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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.

Source. #4399, eff 4-19-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 301.02 Applicability.

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

- (1) Any structure which qualifies as a dam in accordance with RSA 482:2, II; and
- (2) Any roadway culvert meeting the requirements 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4399, eff 4-19-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 301.03 Roadway Culverts. A roadway embankment whose culvert is set at the natural streambed shall be considered a dam if during the 25 year storm:

(a) The water surface elevation at the culvert inlet is 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4399, eff 4-19-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 302.02 Dam Inspections.

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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 Env-Wr 600; or
- (2) Breach or modify the dam in accordance with Env-Wr 302.05.

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 302.05 Controlled Breach; Modifications to Lower Impoundment.

(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.

(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, and daytime telephone number of the owner;
- (2) The date of the department's order to repair or reconstruct 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;
 - 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) A detailed explanation of the specific work that will be performed, including anticipated flows during the work and the effect of such flows on upstream and downstream property and public safety;
- (6) The name(s), mailing address(es), and daytime telephone number(s) of the person(s) proposed to perform the work; and
- (7) A proposed schedule for the work, which shall include time for the notice and hearing required by RSA 482:13.

(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.

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(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 the breach or modification of the dam 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 relative to discharge capacity will be met as a result of the proposed work.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 302.06 Notification to Public. After receiving approval pursuant to Env-Wr 302.05, the owner shall refrain from undertaking the work until the requirements of RSA 482:13 relative to notice to municipalities and hearing have been met.

Source. #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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 on 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-10-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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) 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.

(c) Upon 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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 to the department that includes the following:

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

(2) The dam 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

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

(3) The results of a dam breach analysis, including routing of the flow downstream of the dam, completed in accordance with Env-Wr 502; and

(4) An assessment of all structures potentially impacted by a dam failure, including 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; 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.

(d) The department shall notify the owner of its decision in writing within 60 days of receiving complete information.

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Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.05 Operation and Maintenance Plan.

(a) The owner of a low hazard, significant hazard, or high hazard dam shall submit a written operation and maintenance plan for approval by the department.

(b) The operation and maintenance plan shall:

- (1) Describe the seasonal control of impoundment 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

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(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) The owner shall update the operation and maintenance plan as necessary and shall submit a written update to the department within 15 days of 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) The owner shall operate and maintain the dam in accordance with the approved operation and maintenance plan.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4354, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.06 Emergency Action Plan Required.

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

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

(c) The operation and maintenance plan prepared by the owner of a low hazard dam shall constitute the EAP for that dam.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.07 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.

(c) An owner wishing to perform a controlled breach or otherwise modify the dam to lower the impoundment to a safe level shall proceed in accordance with Env-Wr 302.05.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; rpld by #5080, eff 2-22-91

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.08 Transfer of Ownership.

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

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- (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;
 - (2) The dam number assigned by the department; and
 - (3) Any letters or orders issued by the department relative to the condition of the dam.
- (c) 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 dam number assigned by the department;
 - (3) The name, mailing 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.09 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 police and fire departments 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, the owner shall make such notification as soon as reasonably possible, but never more than one hour after the initiation of the emergency breach.
- (d) Within 30 days of performing an emergency breach, the owner shall submit an application to the department:
- (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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.10 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.

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(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 days of performing the emergency repairs, the owner shall submit an application to the department to reconstruct a dam in accordance with Env-Wr 400.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.11 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 flood, or at the owner's option, the site specific inflow design flood;
- (2) Significant hazard dams shall pass the 100-year 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, or at the owner's option, the site specific inflow design flood.

(b) 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.12 Meeting Discharge Capacity Requirements.

