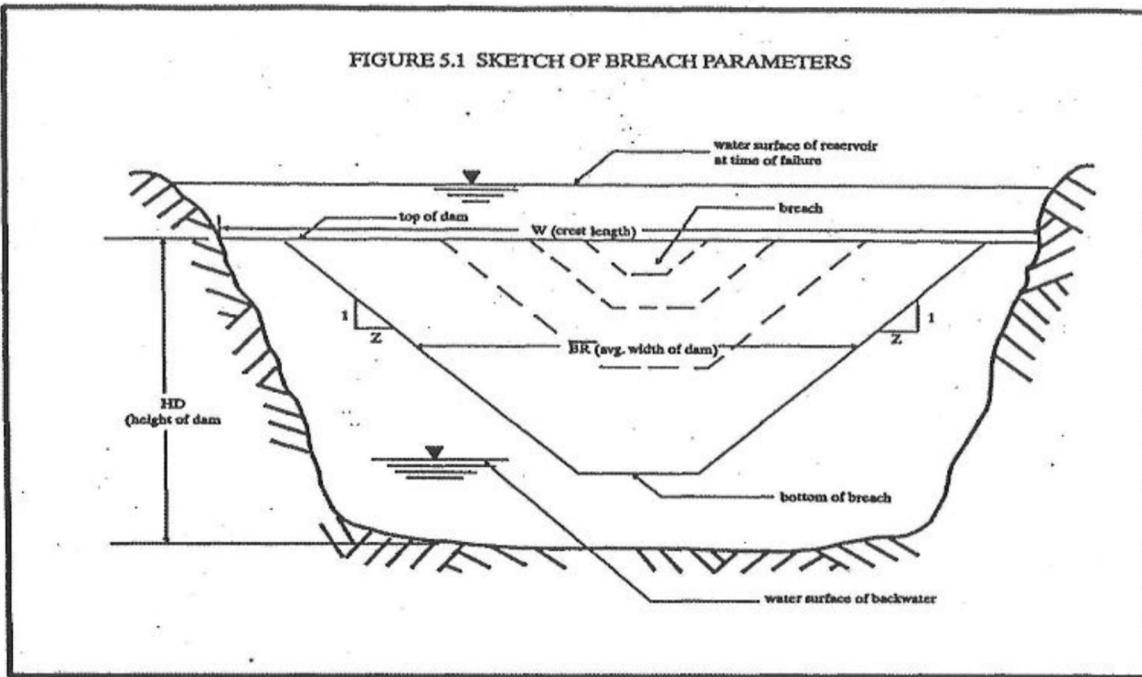
(a) The dam breach analysis shall be performed under the direction of and stamped by a professional engineer licensed in New Hampshire and experienced in hydrology, ~~and~~ hydraulics ***and breach modeling***.

(b) The breach parameters shall be in accordance with Table 5.1 and Figure 5.1 below, unless the department approves the use of other parameters pursuant to (c), below:

Table 5.1 Dam Breach Parameters

PARAMETER	TYPE OF DAM	VALUE
Average Width of Breach (BR)	Arch	BR = Crest Length
	Masonry, Gravity	BR = Width of one or more monoliths, usually BR ≤ 0.5 W

	Earth, Rockfill, Timber Crib	$HD \leq BR \leq 5HD$ (usually between 2HD and 4HD)
Horizontal Component of Side Slope of Breach (Z)	Arch	$0 \leq Z \leq \text{slope of valley walls}$
	Masonry, Gravity	$Z = 0$
	Earth, Rockfill, Timber Crib	$1/4 \leq Z \leq 1$
Time to Failure (TFH) in hours	Arch	$TFH \leq 0.1$
	Masonry, Gravity	$0.1 \leq TFH \leq 0.3$
	Earthen (Engineered, Compacted) Timber Crib	$0.1 \leq TFH \leq 1.0$
	Earthen (Non-Engineered, Poor Construction)	$0.1 \leq TFH \leq 0.5$



(c) The department shall allow use of different parameters due to specific dam or site conditions, if the ~~applicant requests to use different parameters and~~ ***dam owner*** demonstrates by clear and convincing evidence that the use of the alternative parameters would result in an accurate model and would not underestimate the effects of a dam failure.

(d) A dam breach flow shall be routed together with each of the following base flows:

- (1) The sunny day flow ~~as defined in Env Wr 101;~~ and
- (2) ***The 50-year design event;*** and
- ~~(2)~~(3) ***The 100-year flood flow-design event.***

(e) The breach flow together with the base flows in (d), above, shall:

- (1) Be routed downstream of the dam ***with downstream inflows;*** and
- (2) Include provisions to identify the number of hours or minutes from the start of a failure to the time when the river initially starts to rise (***breach wave arrival time***) and the time to reach peak stage (***time to peak***).

(f) Peak flow velocities also shall be determined and shown on the inundation map for critical stations such as road crossings and populated areas below the dam.

(g) The routing shall continue downstream until: ~~(1) The~~ ***the*** point at which the water surface elevation due to dam failure is ~~no more than 21 feet~~ ***foot*** above the non-failure conditions in areas of potential threat to life and major property damage ***or as determined by the department.***; ~~or~~

~~(2) A point upstream of the point determined pursuant to (1), above, if the owner shows that there is no longer a threat to public safety beyond that point.~~

Env-Wr ~~502.07~~ ***502.05*** Breach Routing ***Modeling*** Methods.

(a) The owner shall use ~~one of the~~ U.S. Army Corps of Engineers' Hydrologic Engineering Center ***River Analysis System (HEC-RAS)***, and ~~incorporated in HEC-RAS, version 4.1, 2010-~~ ***6.3.1***, available as noted in Appendix B, ~~following routing methods for dam breach analysis~~ ***modeling***.

~~(1) Methods and procedures used by the United States Department of Agriculture, Natural Resources Conservation Service in:~~

~~a. Technical Release T.R. 66 "Simplified Dam Breach Routing Procedures", 1985, available as noted in Appendix B;~~

~~b. Computer Program for Project Formulation Hydrology, T.R. 20, 1992, available as noted in Appendix B; and~~

~~c. WSP 2 Computer Program, T.R. 61, 1993, available as noted in Appendix B, which shall be used in conjunction with each other;~~

~~(2) Methods and procedures using the National Weather Service Dam Break Flood Forecasting Model authored by Dr. Danny L. Fread, from the National Weather Service in Silver Springs, Maryland, dated 1987, available as noted in Appendix B; or~~

~~(3) Methods and procedures for dam breach simulation and routing developed by the U.S. Army Corps of Engineers' Hydrologic Engineering Center, and incorporated in HEC-RAS, version 4.1, 2010, available as noted in Appendix B.~~

(b) An owner wishing to use other techniques for breach ***routing modeling*** shall submit a written request for approval of the technique to the department for each particular site prior to using the technique. The request shall contain a description of the technique, including how the technique addresses the parameters addressed by the techniques identified in (a), above.

