

OFFICE OF ADJUDICATIONS

IN THE MATTER OF : **ORDER NO. DSO-98-1002V**

TOWN OF WALLINGFORD, ET AL. : **AUGUST 27, 2002**

FINAL DECISION

I

SUMMARY

This decision concerns the appeal of an order issued by the Commissioner of Environmental Protection pursuant to General Statutes §22a-402. The order was issued to three respondents: Donald and Maria Lunt, Abuldraham and Jadwiga Maria Alghadyan, and the Town of Wallingford. The order requires these respondents to investigate and repair certain deficiencies in an earthen embankment dam identified as the Dayton Pond Dam. (See Attachment 1)

The parties to this proceeding are the Department of Environmental Protection Water Management Bureau, Inland Water Resources Division (staff), the Alghadyans, the Town, and as intervening parties, the Lunts and an upstream property owner, Gina Stevens.

The evidence amply demonstrates that the Commissioner has properly exercised his jurisdiction over the dam and the respondents as persons who are either owners or in control of the dam. The record shows that certain deficiencies in the structure of the dam jeopardize its stability and that the dam is in an unsafe condition. The actions required by the order are necessary to restore the dam to a safe condition. Therefore, subject to certain modifications, I affirm the order.

II

PROCEDURAL HISTORY

On July 28, 1998, the Commissioner issued an administrative order to the Lunts, the Alghadyans, and the Town as the owners and/or those persons having control of the dam. The Commissioner found that “[t]he dam would, by breaking away, cause loss of life or property damage” and that the “dam is in an unsafe condition.” General Statutes §22a-402. The Town timely filed its request for a hearing on the order on August 27, 1998.

The Lunts failed to file a request for a hearing within the time proscribed by statute and therefore lost their standing to appeal the order.¹ On December 1, 1998, the Lunts notified the Commissioner that they wished to participate in the proceedings as interested parties. They subsequently petitioned to intervene and were granted intervening party status on December 21, 1999, pursuant to Regs., Conn. State Agencies §22a-3a-6(k)(1)(B).

¹ General Statutes §22a-408 provides that any person aggrieved by an order issued by the Commissioner may request a hearing within thirty days of receipt of such order.

On April 14, 1999, staff notified the Hearing Officer and the parties that there was insufficient documentation to prove that the Alghadyans received the July 28, 1998 order. Staff requested and was granted an extension of time to ensure proper service. The Alghadyans were served on April 26, 1999, and timely filed a request for hearing on May 1, 1999.

A number of continuances were granted in order to allow time for certain parties to retain counsel and for all parties to explore the possibility of settlement. During that time, on November 15, 2000, Gina Stevens filed a petition to intervene pursuant to General Statutes §22a-19(a). She was granted intervening party status on November 29, 2000.

This matter was assigned to me on March 19, 2001. I conducted a site visit on May 2, 2001, at which all parties were represented. Hearings were conducted on four days between May 3, 2001 and October 23, 2001. The record of these proceedings closed on October 30, 2001. Post-hearing briefs and reply briefs were submitted on November 26, 2001 and December 10, 2001 respectively.²

The proceedings were postponed on two separate occasions due to two jurisdictional challenges. Prior to the start of the hearings, the Town challenged the Commissioner's authority to decide issues of property ownership for purposes of identifying the proper respondents to administrative orders. On May 3, 2001, I ruled that the Commissioner had jurisdiction to determine who held title to the dam for the limited purpose of implementing his authority to issue orders pursuant to Chapter 446j, Dams and Reservoirs, §§22a-401 through 22a-415, and relevant regulations. During the

² Stevens elected not to participate in the last day of the hearing conducted on October 23, 2001, or in any post-hearing activity, including the filing of briefs.

hearing, the respondents and the intervenors argued that because the DEP could not satisfactorily demonstrate the potential for damage to downstream property given the credentials of its proposed expert witnesses, the Commissioner lacked the jurisdictional authority to issue orders for the repair of the dam. I issued a ruling on August 9, 2001 sustaining the Commissioner's jurisdiction.³

III

DECISION

A

FINDINGS OF FACT

1

The Dam

1. The dam⁴ is located on the Muddy River in Wallingford, in a residential neighborhood north of the North Branford Town line and at the southern end of Dayton Pond. It is approximately 205 - 220 feet in length, and has a surface area of 6.7 acres. (Exs. DEP-8, 10.)