(a) If a dam does not have adequate discharge capacity to pass the flood specified in Env-Wr 303.11 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;
- (2) Specify the proposed timeframe for taking the action; and
- (3) Include the results of hydrologic analyses completed pursuant to Env-Wr 403.05, assessing the floods 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 with one foot of freeboard and without manual operations;
- (2) Submit a stability analysis to the department showing that the dam is safe against sliding, overturning, or erosion by overtopping, as applicable, during the specified flood, using the methods outlined in "Engineering Guidelines for Evaluation of Hydropower Projects" published by the Federal Energy Regulatory Commission (FERC), Chapter 3 dated 2002 and Chapter 4 dated 1991, available as noted in Appendix B;
- (3) Stabilize the dam so that it is safe under the specified flood conditions; or

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- (4) Modify the dam so that the hazard classification is lowered and the dam passes the appropriate flow for 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;
 - (2) The work can be done in a way that will not:
 - a. Endanger life or property downstream of the dam; or
 - 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.
- (f) If work under the plan as approved constitutes reconstruction of the dam, the owner shall submit an application in accordance with Env-Wr 400.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 303.13 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:
 - (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) The current condition of the dam is such that it is not expected to fail under flow conditions anticipated during the extension; and
 - (4) 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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” and a copy of RSA 482:5.

(c) Upon written notice from the department that an existing dam is non-permitted, the owner shall file the following information on or with, as applicable, the permit application form:

- (1) The height and length of the dam, in feet;
- (2) 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) 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) An operation and maintenance plan prepared as specified in Env-Wr 303.05;
- (10) 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.

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

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

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 304.03 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 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 304.04 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

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 304.05 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.

Source. #8414, eff 8-20-0; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-0; ss by #10510, eff 1-22-14

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 or Env-Wr 303.10.

(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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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PART Env-Wr 402 APPLICATION PROCEDURES

Env-Wr 402.01 Application Filing.

(a) An application to construct a dam shall be filed by the owner(s) of the property 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), shall be filed by the owner(s) of the dam.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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) The applicant shall provide the following information on or with the form:

- (1) The name, mailing address, and daytime telephone number of each applicant;
- (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 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;
- (9) 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.

(c) 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.

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

(g) 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

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

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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;

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(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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

(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;

(2) Breach routing in accordance with Env-Wr 502.07; 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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 embankment slopes;

(4) Gradation analysis for all soils to be used during construction;

(5) Compaction specifications in accordance with Env-Wr 403.02(d) and (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

(b) A written operation and maintenance plan, which:

(1) Describes the seasonal control of impoundment levels;

(2) Describes regular maintenance activities; and

(3) Includes the name(s) and address(es) of the dam monitor(s).

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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 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 significant hazard or 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 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, 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 dam on a great pond, the department shall send the notice to all municipalities in which the great pond is located.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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 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 6 feet or greater;

(c) Any earthen spillway shall be constructed in natural ground;

(d) Soil compaction specifications shall be shown on the plans; and

(e) Pre-compacted lift thickness shall be compatible with the material and equipment to be used, but no greater than 12 inches in depth.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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 a professional engineer, licensed in the State of New Hampshire, 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 project shall be inspected in accordance with Env-Wr 405; and
- (3) A construction inspection plan, prepared in accordance with Env-Wr 405.04, shall accompany the application for construction or reconstruction.

(b) 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, or municipal sewage, shall be equipped with a pond drain.

(c) A design for construction 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 and Chapter 4 dated 1991, 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 emergency action plan (EAP), or if an EAP has already been approved, an updated EAP, in accordance with 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 403.04 Design Floods for New Dams.

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

- (1) A non-menace structure shall pass the 50-year flood or, at the owner's option, the site-specific inflow design flood, with 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 or, at the owner's option, the site-specific inflow design flood, with one foot of freeboard or, at the owner's option, freeboard equal to the effects of maximum wave run-up;

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(3) A significant hazard structure shall pass $\frac{1}{2}$ of the probable maximum flood (PMF) as determined using Hydrometeorological Report No. 52 (HMR 52) from the National Oceanic and Atmospheric Administration (NOAA), 1987, 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, 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) 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 403.05 Hydrologic Investigations.

(a) Hydrologic investigations shall be performed on the entire contributing drainage area.

(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

(2) 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) Hydrologic modeling for 50-year or 100-year storms shall incorporate 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.