(c) If the department determines that the technique can be correctly applied to the hydrologic and topographic conditions of the dam and downstream area, within the limitations and capabilities of the modeling technique, and that it will provide the detailed information required by these rules, the department shall approve the technique for use on that site and shall so notify the owner in writing.

~~(d) The department shall not require previously approved dam breach analyses that were completed using methods other than those specified in (a), above, to be reassessed using those methods, provided, however, that if an expansion of the breach analysis is required pursuant to Env-Wr 502.04, the owner shall use a technique specified in (a) or approved pursuant to (b) and (c), above.~~

Env-Wr ~~502.08~~**502.06** Downstream Dams.

(a) When there are dams downstream located within the study area as determined by ~~Env-Wr 502.06(g)~~ ***Env-Wr 502.04(g)***, the owner shall evaluate the effect of the breach flow on these dams.

(b) If a downstream dam would not be overtopped ***by failure of the subject dam***, no stability analysis of this structure shall be required.

(c) If a downstream dam would be overtopped by failure of the subject dam, the owner shall:

(1) Include the downstream dam's failure in the breach model; or

(2) Submit to the department the results of a stability analysis for overturning, ~~and sliding, or slope failure~~ ***other applicable failure mode***, as applicable, including factors of safety, on the downstream dam.

(d) If the stability analysis performed pursuant to (c)(2), above, indicates that a downstream dam is unstable during overtopping ***for the duration of the event***, the owner shall include the failure of the downstream dam in the breach model.

(e) If the stability analysis performed pursuant to (c)(2), above, indicates that a downstream dam is stable during overtopping ***for the duration of the event***, its failure shall not be required to be modeled in the dam breach analysis.

Env-Wr ~~502.09~~**502.07** Review of Breach Analysis by Department.

(a) The owner shall submit the following ***information*** to the department for review:

(1) ***A narrative describing the S-structural and hydraulic breach assumptions and base flow criteria;***

(2) ***A description of the M-methods for determining base flows-downstream inflows;***

(3) Structural stability analyses of downstream dams, if applicable; ~~and~~

(4) Summary of the results of the breach analysis, ***both narrative and tabular;***

(5) ***A Geographic Information System shapefile; and***

(6) ***All electronic modeling files for the analysis required for the department to run and review the model.***

(b) The owner shall submit inundation maps prepared in accordance with Env-Wr 503 for review, by submitting draft inundation maps with the information listed in (a), above, or after receiving approval of the breach analysis.

(c) If the information submitted pursuant to (a), above, is incomplete or the dam failure is incorrectly modeled, the department shall, within 60 days of receipt of the information, notify the owner in writing of the items which need to be addressed and the deadline for submittal of the amended analysis, ~~which~~ shall be 60 days from the date of the ~~notice~~ ***department's response***.

(d) If the information submitted pursuant to (a), above, is complete and failure is correctly modeled, the department shall, within 60 days of receipt of the submitted information, ***approve the breach analysis submittal.***

~~(1) Determine whether the sunny day failure or the 100-year flood failure represents the most critical threat to the downstream community; and~~

~~(2) Notify the owner in writing of which failure scenario to use in the mapping.~~

PART Env-Wr 503 INUNDATION MAPPING

Env-Wr 503.01 Inundation Map Requirements.

(a) The owner shall produce an inundation map ***in .pdf format*** to provide the local emergency responders with a tool for planning evacuation procedures.

(b) The inundation map shall delineate the area impacted by a potential dam failure, as determined by the breach analysis required by Env-Wr 502.

(c) The inundation map shall meet the following criteria:

(1) The map(s) shall be at a scale of 1:2,000 or of greater detail ***an appropriate scale to show sufficient detail of all impacted areas, but at a minimum scale of 1:2,000;***

(2) Residences, commercial, and industrial structures or clusters of structures, when located in close proximity to each other, within the inundation area shall be shown on the most recent ***current*** USGS topographic mapping, supplemented by locations derived from aerial photography ***available at the time the map is produced.*** available on the DES website, www.des.nh.gov;

(3) Roads within the inundation area and within at least 0.5 mile from the exterior boundary of the inundation area shall be shown ***and clearly labeled;***

(4) The ~~time for the flood~~ ***breach wave arrival time and breach wave peak time*** to reach for critical areas, including, ***at a minimum,*** those outlined in (2) and (3), above, ~~including time to rise and time to peak~~ shall be shown;

(5) Peak ~~flood~~ ***breach*** wave velocities at critical areas shall be shown;

(6) Peak ~~flood~~ ***breach*** wave depths ***above ground surface at critical structures and areas*** shall be shown. ***with specific reference to depths of flooding above first floor elevations of habitable structures when present;***

(7) ~~Political~~ ***City/town*** boundaries shall be shown;

(8) The map(s) shall ~~indicate whether~~ ***depict*** the inundation area ~~represents a~~ ***of both the*** sunny day ***flow*** failure or a storm day ***and the 100-year design event flow*** failure scenario(s); ~~and~~

(9) The date on which the map was prepared shall be included on the map; ***and***

(10) The date that the breach analyses for the inundation depicted on the map(s) were approved by the department.

(d) If the inundation map ***set*** consists of 3 or more pages, ~~the owner shall provide an index map~~ ***shall be provided*** which clearly directs the user to the appropriate map for a given area.

Env-Wr 503.02 Simplified Inundation Map.

(a) An owner who has been exempted from the requirement of a breach analysis pursuant to Env-Wr 502.02 shall submit a simplified inundation map.

(b) The simplified inundation map shall include the elements specified in Env-Wr 503.01(a), (c)(1) - (3), and ~~(8)~~ ***(7) and (9).***

Env-Wr 503.03 Department Review.

(a) The owner shall submit the inundation map to the department for review and approval prior to incorporating it into the emergency action plan.