2. The structure⁵ consists of a concrete/masonry spillway, concrete spillway training walls, earthen embankments and what staff believes to be a low-level outlet pipe. Subsurface boring test results indicate that the dam embankments are comprised of a single type of earthen material, which is fine to medium sand. (Exs. DEP-3, 8, 10, 19.)

³ This ruling is a public document and is included in the files of the Office of Adjudications.

⁴ Unless otherwise specified herein, the terms "dam" and "Dayton Pond Dam" shall refer to the embankments, spillway, training walls, outlet structure, channels and any appurtenances associated with the dam's operations.

⁵ "Structure" means the dam, its appurtenances, abutments and foundation. Regs., Conn. State Agencies §22a-409-1(a)(13).

3. The spillway is approximately fifty feet wide at the top of the dam and narrows to forty feet at the bottom. It is a concrete and masonry structure located at the west end and adjacent to the right abutment of the dam.⁶ The spillway provides the only known source of discharge of flows from Dayton Pond. Spillway outflows travel in a well-defined channel for approximately 340 feet before passing under West Dayton Hill Road. (Exs. DEP-8, 10.)

4. There are two concrete spillway abutments or training walls. The earthen abutment to the right of the spillway extends approximately twenty feet to the west and the left abutment extends east 150 feet. The crest of the dam is approximately fifteen feet wide near each of the spillway abutments and broadens to eighteen feet at the far east end of the dam. The dam is eleven feet high measuring from the crest to the downstream toe. (Exs. DEP-8, 10, 19.)

2

Property Interests Related to the Dam

5. Dayton Pond is bordered to the east and west by residential properties and to the north and south by property owned by the Town. The residential lots are part of a subdivision known as Dayton Hill Estates that was approved by the Town's Planning and Zoning Commission on September 11, 1978. The subdivision consists of fifteen building lots, those portions of the dam that are not part of the building lots, and the upstream area encompassing the rest of the impoundment. (Exs. DEP-4; exs. Town 1, 2, 3, 9.)

6. The subdivision property was conveyed to the Dayton Hill Corporation by warranty deed of the United Workers, d/b/a Albie Booth Memorial Boy's Club on

⁶ All directional references are made as if from a position upstream of the dam and facing south.

October 27, 1978. The deed was recorded on the Town's land records in volume 477 at page 255. The property was conveyed "together with and subject to riparian rights, bathing rights, and any other rights in and to Dayton Pond and the stream located on the premises being conveyed." (Ex. DEP-4; exs. Town 1, 5; test. T. Lindberg, 5/3/01, pp. 79-80.)

7. On December 28, 1978, Dayton Hill Corporation conveyed Lot No. 8 of the subdivision property to Bronislaw and Gyzelda Lakota by warranty deed. This lot is located at the southeast end of the pond and, from the description and as shown on the subdivision map, includes a portion of the left abutment of the dam. The deed describes the lot, in part, as bounded to the west by the "dam and spillway, as shown on said map".⁷ On August 13, 1990, the Lakotas conveyed the premises to the Alghadyans. (Exs. DEP-4, 14; ex. Town-7; test. T. Lindberg, 5/3/01, pp. 76-77, 92.)