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(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 so as to ensure that the total runoff volume will be included in the routing of the storm through the dam structure.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 403.06 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) The department shall use one or more of the following texts in evaluating the competence of the submitted design:

(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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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) 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, American Concrete Institute, 2005, available as noted in Appendix B;

(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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

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

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

Source. #8414, eff 8-20-0; ss by #10510, eff 1-22-14

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) 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 Edition, dated 1994, available as noted in Appendix B; or

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

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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) USDA NRCS Earth Dams and Reservoirs Technical Release 60 (TR 60), 2005, 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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:

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(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.

(c) 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) 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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 from the registry of deeds.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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 2 years from the date of issuance;

(b) Work under the permit shall be completed within 2 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;

(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;

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

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

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

(j) The owner shall maintain a current mailing address with the department;

(k) The owner shall operate and maintain the structure in accordance with the written operation and maintenance procedures submitted in accordance with Env-Wr 402.06(b); and

(l) 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-0; ss by #10510, eff 1-22-14

Env-Wr 404.04 Time Extension. The department shall grant a 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;

(c) The approved plans meet current design requirements or can be amended to meet current requirements as specified in 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

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

(1) The specific information regarding the requested change; and

(2) The reason the change is being requested.

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(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, if applicable, of the decision on the request in writing. 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 approval.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 405.03 Construction Engineer.

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

(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.

(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 satisfaction of the criterion of (b), above.

(d) The construction engineer shall have ultimate responsibility for:

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

(e) The construction engineer may assign some inspection tasks to a duly-authorized agent provided that the agent's inspection tasks are explicitly identified in the construction inspection plan described in submitted pursuant to Env-Wr 405.04.

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(f) Prior to 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 (g), below.

(g) The construction engineer shall 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;
- (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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 405.04 Inspections During Construction or Reconstruction.

(a) Prior to any work on the dam starting, the owner shall submit a written 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
- (4) Documentation and reporting requirements, including inspection 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) Inspections during construction or reconstruction shall be performed in accordance with the approved plan.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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Env-Wr 405.05 Work Items to be Inspected. The construction engineer shall inspect, document, and photograph the following work items:

- (a) Excavation and sub-grade preparation;
- (b) Pipe placement;
- (c) Placement of graded aggregate drain materials;
- (d) Earthfill;
- (e) Cut-off construction;
- (f) Steel placement;
- (g) Final grading; and
- (h) Pouring of concrete.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

(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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 405.08 Final Inspection Report.

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

(b) The report shall include:

- (1) A copy of all test results;
- (2) The construction engineer's observations of the work items specified in Env-Wr 405.05;
- (3) Representative construction progress photographs;

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- (4) Documentation of department-approved changes in design;
- (5) Documentation and results of all construction inspections, including photographs;
- (6) Foundation conditions observed during excavation; and
- (7) Any other data pertinent to determining the integrity of the structure.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; rpld by #6462-B, eff 2-21-97

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 405.09 Affidavit of Compliance. Within 10 days of completing the project, the construction 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 405.10 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 405.11 Requirements Prior to Impounding.

(a) The owner shall notify the department in writing 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 dam 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;
- (2) Performs a final visual inspection of the dam;
- (3) Approves the emergency action plan; and
- (4) Receives the construction engineer's final inspection report and affidavit of compliance.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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;
- (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:

- (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 filed with the department.

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

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 502.02 Exemption from Breach Analysis.

(a) Subject to Env-Wr 502.03, 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, department shall:

- (1) Notify the owner in writing 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 502.03 Repeal of Breach Analysis Exemption.

(a) If downstream developments 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 a dam breach analysis, as described in Env-Wr 502.06, 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

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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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4580, eff 2-27-89; ss by #5080, eff 2-22-91; ss by #6462-B, eff 2-21-97; ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 502.05 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 impoundment; or
- (b) A change in the discharge capacity would result in reducing or increasing the effects of a dam failure.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