(b) The department shall inform the owner in writing within 60 days of receipt whether the inundation map is approved or ~~what changes are necessary~~ or ***of any inadequacies requiring revision and resubmission.***

~~PART Env-Wr 504 COORDINATION WITH LOCAL COMMUNITIES~~

~~Env-Wr 504.01 Communications with Community(ies).~~

~~(a) Prior to finalizing the EAP, the owner shall supply all local community(ies) located within the inundation area with an inundation map to assist them in determining their response to a potential dam failure.~~

~~(b) The owner shall discuss with the local emergency management director, or at the emergency management director's discretion, the local fire department or police department, to determine which individuals or agencies shall be notified during an actual or impending emergency condition at the dam. These discussions shall be held with the appropriate personnel in each of the towns which could be impacted, as shown on the inundation map. If a municipality has not designated an emergency management director, the owner shall meet with the local governing body.~~

~~Env-Wr 504.02 Acknowledgment of EAP by Local Community(ies).~~

~~(a) The owner shall request that each affected community in the inundation area sign a form acknowledging its role in the EAP.~~

~~(b) If a community refuses to provide such statement, the owner shall notify the department certifying that a copy of the draft EAP has been delivered to the community.~~

~~PART Env-Wr 505~~**504** PREPARATION AND FORMAT OF EAP DOCUMENT

Env-Wr ~~505.01~~**504.01** Submittal of Draft EAP.

(a) The owner shall submit a copy of the draft EAP prepared pursuant to ~~Env-Wr 505.02~~**Env-Wr 504.02** to the department for review. ~~The draft may be submitted as unbound pages.~~

(b) The department shall review the document for compliance with this chapter. Within 60 days of submittal, the department shall notify the owner in writing of its approval of the EAP or of any inadequacies ***requiring revision and resubmission.***

Env-Wr ~~505.02~~**504.02** Format of the EAP.

(a) The ~~format of the~~EAP shall be ***submitted on 8½ x 11 loose leaf paper (hard copy) and in .pdf format*** a 3-ring binder to allow for ease of supplementation and revision as required.

(b) In order to facilitate the development of an EAP, the owner may use the EAP template found at the following link: <https://www.des.nh.gov/climate-and-sustainability/storms-and-emergencies/dam-emergency-action-plans>.

~~(b)~~ The content of the EAP shall be standardized as follows:

- (1) Table of Contents;
- (2) Section 1, Notification ~~flow chart~~**Flowchart**;

- (3) Section 2, ***General*** Responsibilities ~~under the EAP~~;
- ~~(4) Section 3, Notification checklists;~~
- ~~(5)~~**(4)** Section 4, Preventive ~~a~~**Action**; and
- ~~(6)~~**(5)** Appendices, including:
- a. Appendix A, ~~Dam and watershed~~**Project** ~~a~~**Description**;
 - b. Appendix B, ~~Summary of breach analysis~~**Impact of Breach**;
 - c. Appendix C, Inundation ~~m~~**Map**; **and**
 - d. ~~Appendix D, Monitor training and testing procedures;~~
 - e. ~~Appendix E, Local evacuation procedure;~~
 - f. ~~Appendix F, List of EAP holders; and~~
 - g. ~~Appendix G, Documentation.~~
 - d. Appendix D, Posting of the Plan.**

(c) The required contents of each section or appendix shall include the information identified in ~~Env-Wr 505.03~~ ***Env-Wr 504.03*** through ~~Env-Wr 505.12~~ ***Env-Or 504.08***, as applicable.

~~Env-Wr 505.03~~***504.03*** Notification Flow ~~chart~~ **Flowchart**.

(a) Section 1 of the EAP shall be a chart identifying the individuals and local and state government agencies to be notified during a potential or actual emergency condition at the dam.

(b) The notification ~~flow chart~~ **flowchart** shall be developed in ~~accordance~~ **coordination** with local and state emergency responders and shall conform with the community's current notification protocol.

(c) In order to facilitate the development of an EAP, the owner may use the EAP template found at the following link: <https://www.des.nh.gov/climate-and-sustainability/storms-and-emergencies/dam-emergency-action-plans>.

~~Env-Wr 505.04~~***504.04*** ***General Responsibilities***. Section 2 of the EAP shall describe the roles and responsibilities of each individual ~~and local or state government agency in an emergency response~~ **or entity identified in the notification flowchart**.

~~Env-Wr 505.05~~ Notification Checklists.

~~(a) Section 3 of the EAP shall include a notification checklist for each individual and local or state government agency responsible for making calls during an emergency situation or during a test of the EAP.~~

~~(b) The notification checklist shall include a table to be filled in by the participating individual or agency making notifications, including the name(s) of the agency(ies) or individual(s) to be contacted and the time at which the contact was made.~~

~~Env-Wr 505.06~~***504.05*** Preventive Action. Section 4 of the EAP shall:

(a) Indicate actions ~~which~~***that*** the ~~monitor~~***owner or designee*** shall take to ***operate the dam or to address or*** correct a malfunction of the dam;

(b) Identify the means, materials, and equipment needed to ***address anticipated malfunctions or*** make emergency repairs to the ~~structure~~***dam***;

(c) Identify the necessary ~~training and~~ equipment, including alternative power sources, to operate the ~~structure~~***dam's outlet works or other essential components***; and

(d) Include a ~~list of~~***any other*** preventive and mitigative action measures to be undertaken during emergency situations.

Env-Wr ~~505.07~~***504.06*** ~~Dam and Watershed Project Description~~. Appendix A of the EAP shall include the following information:

(a) The ~~h~~***Height and length*** of the dam, in feet;

(b) ~~The n~~***Normal and maximum*** surface area of the impoundment, in acres;

(c) ~~The n~~***Normal and maximum*** volume of the impoundment, in acre-feet;

(d) ~~The size of the d~~***Drainage area upstream of the dam***, in square miles ~~acres~~; and

~~(e) A description of all outlet works, including the length of the spillway and a description of any gates.~~

(e) Primary spillway freeboard in feet; and

(f) Discharge capacity of the dam assuming no manual operations with water level one foot from the top of the dam, in cubic feet per second.

Env-Wr ~~505.08~~***504.07*** ~~Impact of Breach~~. Appendix B of the EAP shall be a summary of the breach analysis ~~impacts associated with a failure of the dam under both the sunny day flow and 100-year design event conditions. The summary shall be~~; written so as to be easily understood during an actual emergency, in order to provide local emergency responders with a ~~brief~~***clear and concise*** descriptions of the areas downstream of the dam which would be affected by a dam failure ***in each of the breach scenarios***.