8. Respondent Donald Lunt acquired Lot No. 9 of the subdivision property as represented in a Committee Deed dated August 11, 1980. Lot No. 9 is located at the southwest end of the dam and from the description and as shown on the subdivision map, includes a portion of the right abutment of the dam. Donald Lunt later quit claimed joint and survivorship interest in Lot No. 9 to himself and Maria A. Lunt. The Committee Deed and the Quit Claim Deed rely on a reference to the Dayton Hill Estates subdivision map for the description of Lot No. 9. In a December 3, 1979 Warranty Deed from Dayton Hill Corporation to Donald Lunt, reference is made to the subdivision map and Lot No. 9 is more particularly described as bounded "by the dam and spillway, as shown

⁷ There is no indication of what the developers intended the term "dam" to mean in the conveyance documents that are in the record.

on said map.” (Exs. DEP-4, 13(a) and (b); ex. Town-6; test. T. Lindberg, 5/3/01, pp. 77-78, 92.)

9. The subdivision map provides the boundaries of the pond and dam as they existed in 1978. The map indicates by a number of arrows an area that is described as the “pond, dam and related water area” and further indicates that the subdivision plan called for this area to be conveyed to the Dayton Hill Estates Civic Association. The arrows overlap a small section that appears to divide that portion of the Lunt and Alghadyan parcels that represent the dam abutments. This small section is also described as “dam” on the map. (Ex. Town-3; test. T. Lindberg, 5/3/01, pp. 81, 96-97.)

10. Commencing in 1980, the Dayton Hill Corporation failed to pay the property taxes due the Town on a portion of the premises described in the Warranty Deed from United Workers. Certain tax liens filed by the Town refer to the property as being “described as follows:

4.5 Acres Pond
Abutting lots 9E, 10E, 12E, 15E Town of Wallingford
property 4E and 8E. Owned by Dayton Hill Corp”

The liens also refer to the Town’s assessors map number 219-2-20 and in some instances to the deed from United Workers to Dayton Hill Corp. (Exs. DEP-1, 2; exs. A-1-c through e; ex. L-1; test. T. Lindberg, 5/3/01, p. 81.)

11. In 1986, the Town foreclosed on its tax liens and in a judgment dated March 16, 1989, the subject property was described as “[a]ll that certain 4.5 acre, more or less, parcel of land known as “The Pond” and being a portion of premises conveyed to Dayton Hill Corporation by United Workers d/b/a/ Albie Booth Memorial Boys Club by Deed dated October 27, 1978 and recorded in volume 477, page 255 of the Wallingford

Land Records.” The Town contends that because the Judgement of Foreclosure only references “The Pond”, the foreclosed premises do not include the dam. (Exs. DEP-4, 18A through F; exs. Town-1, 2, 4, 9; test T. Lindberg, 5/3/01, pp. 84-88; test. R. Gee, 5/3/01, pp. 125-128, 167-171.)

12. In 1978, the Town acquired the parcel of land located on the downstream side of the dam through condemnation proceedings. The Certificate of Taking describes pertinent portions of the property boundaries as running “northeasterly to the west bank or water line of Bronson’s Pond, a/k/a Dayton Pond; ... easterly across the pond along land now or formerly of said United Workers ... southerly along land of said United Workers....” The parcel was formerly owned by The New Haven Water Company and is referenced in the deeds from Dayton Hill Corp. to the Lakotas and the Lunts. The parcel currently abuts West Dayton Hill Road, the Lunt property, the Alghadyan property and includes, at least, portions of the downstream discharge channel and downstream abutments. (Exs. DEP-4, 10; exs. Town-3, 8, 9; test. T. Lindberg, 5/3/01, pp. 73-76.)

13. The Town’s land records show that through condemnation and foreclosure proceedings, the Town holds title to parcels that are located immediately north of West Dayton Hill Road and abutting the subdivision lots owned by Lunt and Alghadyan, and directly to the east of the Lunt lot and west of the Alghadyan lot and encompassing the area of impounded water as shown on the subdivision map. (Exs. DEP-10, 18A through F; test. T. Lindberg, 5/3/01, pp. 90-91.)