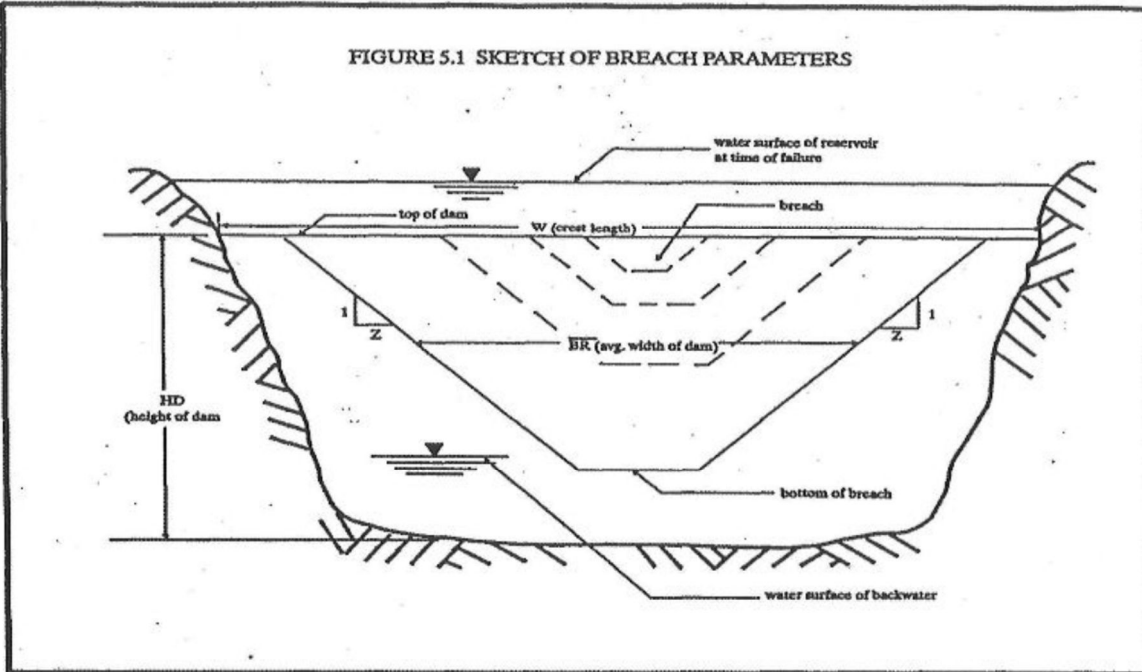
Env-Wr 502.06 Specific Requirements and Breach Parameters.

(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.

(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 $BR \leq 0.5 W$ |
| | 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 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 100-year flood flow.

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

- (1) Be routed downstream of the dam; 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 and the time to reach peak stage.

(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 point at which the water surface elevation due to dam failure is no more than 2 feet above the non-failure conditions in areas of potential threat to life and major property damage; 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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Env-Wr 502.07 Breach Routing Methods.

- (a) The owner shall use one of the following routing methods for dam breach analysis:
- (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 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 502.08 Downstream Dams.

- (a) When there are dams downstream located within the study area as determined by Env-Wr 502.06(g), the owner shall evaluate the effect of the breach flow on these dams.
- (b) If a downstream dam would not be overtopped, 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, as applicable, including factors of safety, on the downstream dam.

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(d) If the stability analysis performed pursuant to (c)(2), above, indicates that a downstream dam is unstable during overtopping, 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, its failure shall not be required to be modeled in the dam breach analysis.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 502.09 Review of Breach Analysis by Department.

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

- (1) Structural and hydraulic breach assumptions and base flow criteria;
- (2) Methods for determining base flows;
- (3) Structural stability analyses of downstream dams, if applicable; and
- (4) Summary of the results of the breach analysis.

(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.

(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:

- (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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

PART Env-Wr 503 INUNDATION MAPPING

Env-Wr 503.01 Inundation Map Requirements.