Env-Wr ~~505.09~~ ~~Dam Monitor and Testing~~. Appendix D of the EAP shall include:

~~(a) The following information regarding the monitor(s) required by Env-Wr 303.04:~~

~~(1) Name, address and home and business telephone numbers;~~

~~(2) Type of training provided by owner; and~~

~~(3) Type of communication system between dam and local community; and~~

~~(b) The following information regarding EAP testing:~~

~~(1) A narrative describing the testing procedures, as outlined in Env-Wr 507.01;~~

~~(2) A summary of the responsibilities of the owner and the roles of any individuals or state or local agencies involved in the testing; and~~

~~(3) The name and mailing address of the person responsible for collecting the notification checklists after testing or after an actual emergency condition.~~

~~Env-Wr 505.10 Local Evacuation Procedure and Recovery. Appendix E shall include any evacuation and recovery plans developed by the community(ies). If the community(ies) have not developed such plans, the owner shall so indicate in this appendix.~~

Env-Wr ~~505.11~~**504.08** ~~List of Official EAP Holders~~**Posting of the Plan.** Appendix ~~F-D~~ shall ~~be~~**include, at a minimum, the telephone numbers and email addresses** a listing of all **of the following** individuals, **entities**, and local and state agencies holding official copies of the EAP, as follows:

- (a) ~~The mailing addresses and telephone numbers of the local emergency responders, including police and fire departments in accordance with the town's procedures;~~
- (b) ~~The mailing addresses and telephone numbers of dispatchers for~~**regional/local dispatcher(s) for local** emergency responders;
- (c) ~~The mailing addresses and telephone numbers of the local emergency management director(s);~~
- (d) ~~The telephone number of the contact person at the New Hampshire department of safety, bureau~~**division of emergency management services and communications (911);**
- (e) ~~The telephone number of the contact person at the New Hampshire department's~~**of environmental services, division of water, dam bureau;**
- (f) ~~The telephone number of the contact person at the New Hampshire department of safety, division of~~ state police;
- (g) ~~The names, mailing addresses, and telephone numbers of the owners of downstream dams that would be affected by a dam breach;~~
- (h)**(g)** ~~The telephone number of the contact person at the New Hampshire department of transportation, highway district 5, dispatch section~~**division of operations, transportation systems, management & operations;**
- (i)**(h)** ~~If state roads would be impacted by a dam failure, the name and telephone number of the contact person at the appropriate~~**The appropriate district office(s) of the New Hampshire department of transportation highway district office, division of operations, bureau of highway maintenance;**
- (j)**(i)** ~~The telephone number of the contact person at the New Hampshire department of safety, division of homeland security and emergency communications section (911)~~**management; and**
- (j) Any other person or entity included on the notification flowchart included in the EAP.**

~~Env-Wr 505.12 Documentation. Appendix G shall include copies of signed acknowledgement forms, as described in Env-Wr 504.02, and any correspondence relative to the EAP's development.~~

PART Env-Wr ~~506~~**505** FINAL DISTRIBUTION; PUBLIC NOTICE

Env-Wr ~~506.01~~**505.01** EAP Distribution. Upon receiving department approval of the draft EAP pursuant to ~~Env-Wr 505.01~~ **Env-Wr 504.01**, the owner shall distribute the **approved** EAP to **persons and entities** local and state emergency response personnel who have responsibilities for implementing the EAP, as listed in ~~Env-Wr 505-~~ **as identified in Env-Wr 504.08.**

Env-Wr ~~506.02~~ **505.02** Public Notice. If the local community(ies) request information relative to the EAP to be ~~given to~~ **shared with** the general public, the owner shall ~~provide such information either by mail to all residential, industrial, and commercial buildings within the inundation area or~~ **cooperate** by holding **participating in** an informal meeting at a location near the dam or the inundation area.

PART Env-Wr ~~507~~**506** TESTING AND UPDATING PROCEDURES

Env-Wr ~~507.01~~**506.01** Notification Test.

(a) Prior to conducting a test of the notification flowchart, the owner shall review the EAP and if any changes are needed, the owner should proceed in accordance with Env-Wr 506.02 before initiating the test;

~~(a)~~**(b)** The owner shall conduct a test of the ~~emergency communication network~~ ***notification flowchart*** within one month of approval of the EAP and every 2 years thereafter for a high hazard dam and every 4 years thereafter for a significant hazard dam.

~~(b)~~**(c)** The test shall consist of the owner making the primary contact as shown on the flow-chart and indicating that a required test of the EAP is being conducted.

~~(c)~~ The owner shall request each individual or agency contacted during the test to execute its duties relative to the notification flow chart, complete the checklists, and return the checklists to the owner.

~~(d)~~ Within ~~307~~ days of conducting the test, the owner shall ***either***: inform the department of the results of the test, indicating the time it took each individual and agency to make their notifications and whether miscommunications occurred:

(1) Notify the department after verifying that a successful test occurred by contacting the final contact in each flowline of the notification flowchart. The portion of the notification flowchart with calls initiated by the New Hampshire State Police need not be included in the verification process; or

(2) Notify the department that the test was unsuccessful and within 10 days of the notification, determine where problems occurred, modify the notification flowchart and other portions of the EAP, as necessary, and repeat test. Following completion, notify the department pursuant to (d)(1), above.

~~(e)~~ The owner shall provide records of communication for each individual and agency, including time of contact and person contacted, if the notifications were not made within a 15 minute time period.

Env-Wr ~~507.02~~**506.02** EAP Review and Changes.

(a) If the owner becomes aware of any changes necessary to the notification flow- chart, either as a result of the notification test or by other means, the owner shall:

(1) Make the changes to the notification ~~flow-chart~~ ***flowchart*** and in other portions of the EAP ***that related to these changes*** as necessary; and

(2) Distribute updated ~~pages~~ ***flowcharts*** to all holders of the EAP.

(b) The owner shall review the entire EAP annually to ensure ~~the~~ its accuracy ~~of the notification flow-chart and inundation areas.~~

(c) If ~~development has occurred within the inundation area~~ ***changes outside the scope of Env-Wr 506.02(a) are needed***, the owner shall:

(1) Revise the ~~inundation map to show the new development~~ ***EAP in accordance with chapter Env-Wr 500 to reflect these changes***; and

(2) Distribute the updated ~~map~~ ***EAP*** to all holders of the EAP.

(d) The owner shall submit written documentation ***or email confirmation*** to the department that the annual review of the EAP was performed, by providing one of the following:

(1) A statement that the EAP was reviewed and that no changes to the EAP ~~were~~ ***are*** necessary; or

~~(2) Any applicable sections of the EAP which required revision.~~

(2) An electronic copy in .pdf format of the entire, revised EAP and confirmation that the revised EAP has been distributed to all holders of the EAP.