14. Three independent title searches have revealed that the Town’s land records are void of any other conveyance of the Lunt or Alghadyan subdivision lots. There is no indication of any conveyance of the spillway or of the small section

designated on the subdivision map as “dam”. (Ex. DEP-4, exs. Town-1, 9; test. T. Lindberg, 5/3/01, pp. 82-83.)

3

Condition of the Dam

15. The Commissioner has promulgated regulations in accordance with the provisions of Chapters 54 and 446j of the General Statutes pertaining to the classification of dams using criteria established by the U.S. Army Corps of Engineers. Dams are classified by size and hazard potential. The hazard potential of a dam is intended to establish the possibility for loss of life and/or the degree of property damage that could occur in the event of a failure of the dam leading to a partial or full release of the water impounded within its structure. The DEP has classified the hazard potential of the dam as that of a Class BB dam. Regs., Conn. State Agencies §22a-409-2.⁸ (Exs. DEP-8, 10; test. E. Robida, 10/23/01, p. 32.)

16. The hazard potential of this dam has been determined, in part, on the basis of a breach analysis under conditions where the spillway was flowing full and the water surface elevation was at the crest of the dam, conditions of less intensity than a ten-year storm event. Staff has determined that, under these conditions, the dam will overtop causing erosion of the earthen embankment adjacent to the spillway. The erosion, which may occur gradually over a period of hours, will cause the dam to fail. At the moment the dam fails, there will be a sudden release of the impounded water. (Exs. DEP-8, 10; test. E. Robida, 6/28/01, p. 447; 10/23/01, pp. 32, 52-54.)

⁸ Regs., Conn. State Agencies §22a-409-2(d)(1)(C) defines a Class BB dam as “a moderate hazard potential dam which, if it were to fail, would result in any of the following: (i) damage to normally unoccupied structures; (ii) damage to low volume roadways (less than 500 ADT); (iii) moderate economic loss.”

17. The West Dayton Hill Road bridge is located 340 feet downstream of the dam. The bridge was built in 1938 and is a cast-in-place concrete structure. The bridge superstructure, wing walls and training walls are concrete. The area behind the training walls consists of an earthen embankment. The flood wave that results from the dam failure under the previously mentioned flow conditions will pass downstream and at the point where it reaches the bridge, the depth of the wave is estimated to be 12.5 feet and the flow velocity will be 9.6 feet per second. The flood volume and velocity can cause damage to at least the bridge wing walls, masonry training walls and the earthen embankments behind those walls. This can weaken, if not damage, West Dayton Hill Road even though the road will probably not overtop under these conditions. This breach analysis established the hazard potential for damage to a low volume roadway and moderate economic loss due to the costs of repairs to the bridge structure. (Exs. DEP-8, 10; exs. S-1 through 6; test. R. Anderson, 5/4/01, p. 231-238, 246-247, 250,251; test. E. Robida, 6/28/01, pp. 448-453, 457-458; 10/23/01, pp. 29-33, 99-100.)

18. The size classification relates to the height or storage capacity of the dam. The dam has a capacity of less than fifty acre-feet of water storage and is less than twenty-five feet in height so it is classified as “small”. (Exs. DEP-8, 10.)

19. These hazard and size classifications are used to establish the volume of water flow a dam spillway must be able to pass during a specified design or frequency storm. The spillway of this dam must have the capacity to safely pass the water flows occurring from a 100-year design storm. During a 100-year storm in Connecticut, rainfall will occur at a rate of 7.1 inches in a twenty-four hour period. (Exs. DEP-8, 10; test. E. Robida, 12/23/01, pp. 35-36; test. J. Brochu, 10/23/01, pp. 154-155.)

20. The dam can safely pass 1245 cubic feet of water per second. A Federal Emergency Management Agency June 4, 1999 Flood Insurance Study for the Town shows that the flow at the dam during a 100-year storm event will be 3357 cubic feet per second. The existing spillway has the capacity to pass only 37 percent of the design storm flows. During a 100-year storm flood, the dam embankments will overtop because the spillway is inadequate. (Ex. DEP-8; test. E. Robida, 10/23/01, pp. 32-42.)