(a) The owner shall produce an inundation map 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 shall be at a scale of 1:2,000 or of greater detail;
- (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 USGS topographic mapping, supplemented by locations derived from aerial photography available on the DES website, www.des.nh.gov;

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- (3) Roads within the inundation area and within at least 0.5 mile from the exterior boundary of the inundation area shall be shown;
 - (4) The time for the flood wave to reach critical areas, including those outlined in (2) and (3), above, including time to rise and time to peak shall be shown;
 - (5) Peak flood wave velocities at critical areas shall be shown;
 - (6) Peak flood wave depths shall be shown;
 - (7) Political boundaries shall be shown;
 - (8) The map shall indicate whether the inundation area represents a sunny day failure or a storm day failure scenario; and
 - (9) The date on which the map was prepared shall be included on the map.
- (d) If the inundation map consists of 3 or more pages, the owner shall provide an index map which clearly directs the user to the appropriate map for a given area.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; rpld by #4534, eff 11-30-88

New. #6462-B, eff 2-21-97 (from Env-Wr 504.01); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-04; ss by #10510, eff 1-22-14

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).

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

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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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (from Env-Wr 505.01); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (from Env-Wr 505.02); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

PART Env-Wr 505 PREPARATION AND FORMAT OF EAP DOCUMENT

Env-Wr 505.01 Submittal of Draft EAP.

(a) The owner shall submit a copy of the draft EAP prepared pursuant to Env-Wr 505.02 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4580, eff 2-27-89; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.01); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 505.02 Format of the EAP.

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

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

- (1) Table of Contents;
- (2) Section 1, Notification flow-chart;
- (3) Section 2, Responsibilities under the EAP;

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- (4) Section 3, Notification checklists;
- (5) Section 4, Preventive action; and
- (6) Appendices, including:
 - a. Appendix A, Dam and watershed description;
 - b. Appendix B, Summary of breach analysis;
 - c. Appendix C, Inundation map;
 - 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.

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

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4452, eff 8-1-88; amd by #4580, eff 2-27-89; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.02); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 505.03 Notification Flow-chart.

(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 shall be developed in accordance with local and state emergency responders and shall conform with the community's current notification protocol.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.03); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 505.04 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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.04); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

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(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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.05); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

- (a) Indicate actions which the monitor shall take to correct a malfunction of the dam;
- (b) Identify the means, materials, and equipment needed to make emergency repairs to the structure;
- (c) Identify the necessary training and equipment, including alternative power sources, to operate the structure; and
- (d) Include a list of preventive and mitigative action measures to be undertaken during emergency situations.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.06); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

- (a) The height and length of the dam, in feet;
- (b) The normal and maximum surface area of the impoundment, in acres;
- (c) The normal and maximum volume of the impoundment, in acre-feet;
- (d) The size of the drainage area, in square miles; and
- (e) A description of all outlet works, including the length of the spillway and a description of any gates.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.07); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 505.08 Impact of Breach. Appendix B of the EAP shall be a summary of the breach analysis, written so as to be easily understood during an actual emergency, in order to provide local emergency responders with a brief description of the areas downstream of the dam which would be affected by a dam failure.

Source. #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.08); ss

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by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; ss by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.09); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (from Env-Wr 506.10); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 505.11 List of Official EAP Holders. Appendix F shall be a listing of all individuals 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 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 of emergency management;
- (e) The telephone number of the contact person at the department's division of water;
- (f) The telephone number of the contact person at the New Hampshire department of safety, state police;

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(g) The names, mailing addresses, and telephone numbers of the owners of downstream dams that would be affected by a dam breach;

(h) The telephone number of the contact person at the New Hampshire department of transportation, highway district 5, dispatch section;

(i) If state roads would be impacted by a dam failure, the name and telephone number of the contact person at the appropriate New Hampshire department of transportation highway district office; and

(j) The telephone number of the contact person at the New Hampshire department of safety, emergency communications section (911).

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.11); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84; amd by #4534, eff 11-30-88; ss by #5080, eff 2-22-91; ss and moved by #6462-B, eff 2-21-97 (formerly Env-Wr 506.12); ss by #8285, INTERIM, eff 2-21-05, EXPIRES: 8-20-05; ss by #8414, eff 8-20-05; ss by #10510, eff 1-22-14

PART Env-Wr 506 FINAL DISTRIBUTION; PUBLIC NOTICE

Env-Wr 506.01 EAP Distribution. Upon receiving department approval of the draft EAP pursuant to Env-Wr 505.01, the owner shall distribute the EAP to local and state emergency response personnel who have responsibilities for implementing the EAP, as listed in Env-Wr 505.11.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

PART Env-Wr 507 TESTING AND UPDATING PROCEDURES

Env-Wr 507.01 Notification Test.