~~Env-Wr 507.03 Reprinting of EAP.~~

~~— (a) The owner shall reprint the entire EAP document and distribute the pages to all holders of the EAP every 8 years, to ensure that all holders have complete and orderly copies, unless:~~

~~(1) No changes have been required; or~~

~~(2) Changes have been made only to the notification flow chart, and copies of the updated flow chart have been distributed to all EAP holders.~~

~~— (b) When a reprint of the EAP is required, the owner shall:~~

~~(1) Send the reprint return receipt requested; or~~

~~(2) Include forms with the mailing to be signed by the EAP holders and returned to the owner, indicating that a copy of the reprinted EAP was received.~~

~~— (c) If there have been no changes to the inundation map since the last reprint of the EAP and the owner does not include an inundation map in the mailing, the owner shall:~~

~~(1) Specify the date of the current inundation map; and~~

~~(2) Include a check-off item on the form required by (b), above, indicating the EAP holder has a copy of the current inundation map.~~

~~— (e) If an EAP holder does not have the current inundation map, the owner shall provide a copy of the map to the EAP holder upon being so notified by the EAP holder.~~

CHAPTER Env-Wr 600 REMOVAL OF DAMS

PART Env-Wr 601 PURPOSE AND APPLICABILITY

Env-Wr 601.01 Purpose. The purpose of the rules in this chapter is to specify the procedures to be followed when proposing to remove a dam under the auspices of the department's river restoration program and the criteria that will be applied in reviewing such proposals.

Env-Wr 601.02 Applicability. The requirements of this part shall apply to any person who seeks to remove a dam under the auspices of the department's river restoration program.

PART Env-Wr 602 DAM REMOVAL PROPOSALS

Env-Wr 602.01 Qualifying Removals.

(a) In order to qualify as a dam removal under this chapter, the structure shall be removed:

- (1) To at least the depth of the natural streambed elevation; and
- (2) Subject to (b) and (c), below, to the width of the free-flowing ordinary high-water mark of the river or stream in the area of the footprint of the dam from bank to bank.

(b) The person seeking to remove a dam pursuant to this chapter may request the department to approve a narrower opening by submitting the request in writing with the following:

- (1) The width of the free-flowing ordinary high-water mark of the river or stream in the area of the footprint of the dam from bank to bank, in feet;
- (2) The width of the proposed opening, in feet, at:
 - a. The natural streambed elevation;
 - b. The ordinary high-water mark ***line and/or elevation***; and
 - b. The widest point of the opening, if other than the natural streambed elevation or ordinary high-water mark;
- (3) The shape of the proposed opening; and
- (4) An explanation of how the narrower opening will meet the criteria specified in (c), below.

(c) In addition to the information provided in (b)(1)-(4) above, a hydrologic and hydraulic analyses completed pursuant to Env-Wr 403.05 and Env-Wr 403.06 shall be provided, upon request by the department, in order to demonstrate that the remaining structures no longer qualify as a jurisdictional dam in accordance with RSA 482:2, II.

~~(e)~~(d) The department shall approve the request for a narrower opening if the department determines that:

- (1) The structure will no longer be considered a dam as defined in RSA 482:2, II;
- (2) The remains of the dam between the ordinary high-water marks on both sides of the river will not create a safety hazard to the public when using the river;
- (3) The natural flow of sediment and nutrients will not be impeded; and
- (4) The passage of fish and/or other aquatic species will not be impeded.

Env-Wr 602.02 Dam Removal Proposal. The person seeking to remove a dam shall ***complete and*** submit:

(a) An application for a permit as required under RSA 482-A and Env-Wt 100 et seq., including the plans and specifications required for that application; and

(b) ***A "Dam Removal Project Attachment for the Wetlands Application" form, NHDES-W-02-003, December 2023, available at: <https://onlineforms.nh.gov/?formtag=NHDES-W-02-003>*** An attachment to the application for dam removal projects as specified in Env-Wr 602.03.

Env-Wr 602.03 Attachments for Dam Removal Projects. The ***following*** information ***shall be*** provided ~~on as the an~~ attachment to the ***form required in (b) above*** application for dam removal projects shall include the following:

~~(a) The name, mailing address, email address and daytime telephone number of the applicant and, if the applicant is not the owner, the name and mailing address of the owner;~~

~~(b) The state dam identification number;~~

~~(c) The hazard classification of the dam;~~

~~(d) The current use of the dam;~~

~~(e) The height and length of the dam, in feet;~~

~~(f) The type of construction of the dam;~~

~~(g) The approximate surface area of the impoundment, in acres;~~

~~(h) The name(s), mailing address(es), and daytime telephone number(s) of the person(s) proposed to remove the dam;~~

~~(i)(a) A description of the proposed methods to remove the dam, including construction sequence, so as to meet the criteria of Env-Wr 602.01 and Env-Wr 604.01(a); and~~

~~(i)(b) An explanation of the purpose for removing the dam;~~

~~(c) ***Plans showing removal design and restoration of site; including existing conditions, overhead view and a cross section of dam to be removed;***~~

~~(d) ***Description of method and location of disposal of dam materials;***~~

~~(e) ***USGS topographic map with property lines indicated;***~~

~~(f) ***Tax map showing property lines and the abutters' properties labeled; and***~~

~~(g) ***Original, dated photos mounted (or digital copies) on 8.5" x 11" sheets of paper clearly illustrating the project impact area with locations of photographs noted on the plans.***~~

PART Env-Wr 603 ~~REVIEW PROCEDURES~~ ***NOTIFICATION***

Env-Wr 603.01 Notification. ***The person proposing to remove a dam impounding 10 acres or more shall comply with the requirements of RSA 482:13.***

~~(a) The person proposing to remove a dam shall notify the local governing body of the municipality or municipalities in which the dam or the water body formed by the dam is located in accordance with RSA 482:13, I.~~

~~(b) The person proposing to remove the dam shall provide a copy of the notice sent pursuant to (a), above, to the department.~~

~~Env-Wr 603.02 Review.~~

~~— (a) Upon receiving an application to remove a dam, the department shall review the application to determine whether it is complete.~~

~~— (b) If the department determines that all of the information required by Env-Wr 602.02 or the notice required by Env-Wr 603.01(b) has not been submitted, the department shall notify the person proposing to remove the dam of what is needed to complete the application.~~

~~— (c) After receiving a complete application and after the meeting required by RSA 482:13, it has been held, the department shall review the application.~~

PART Env-Wr 604 APPROVAL; REPORT

Env-Wr 604.01 Dam Removal Approval.