21. The dam was overtopped during a storm event on April 16, 1996. The Lake Gaillard rainfall gauge, located five miles from the dam, recorded the rainfall on April 16, 1996 to be 4.96 inches. The Lake Whitney Gauge, located approximately 7.5 miles from the dam, recorded the rainfall to be 5.39 inches. Overtopping occurred from water flows brought about by rainfall significantly less severe than that which would occur during the 100-year storm event. (Exs. DEP-3, 8, 10; test. E. Robida, 6/28/01, pp. 440-445.)

22. The dam has been the subject of inspections and assessments by the DEP from June 24, 1996 through December 12, 1999. The Town retained Macchi Engineers, LC to conduct an inspection of the dam in March, 2000. During these inspections, certain deficiencies were observed in the dam. (Exs. DEP-3, 8, 10.)

23. The spillway structure is constructed of stone masonry. Each spillway abutment or training wall is constructed of concrete and extends five feet, on average, above the spillway. The stone masonry appears to be in good condition with the exception of some bulging at each end near the abutments. Probes inserted through the masonry located a void of approximately two square feet near the right spillway abutment. The condition of the concrete abutments ranges from fair to poor. Because

there are no training walls upstream from the abutments to prevent washout of material, previous overtopping events have substantially eroded the dam at the point where the abutment and the spillway connect. Erosion around the abutments has caused settlement in the masonry. There are large chips and voids under the concrete and there is substantial evidence of the effects of weather on the exposed surfaces. (Exs. DEP-8, 10, 19; test. J. Sangivanni, 6/28/01, p. 359.)

24. There is a large plunge pool⁹ to the west of the spillway centerline. The size of the pool is approximately eight to ten feet deep, and it is estimated to be fifty to sixty square feet overall. Areas adjacent to this pool also show signs of significant scouring. If there is material at the bottom of the plunge pool that is not erosion-resistant, continued scouring could weaken the stability of the spillway and ultimately cause it to collapse. (Ex. DEP-10; test. R. Anderson, 5/4/01; pp. 241, 252; test. J. Brochu, 5/4/01, p. 335.)

25. There is erosion on the crest and downstream slope of the earthen embankment portion of the dam due to overtopping. The earth material behind that the left spillway training wall and on the downstream slope of the dam has deteriorated to a depth ranging from twenty-four to thirty inches. (Exs. DEP-8, 10, 19.)

26. There is a twenty-five foot wide area of severe deterioration twenty feet from the left downstream abutment, where an estimated seventy-five cubic yards of the downstream embankment material has eroded to the center of the dam leaving a vertical slope. Fifty-five to sixty feet from the left spillway wall there is a ten foot wide area of deterioration where an estimated forty cubic yards of embankment material has eroded to

⁹ A plunge pool is in essence a pothole formed at the base of a waterfall. It is created by water and stone swirling in a circle and eroding or scouring the area.

the center of the dam leaving a vertical slope. The dam embankment cross-sectional area in these two locations has been reduced due to the erosion. The structural integrity and stability of the dam in these locations is in jeopardy due to the lack of sufficient cross sections leading to an increased potential for dam failure. (Exs. DEP-8, 10, 19; test. J. Sangivanni, 6/28/01, pp. 356-357.)

27. There is a partially buried reinforced concrete pipe measuring twenty-four inches in diameter at the downstream toe of the dam. There is also a ductile iron pipe approximately fifteen feet offshore upstream of the dam that extends from a large concrete slab buried beneath accumulated silt. There is a steel trash rack at the inlet end of the pipe and there is a valve attached to a 3.5 inch stem housing at the end of a 90° bend in the pipe. It is not known whether the valve is operational. (Ex. DEP-10; test. J. Sangivanni, 6/28/01, p. 357; test. E. Robida, 6/28/01, p. 438-440.)