(a) The owner shall conduct a test of the emergency communication network 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) 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.

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(d) Within 30 days of conducting the test, the owner shall 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.

(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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 507.02 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 and in other portions of the EAP as necessary; and

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

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

(c) If development has occurred within the inundation area, the owner shall:

(1) Revise the inundation map to show the new development; and

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

(d) The owner shall submit written documentation 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 necessary; or

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

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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:

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- (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.

(d) 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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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; and
 - c. 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.

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- (c) 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 other aquatic species will not be impeded.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 602.02 Dam Removal Proposal. The person seeking to remove a dam shall 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) An attachment to the application for dam removal projects as specified in Env-Wr 602.03.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Env-Wr 602.03 Attachment for Dam Removal Projects. The information provided on the attachment to the application for dam removal projects shall include the following:

- (a) The name, mailing 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 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
- (j) An explanation of the purpose for removing the dam.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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PART Env-Wr 603 REVIEW PROCEDURES

Env-Wr 603.01 Notification.

(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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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, II has been held, the department shall review the application.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

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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.

Source. #1716, eff 2-20-81; ss by #2207, eff 12-13-82; ss by #2900, eff 11-7-84, EXPIRED 11-7-90

New. #8414, eff 8-20-05; ss by #10510, eff 1-22-14

Appendix A: Statutes Implemented

| 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 506 | RSA 482:1; RSA 482:11-a; RSA 482:12; RSA 482:87 |
| Env-Wr 507 | 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 |

Appendix B: Incorporation by Reference Information

| Rule | Title (Date) | Obtain at: |
|--|---|--|
| Env-Wr 303.12(c)(2) Env-Wr 403.03(c)(1) | “Engineering Guidelines for Evaluation of Hydropower Projects”, Chapter 3 (2002) and Chapter 4 (1991) | Federal Energy Regulatory Commission 888 First Street, N.E. Washington, DC 20426 (202)-502-8700 Download at no cost from: http://www.ferc.gov/industries/hydropower/safety/guidelines/eng-guide.asp |

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| Rule | Title (Date) | Obtain at: |
|--|--|---|
| 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 (1987) | 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: http://www.nws.noaa.gov/oh/hdsc/PMP_documents/HMR52.pdf |
| Env-Wr 403.05(b)(1) | Research Publication RR 93-5, Atlas of Precipitation Extremes for Northeastern United States and Southeastern Canada (1993) | Northeast Regional Climate Center 1123 Bradfield Hall Cornell University Ithaca, NY 14853-1901 (607) 255-1751 Download at no cost from: http://www.nrcc.cornell.edu/reports/RR_93-5.pdf |
| Env-Wr 403.05(b)(2) | 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: http://www.nws.noaa.gov/oh/hdsc/PMP_documents/HMR51.pdf |
| Env-Wr 403.05(c)(3) | USDA NRCS National Engineering Handbook, 210-VI-NEH-630.10 (2004) | USDA-Natural Resources Conservation Service (NRCS) 451 West Street Amherst, MA 01002-2995 Download at no cost from: http://directives.sc.egov.usda.gov/viewerFS.aspx?hid=21422 |
| Env-Wr 403.06(b)(1) | “National Engineering Handbook, Section 5, Hydraulics” (1956) | Download at no cost from: http://directives.sc.egov.usda.gov/viewerFS.aspx?hid=21435 |
| Env-Wr 403.06(b)(2) | “Handbook of Hydraulics”, Seventh Edition, (1996) | McGraw-Hill Education 860 Taylor Station Road Blacklick, OH 43004 (877) 833-5524 Purchase for \$110 at: http://www.mhprofessional.com/product.php?isbn=0070072477 |