- (a) The department shall approve the removal of the dam if the applicant:
- (1) Proposes a dam removal project that meets the criteria of Env-Wr 602.01; and
 - (2) Demonstrates that the dam removal will be performed in a manner that:
 - a. Will not cause damage to structures downstream of the dam; and
 - b. Will not cause environmental damage that cannot self-restore within one year.

(b) The department shall notify the applicant and the owner, if the applicant is not the owner, in writing of its decision.

Env-Wr 604.02 Post-Removal Report. Upon completion of the removal, the person removing the dam shall file with the department a written statement certifying that the removal was completed in accordance with the approved plans and specifications.

CHAPTER Env-Wr 700 LAKE LEVEL DETERMINATIONS

PART Env-Wr 701 PURPOSE AND APPLICABILITY

Env-Wr 701.01 Purpose. The purpose of the rules in this chapter is to specify the procedures to be followed when a lake level investigation is conducted pursuant to RSA 482:79.

Env-Wr 701.02 Applicability. The requirements of this chapter shall apply to any lake level investigation initiated pursuant to RSA 482:79.

PART Env-Wr 702 REQUEST; PRELIMINARY INVESTIGATION

Env-Wr 702.01 Formal Request.

- (a) A request for a lake level investigation pursuant to RSA 482:79 shall be:
- (1) In writing; and
 - (2) Mailed or delivered to the department at the following address:

Lake Level Determination Request
Department of Environmental Services
Water Division
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

(b) The request shall state clearly the reason(s) for the request.

(c) The request shall be signed by at least 10 property owners whose land abuts the water body whose water level is the subject of the request.

Env-Wr 702.02 Preliminary Investigation.

(a) As required by RSA 482:79, the department shall commence a preliminary investigation of conditions affecting the use and enjoyment of a water body under any of the following circumstances:

- (1) Upon receipt of a request per Env-Wr 702.01;
 - (2) Upon request of the New Hampshire attorney general; or
 - (3) On its own motion, when information received by the department warrants further investigation.
- (b) The department shall investigate:
- (1) The current and past management and control of the outlet; and
 - (2) The effects, if any, of such management and control on:
 - a. The use and enjoyment of shore property above the outlet;
 - b. Any riparian rights below the outlet; and
 - c. The use and enjoyment of the waters above and below the outlet by the public and by owners of littoral or riparian property.

(c) Based upon the preliminary investigation, the department shall determine whether the management and control of the outlet is having a serious and adverse effect on any of the factors identified in (b)(2), above.

(d) For purposes of the determination in (c), above, a “serious and adverse effect” means an impact that has a reasonable likelihood of interfering with the use and enjoyment of littoral or riparian property or public waters by:

- (1) Eroding shorelines above or below the outlet;
- (2) Flowing property that is not covered by a flowage easement;
- (3) Interfering with access to the waters above or below the outlet;
- (4) Causing the waters above or below the outlet to be unsuitable for navigation or recreation;
- (5) Causing harm to aquatic or land-based habitat; or
- (6) Any combination of (1) through (5), above.

PART Env-Wr 703 FURTHER INVESTIGATIONS; PUBLIC HEARING

Env-Wr 703.01 Further Investigation and Public Hearing.

(a) If the department finds a serious and adverse effect under Env-Wr 702.02(c) and (d), the department shall conduct a further investigation.

(b) If the department determines that a public hearing to receive information would be helpful to its further investigation, the department shall schedule and conduct the public hearing in accordance with Env-C 200 relative to non-adjudicative procedures.

Env-Wr 703.02 Determinations. Based on the further investigation, the department shall:

- (a) Ascertain the rights of the owner of the outlet by considering whether:

- (1) The dam is registered with the department;
 - (2) Flowage is within any clear deeded flowage limits;
 - (3) Base flows are sufficient to accommodate downstream riparian rights;
 - (4) The operation is in accordance with any deeded rights associated with the former mill dam act, RSA 482:17 through RSA 482:41, if applicable; and
 - (5) Any other factors that are within the jurisdiction of the department under RSA 482 have been identified by the owner as affecting the rights of the owner.
- (b) Ascertain the rights of the public and owners of property above and below the outlet, by considering the following:
- (1) Whether there is public access to the impoundment or the stream below the outlet via a government-owned access point;
 - (2) The extent to which the impoundment or the stream below the outlet is used for fishing, including whether the impoundment is stocked by the New Hampshire fish and game department;
 - (3) What range of water levels is optimum for the ecological health of the impoundment and the stream below the outlet;
 - (4) The extent to which the impoundment or the stream below the outlet is used for navigation and what range of water levels is optimum for such navigation;
 - (5) The extent to which the impoundment or the stream below the outlet is used for swimming and what range of water levels is optimum for swimming; and
 - (6) The extent to which the impoundment or the stream below the outlet is used for other recreation and range of what water levels is optimum for such other recreation.
- (c) In making its determination, the department shall consider all information and testimony presented as part of the proceeding.

PART Env-Wr 704 FINDINGS; DECISION

Env-Wr 704.01 Findings. After completing its further investigation in accordance with Env-Wr 703, the department shall prepare written findings regarding whether:

- (a) The management and control of the outlet is adversely affecting the rights of owners of property above the outlet by eroding shorelines, flowing property not covered by a flowage easement, preventing access to property that is accessible only by boat, or interfering with the use and enjoyment of the water for recreational purposes, including boating, swimming, and fishing;
- (b) The management and control of the outlet is adversely affecting the rights of owners of property below the outlet by eroding shorelines, releasing insufficient water for reasonable riparian uses, or interfering with the use and enjoyment of the water for recreational purposes, including boating, swimming, and fishing;
- (c) The management and control of the outlet is adversely affecting the rights of the public to use public waters for navigation or recreational purposes, including boating, swimming and fishing;
- (d) The management and control of the outlet is lawful;

(e) The benefits of the current management and control of the outlet outweigh any adverse effects that may be occurring;

(f) Changes to the management and control of the outlet would be of benefit to the public and private interests concerned; and

(g) Changes in the management and control of the outlet to benefit the use and enjoyment of the waters above or below the outlet by the public or by owners of property above or below the outlet would deprive the owner of the outlet or others of rights to which they are lawfully entitled.