28. Other deficiencies include a lack of vegetative or protective cover over the crest of the dam, uneven and excessively steep slopes on both sides of the embankments, and brush and tree growth on both sides of the embankments. (Exs. DEP-3, 8, 10, 15a; test. J. Brochu, 5/4/01, pp. 335-337; test. J. Sangivanni, 6/28/01, p. 358.)

4

Repairs to the Dam

29. Staff, the Macchi engineers, and the expert witness for the intervenor Stevens agree that repairing and reconstructing the earthen embankments and filling the plunge pool are necessary to preserve the present stability and integrity of the dam. Staff and the Macchi engineers recommend a number of additional repairs and upgrades to the

structure to make it safe and to enable it to pass the design storm flows. Those recommendations include the following. (Test. R. Anderson, 5/4/01, pp. 240-243, 259; test. E. Robida, 10/23/01, pp. 43-44.)

- (a) Adjust the height of the dam and/or the size of the spillway to provide enough capacity to safely pass the 100-year storm event with a foot of freeboard¹⁰.
- (b) Remove deteriorated wood timber from spillway. Fill large voids in masonry and repair upstream portion of concrete wall to prevent seepage.
- (b) Create a uniform and elevated crest that matches the top of the spillway training walls and grade the upstream and downstream embankments from the new crest elevation to provide stable slopes.
- (c) Determine the existence and condition of the low-level outlet and reconstruct it so that it is accessible above water.
- (d) Provide erosion protection on the upstream slopes of the dam to prevent erosion of the embankment.
- (e) Clear trees and woody vegetation over the full length of the dam and to within twenty-five feet of the downstream toe of the dam as well as in the downstream channel. Grub any tree root systems in the dam that are more than six inches in diameter.
- (f) Patch or chink the cracks and chips in the masonry spillway.
- (g) Provide protective vegetative cover over the earthen embankment portions of the dam. (Exs. DEP-3, 8, 10.)

¹⁰ Freeboard is the distance between the maximum surface elevation of impounded water and the crest of the dam.

B

CONCLUSIONS OF LAW

1

Jurisdiction

Sections 22a-1 through 22a-15 of the General Statutes set forth the policy of the state and the responsibilities of the DEP regarding the conservation and protection of its natural resources and its interests in the health, safety and welfare of its constituents. Title 22a contains various provisions all related to this purpose, including the role of the DEP and the duties and powers of the Commissioner. *Keeney v. Town of Old Saybrook*, 237 Conn. 135 (1996). Management of the state's water resources, including dams and other structures, falls within the scope of responsibilities of the DEP. General Statutes §22a-1.

General Statutes §22a-401 provides that “[a]ll dams ... with their appurtenances, ... which by breaking away or otherwise, might endanger life or property, shall be subject to the jurisdiction conferred by this chapter.” The Commissioner therefore has jurisdiction over any dam located within the state that *might* endanger life or property if it were to fail. Section 22a-402 provides that as to those dams that fall within his jurisdiction, the Commissioner must “investigate and inspect or cause to be inspected all dams or other structures which, *in his judgment, would*, by breaking away, cause loss of life or property damage. (Emphasis added). Section 22a-402 requires inspection of only those dams that *would* cause loss of life or property damage.

The record demonstrates that the Dayton Hill Pond Dam would cause property damage if it were to break away¹¹. In the circumstance of a storm event of significantly less intensity than the 100-year storm flood, should the dam fail, the flow speed and velocity of the released water will have erosive effects on the West Dayton Hill Road and bridge. The evidence indicates that the concrete structure may not collapse and cause the road to fall into the channel. However, there will be damage to the bridge wing walls and to the adjacent earthen embankments of the bridge. Although the road may not overtop in this circumstance, the concrete abutments will deteriorate and the superstructure of the bridge may be weakened. On this basis, it is reasonable to conclude that the Commissioner has jurisdiction over the Dayton Hill Pond Dam and the authority to investigate and inspect that dam.