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| Rule | Title (Date) | Obtain at: |
|---|--|---|
| Env-Wr 403.07(b)(1) | ACI 318-05, "Building Code Requirements for Structural Concrete & Commentary" (2005) | American Concrete Institute 38800 Country Club Dr. Farmington Hills, MI 48331-3439 (248)-848-3700 Purchase from Portland Cement Association (\$65) at: http://www.cement.org/bookstore/profile.asp?id=8665 |
| Env-Wr 403.07(b)(2) Env-Wr 403.10(b)(2) | "Design of Small Dams", Third Edition (1987) | U.S. Department of Interior, Bureau of Reclamation 1849 C Street NW Washington DC 20240-0001 202-513-0501 Download at no cost from: http://www.usbr.gov/pmts/hydraulics_lab/pubs/manuals/SmallDams.pdf |
| Env-Wr 403.07(b)(3) Env-Wr 403.08(b)(2) Env-Wr 403.09(b)(2) | "National Engineering Handbook, Section 6, Structural Design" (1980) | USDA-NRCS 451 West Street Amherst, MA 01002-2995 Download at no cost from: http://directives.sc.egov.usda.gov/viewerFS.aspx?id=3882 |
| Env-Wr 403.08(b)(1) | "Steel Construction Manual", Fourteenth Edition (2011) | American Institute of Steel Construction One East Wacker Drive Suite 700 Chicago, IL 60601-1802 (312) 670-2400 Purchase (\$350 for non-members, \$175 for members) from http://www.aisc.org/store/p-1578-steel-construction-manual-14th-ed-third-printing-hardbound.aspx |
| Env-Wr 403.09(b)(1) | "Timber Construction Manual", Fourth Edition (1994) | American Institute of Timber Construction 7012 S. Revere Parkway, Suite 140 Englewood, CO 80112 (303) 792-9559 Purchase (\$75) from: http://www.amazon.com/Timber-Construction-Manual-Fourth-Edition/dp/B004STZFMW |
| Env-Wr 403.10(b)(1) | Earth Dams and Reservoirs, T.R. 60 (2005) | USDA, NRCS 451 West Street Amherst, MA 01002-2995 Download at no cost from: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044542.pdf |

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| Rule | Title (Date) | Obtain at: |
|----------------------|---|--|
| Env-Wr 403.10(b)(3) | ACER Technical Memorandum No. 9, "Guidelines for Controlling Seepage Along Conduits Through Embankments" (1987) | N.H. Dept. of Environmental Services Public Information Center 29 Hazen Drive Concord NH 03301 603-271-3503 Download at no cost from: http://des.nh.gov/organization/divisions/water/dam/documents/rule_ref_book.pdf |
| Env-Wr 403.10(b)(4) | Agricultural Handbook 590, Ponds – Planning, Design and Construction (1997) | USDA, NRCS 451 West Street Amherst, MA 01002-2995 Download at no cost from: http://usda.mannlib.cornell.edu/usda/nass/general/ah/ah590.pdf |
| Env-Wr 502.07(a)(1)a | Technical Release T.R. 66 "Simplified Dam Breach Routing Procedures" (1985) | USDA, NRCS 451 West Street Amherst, MA 01002-2995 |
| Env-Wr 502.07(a)(1)b | Computer Program for Project Formulation Hydrology, T.R. 20 (1992) | Download at no cost from: http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/manage/hydrology/?cid=stelprdb1042922 |
| Env-Wr 502.07(a)(1)c | WSP 2 Computer Program, T.R. 61 (1993) | |
| Env-Wr 502.07(a)(2) | National Weather Service Dam-Break Flood Forecasting Model (1987) | NOAA, National Weather Service Office of Hydrologic Development 1325 East West Highway Silver Spring MD 20910 Download at no cost from: http://www.nws.noaa.gov/oh/hrl/hymb/docs/hydraulics/papers_before_2009/hl_149.pdf |
| Env-Wr 502.07(a)(3) | HEC-RAS, version 4.1 (2010) | U.S. Army Corps of Engineers Institute for Water Resources Hydrologic Engineering Center 609 Second Street Davis, CA 95616 (530) 756-1104 Download at no cost from: http://www.hec.usace.army.mil/software/hecras/ |

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."

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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.