Env-Wr 704.02 Report of Findings; Decision. Based upon its findings, the department shall:

- (a) Order no change in the management and control of the outlet if it finds that:
- (1) The benefits of the present management and control of the outlet outweigh any adverse effects on the public and on owners of property above or below the outlet; and
 - (2) Changes in the management and control of the outlet would not be expected to produce benefits that:
 - a. Are greater than those resulting from the present management; and
 - b. Would outweigh any adverse effects of the changes;
- (b) Order changes in the management and control of the outlet if the benefits expected from the change are:
- (1) Greater than the benefits from the present management and control of the outlet; and
 - (2) Expected to outweigh any adverse effects of the changed management and control of the outlet;
- (c) Report to the governor and council its findings, including an estimate of damages, if it finds that changes in the management and control would be of benefit to the public and private interests concerned but would deprive the owner of the outlet or others of rights to which they are lawfully entitled; or
- (d) Report to the attorney general if the management and control of the outlet is unlawful.

Appendix A

Rule Section(s)	State Statute(s) Implemented
Env-Wr 301	RSA 482:1; RSA 482:2; RSA 482:87
Env-Wr 302	RSA 482:5; RSA 482:11-a; RSA 482:12; RSA 482:87
Env-Wr 303	RSA 482:5; RSA 482:8-a; RSA 482:11-a; RSA 482:12; RSA 482:87
Env-Wr 304	RSA 482:5; RSA 482:87
Env-Wr 401	RSA 482:1; RSA 482:7; RSA 482:9 – 11-a; RSA 482:29 – 31; RSA 482:87
Env-Wr 402	RSA 482:1; RSA 482:7; RSA 482:9 – 11-a; RSA 482:29 – 31; RSA 482:87
Env-Wr 403	RSA 482:1; RSA 482:7; RSA 482:9 – 11-a; RSA 482:29 – 31; RSA 482:87
Env-Wr 404	RSA 482:1; RSA 482:7; RSA 482:9 – 11-a; RSA 482:29 – 31; RSA 482:87
Env-Wr 405	RSA 482:1; RSA 482:7; RSA 482:9 – 11-a; RSA 482:29 – 31; RSA 482:87
Env-Wr 501	RSA 482:1; RSA 482:11-a; RSA 482:12; RSA 482:87
Env-Wr 502	RSA 482:1; RSA 482:11-a; RSA 482:12; RSA 482:87
Env-Wr 503	RSA 482:1; RSA 482:11-a; RSA 482:12; RSA 482:87
Env-Wr 504	RSA 482:1; RSA 482:11-a; RSA 482:12; RSA 482:87
Env-Wr 505	RSA 482:1; RSA 482:11-a; RSA 482:12; RSA 482:87
Env-Wr 601	RSA 482:1; RSA 482:2; RSA 482:87
Env-Wr 602	RSA 482:1; RSA 482:2; RSA 482:87
Env-Wr 603	RSA 482:1; RSA 482:2; RSA 482:87
Env-Wr 604	RSA 482:1; RSA 482:2; RSA 482:87
Env-Wr 701	RSA 482:1; RSA 482:4; RSA 482:79-83; RSA 482:87
Env-Wr 702	RSA 482:1; RSA 482:4; RSA 482:79-83; RSA 482:87
Env-Wr 703	RSA 482:1; RSA 482:4; RSA 482:79-83; RSA 482:87

Appendix B: Incorporation by Reference Information

Rule	Title (Date)	Obtain at:
Env-Wr 303.11(c)(2) Env-Wr 403.03(b)(1)	“Engineering Guidelines for Evaluation of Hydropower Projects”, Chapter 3 (2016) and Chapter 4 (2006)	Federal Energy Regulatory Commission 888 First Street, N.E. Washington, DC 20426 (202)-502-8004 Download at no cost from: https://www.ferc.gov/industries-data/hydropower/dam-safety-and-inspections/eng-guidelines
Env-Wr 403.04(a)(3) Env-Wr 403.04(a)(4)	Hydrometeorological Report No. 52, Application of Probable Maximum Precipitation Estimates - United States East of the 105th Meridian (1982)	National Oceanic and Atmospheric Administration (NOAA) Hydrometeorological Design Studies Center, W/OHD12 Office of Hydrologic Development National Weather Service/NOAA 1325 East-West Highway Silver Spring, MD 20910-3283 Download at no cost from: https://www.weather.gov/media/owp/hdsc_documents/PMP/HMR52.pdf
Env-Wr 403.05(a)	NRCS “National Engineering Handbook”, Part 630, Hydrology, Chapters 4, 6-10, 14-17, March 2020	Download at no cost from: NRCS eDirectives - Part 630 - Hydrology (usda.gov)
Env-Wr 403.05(a)(1)	HEC-HMS, version 4.11	U.S. Army Corps of Engineers Hydrologic Engineering Center 609 Second Street Davis, CA 95616 (530) 756-1104 Download at no cost from: HEC-HMS Downloads (army.mil)
Env-Wr 403.05(a)(2) and 502.05(a)(1)	HEC-RAS, version 6.3.1 (2010)	U.S. Army Corps of Engineers Hydrologic Engineering Center 609 Second Street Davis, CA 95616 (530) 756-1104 Download at no cost from: HEC-RAS Downloads (army.mil)

Rule	Title (Date)	Obtain at:
Env-Wr 403.05(a)(3)	HydroCAD® Stormwater Modeling, version 10.2	HydroCAD® Stormwater Modeling P.O. Box 477 Chocorua, NH 03817 800-927-7346 Purchase from HydroCAD® Stormwater Modeling (\$295) at: Pricing & Ordering (hydrocad.net)
Env-Wr 403.05(b)(1)	Extreme Precipitation in a Changing Climate for New York and the New England States”, version 2.0	USDA, NRCS and Cornell University’s Northeast Regional Climate Center Access for free at: Extreme Precipitation (cornell.edu)
Env-Wr 403.05(b)(2)	NOAA Atlas 14, Precipitation-Frequency Atlas of the United States”, Volume 10, Version 3.0, 2019	National Oceanic and Atmospheric Administration, National Weather Service Access for free at: Hydrometeorological Design Studies Center (weather.gov)
Env-Wr 403.05(b)(3)	Hydrometeorological Report No. 51, Probable Maximum Precipitation Estimates, United States East of the 105 th Meridian (1978)	NOAA Hydrometeorological Design Studies Center, W/OHD12 Office of Hydrologic Development National Weather Service/NOAA 1325 East-West Highway Silver Spring, MD 20910-3283 Download at no cost from: https://www.weather.gov/media/owp/hdsc_documents/PMP/HMR51.pdf
Env-Wr 403.06(a)	“Handbook of Hydraulics”, Eighth Edition, (2017)	McGraw-Hill Education 860 Taylor Station Road Blacklick, OH 43004 (877) 833-5524 Purchase for \$110 at: https://www.concrete.org/store/productdetail.aspx?ItemID=318U19&Language=English&Units=US_Units