If, after an inspection, the Commissioner determines that a dam is in an unsafe condition, he may “order the person owning or having control thereof to place it in a safe condition or to remove it...” General Statutes §22a-402. The term “owner” means “any individual, ... municipality, ...or any other legal entity of any kind holding legal title to the dam. Regs., Conn. State Agencies §22a-409-1(12). However, “control” does not even require ownership. “In general, to have “control” of a place is to have the authority to manage, direct, superintend, restrict or regulate.” *Bates v. Connecticut Power Co.*, 130 Conn. 256, 261 (1943), quoting *State v. Ehr*, 52 N.D. 946, 953 (1925).

The record shows that each respondent holds legal title to or is in control of different portions of the dam. The Lunts hold title to a portion of the east spillway abutment and earthen embankment. The Alghadyans hold title to a substantial portion of

¹¹ There is no evidence on the record to reach a conclusion as to whether this dam would, by breaking away, cause a loss of life.

the west spillway abutment and earthen embankment. It is uncontroverted that the Town holds title to the property to the immediate south and on the downstream side of the dam. This property includes at least a portion of the outflow channel and at least a portion of the downstream embankments. It is also uncontroverted that the Town holds title to the property that encompasses the “pond” or the area beneath the impounded water.

The Town contends that the foreclosure of the area described as “pond” does not include portions of the dam structure as detailed on the subdivision map. If I were to adopt the Town’s position, I would have to conclude that Dayton Hill Corporation or its successors, if any, owned certain portions of the abutments and earthen embankments that lie beneath the water of “The Pond”, while the Town held title to nothing more than the pond bottom. Even if I were to agree with the Town, it clearly has control of portions of the structure, either alone or in combination with the other respondents. There is no evidence of any other conveyances that relate to any portions of the dam structure. There is no evidence of easements or other means of establishing control of the area in any other person or entity. The record demonstrates that the three respondents can restrict or regulate access to the dam structure through their various holdings. I therefore conclude that for the limited purpose of establishing those parties responsible for the repair and maintenance of the Dayton Pond Dam, the Lunts, the Alghadyans and the Town are the owners or are in control of that structure and are the appropriate respondents to the order issued by the Commissioner.

Condition of the Dam

It is unclear whether the jurisdictional requirements of General Statutes §§22a-401 and 22a-402 set forth the only factors that must be established in order to arrive at conclusions regarding a dam's safety. The relevant statutes and the regulations are void of any clear and specific guidelines for the determination that a dam is unsafe. §22a-401 through 22a-415; Regs., Conn. State Agencies §§22a-409-1 and 2. The burden is therefore on the Commissioner to consider the unique structure of each dam and to assess whether it is in a safe condition within the context of that structure. In so doing, the Commissioner has routinely and consistently assessed the capability of a dam to convey flows without overtopping under the conditions of the particular storm event that has been deemed appropriate for that structure based upon its hazard and size classifications, in this case the 100-year storm event. When it has been determined that a dam cannot safely withstand the 100-year storm event, that dam has been declared unsafe. See, e.g., *Kish v. Cohn*, 1998 Ct. Sup. 4786 (1998); *Lake Williams Beach Association v. Gilman Brothers Company*, 197 Conn. 134 (1985); *Errichetti Associates v. Boutin*, 183 Conn. 481 (1981); *Providence & Worcester RR Company v. DEP*, 201 Ct. Sup 10229, 10247 (2001).

In addition, the Commissioner has considered such safety standards as evidence of overtopping, scouring or erosion, existence of plunge pools, low-level outlet operations, embankment slopes, settling or cracking in the spillway or any part of the structure, and accumulated brush and growth in evaluating the condition of a dam. The

Macchi engineers used the same criteria in their independent engineering investigation of the dam. Furthermore, the regulations require owners to inspect their dams to assure that no unsafe conditions are developing. Owners are required to report major damage “such as overtopping by flood waters, erosion of the spillway discharge channel and any major problems which are observed to have developed such as, new seepage or a significant increase in seepage quantities, settling, cracking or movement of the embankment or any component of the dam.” Dam owners are also required to maintain the structure by clearing brush and tree growth “from embankments and within twenty-five feet of the downstream toe and the abutment embankment contact;” and “suitable vegetative cover must be established and maintained on abutments and embankments.” Regs., Conn. State Agencies §§22a-409-2(j)(5) and (6).