Rule	Title (Date)	Obtain at:
Env-Wr 403.07(a)(1)	ACI 318-19(22), “Building Code Requirements for Structural Concrete & Commentary” (2019)	American Concrete Institute 38800 Country Club Dr. Farmington Hills, MI 48331-3439 (248)-848- 3700 3800 Purchase from Portland Cement Association (\$284) at: http://www.cement.org/bookstore/profile.asp?id=8665
Env-Wr 403.07(a)(2)	ACI 350-20 and ACI 350R-20: “Code Requirements for Environmental Engineering Concrete Structures and Commentary” (2020)	American Concrete Institute 38800 Country Club Dr. Farmington Hills, MI 48331-3439 (248)-848-3800 Purchase from Portland Cement Association (\$215) at: https://www.concrete.org/store/productdetail.aspx?ItemID=35020&Language=English&Units=US_Units
Env-Wr 403.08(a)	“Steel Construction Manual”, Fifteenth Edition (2017)	American Institute of Steel Construction 130 East Randolph, Suite 2000 Chicago, IL 60601-1802 (800) 644-2400 Purchase \$400 for non-members, \$200 for members) from: https://www.aisc.org/products/publication/manuals/steel-construction-manual-15th-ed-print
Env-Wr 403.09(a)(2)	“Timber Construction Manual”, Sixth Edition (2012)	American Institute of Timber Construction 7012 S. Revere Parkway, Suite 140 Englewood, CO 80112 (303) 792-9559 Purchase (\$146.95) from: https://www.wiley.com/en-us/Timber+Construction+Manual%2C+6th+Edition-p-9780470545096
Env-Wr 403.09(a)(2)	“2018 National Design Specification for Wood Construction” (2018)	American Wood Council 222 Catocin Cir SE Suite 201 Leesburg, VA 20175 (202) 463-2766 Purchase (\$130) from: https://www.abdi-ecommerce10.com/AWC/p-405-2018-nds-electronic.aspx

Rule	Title (Date)	Obtain at:
Env-Wr 403.10(a)	Earth Dams and Reservoirs Technical Release, T.R. 210-60 (2019)	USDA, NRCS 1400 Independence Av., SW Washington, DC 20250 (202) 720-2791 Download at no cost from: https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=43317.wba
Env-Wr 403.10(b)	“Evaluation and Monitoring of Seepage and Internal Erosion” FEMA P-1032, May 2015	Download at no cost from: FEMA P-1032: Evaluation and Monitoring of Seepage and Internal Erosion cuments/rule_ref_book.pdf
Env-Wr 403.10(c)	“Filters for Embankment Dams – Best Practices for Design and Construction” FEMA, October 2011	Download at no cost from: https://www.fema.gov/sites/default/files/2020-08/filters_embankment_dams_update.pdf
Env-Wr 403.10(d)	“Technical Manual: Conduits through Embankment Dams” FEMA L-266, September 2005	Download at no cost from: https://www.swc.nd.gov/pdfs/conduits_embankment_dams.pdf
Env-Wr 403.10(e)	“Technical Manual: Overtopping Protection for Dams” FEMA P-1015, May 2015	Download at no cost from: https://www.fema.gov/sites/default/files/2020-08/fema_1015-p_ordering_hardcopies-CD-DVD.pdf
Env-Wr 403.10 (f)	“Technical Manual: Plastic Pipe Used in Embankment Dams” FEMA P-675, November 2007	Download at no cost from: https://www.fema.gov/sites/default/files/2020-08/femap_675.pdf

Rule	Title (Date)	Obtain at:
Env-Wr 403.10(g)	NRCS “National Engineering Handbook”, Part 628, Articulated Concrete Block Armored Spillways, Chapter 54, March 2019	Download at no cost from: NRCS eDirectives - Part 628 - Dams (usda.gov)

Appendix C: Statutory Definitions

RSA 482:2

I. “Classification of a dam” means the potential hazard classification placed on a dam by the department based on the potential threat to life and the potential extent of property damage in the event of accidental damage to, or failure of, the dam structure. The classifications shall be “non-menace,” “low hazard potential,” “significant hazard potential,” or “high hazard potential.”

II. (a) “Dam” means any artificial barrier, including appurtenant works, which impounds or diverts water and which has a height of 6 feet or more, or is located at the outlet of a great pond. A roadway culvert shall not be considered a dam if its invert is at the natural bed of the water course, it has adequate discharge capacity, and it does not impound water under normal circumstances. Artificial barriers which create surface impoundments for liquid industrial or liquid commercial wastes, septage, or sewage, regardless of height or storage capacity, shall be considered dams.

(b) An artificial barrier at a storm water detention basin, which impounds 0.5 acre-foot or less of water during normal conditions, shall not be considered a dam unless its height is 10 feet or greater or its maximum storage is 6 acre-feet or greater.

V. “Dam in disrepair” means a dam which is a menace to public safety and is incapable of safely impounding flood waters to its crest, or is incapable of maintaining a reasonably constant level of waters impounded, or is one which does not contain adequate gates and sluiceways to provide for the holding or controlled discharge of waters impounded.

VI. “Emergency action plan” means a written document delineating a prescribed sequence of actions to be taken by a dam owner to inform the authorities and others downstream of an impending or actual sudden release of water caused by an accident to, or failure of, the dam. This plan shall be developed in consultation with local officials and notification of the plan shall be given to the general public who would be affected by a sudden release of water caused by an accident or other failure of the dam. The plan shall be kept on file with the local emergency management director and other local officials as deemed appropriate by the department.

VII. “Mills” shall include both manufacturing plants and plants at which electric power is generated for public distribution or for the operation of mills, railroads or public utilities.

VIII. “Person” means any individual, partnership, association, corporation, company, organization or legal entity of any kind.

X. “Reconstruction” means:

- (a) A change in the height, length, or discharge capacity of the structure;
- (b) Restoring a breached dam or one in ruins;
- (c) Modification of flashboards which either increases their height or increases the headwater elevation at which the flashboards will fail; or

(d) A change in the structural configuration of a dam.