There is uncontroverted evidence that the dam would be able to sustain a storm event of less intensity than a ten-year storm only *if* the erosion of the downstream embankment is repaired and if the plunge pool is repaired. Further, there is evidence that the dam has already overtopped under conditions less severe than the 100-year storm event. There is evidence of erosion of the spillway discharge channel and of the downstream embankment and cracking in the spillway training walls. There is also evidence that there is accumulated brush and tree growth on all areas of the embankments including those areas within twenty-five feet of the downstream tow. There is evidence that there is a lack of protective vegetative cover.

There is no evidence in the record to prove that the dam would safely support the flows anticipated under the conditions of the 100-year storm event. Further, the record shows that the three experts who testified on this issue agreed with the need for repairs to

be made to the downstream embankments and the plunge pool. The respondents and the intervenors argue that this evidence is insufficient and that absent proof that the West Dayton Hill Road bridge will be damaged in the event the dam fails, the dam cannot be considered to be in an unsafe condition. This is not the case. It is of no consequence that the record reflects the fact that the downstream bridge, including its superstructure and the road it supports, will probably not collapse under the impact of the volume and velocity of water flow due to a complete failure of the dam.

The severity of any impact of a breach on downstream property is a determinant of the Commissioner's authority to inspect a dam and of the hazard classification of a dam. It is not a factor in establishing whether a dam is in an unsafe condition. The regulations that outline the inspection procedures for the Department do not include any reference to downstream property other than to require an observation of downstream development that "would be subject to inundation in the event of a dam breach for purposes of *assessing the potential hazard* which the dam poses." Regs., Conn. State Agencies §22a-409-2(c)(1)(B) (Emphasis added). The details of the written report that the Commissioner is required to issue after an inspection does not include a reference to damage to downstream property. Regs., Conn. State Agencies §22a-409-2(c)(3). The inspection criteria that must be followed by a dam owner does not require any demonstration of downstream damage. Regs., Conn. State Agencies §22a-409-2(j).

A plain reading of the relevant statutes and regulations indicates that once the Commissioner's jurisdiction over a dam has been determined by a finding that the structure *might* endanger life or property, the next factor for consideration is whether the dam is subject to periodic inspections and investigations. That issue is resolved once it is

determined that a dam, “in the Commissioner’s judgment, *would*, by breaking away, cause loss of life or property damage.” The extent of property damage that would occur is used to determine the hazard potential of a dam and the schedule for dam inspections and associated fees. General Statutes §§22a-401 through 22a-409; Regs., Conn. State Agencies §§22a-409-2. Once all of the jurisdictional requirements have been met, the Commissioner is authorized to inspect and determine whether the dam is in an unsafe condition. That determination has consistently been made on the basis of whether the dam can support the flows from a particular storm event and whether other deficiencies of the type outlined above are found within the structure.

The record demonstrates that the deficiencies in the structure as noted by the experts jeopardize the stability of the dam. It is therefore reasonable to conclude that the dam is in an unsafe condition and that the issuance of the repair order was proper under the circumstances.

3

Apportionment of Responsibility for Repairs

General Statutes §22a-6a(b) provides for a finding of joint and several liability among multiple respondents when a reasonable apportionment of responsibility is not possible. This section provides in relevant part: “[w]henver two or more persons knowingly or negligently violate any ... order ... adopted or issued ... by the commissioner and responsibility for the damage caused thereby [that] is not reasonably apportionable, such person shall, subject to a right of equal contribution, be jointly and severally liable” Although the statute “appears to be addressed to suits for damages brought by the commissioner, not to the propriety of remedial orders issued by the

commissioner,” the courts have concluded “that the legislature did not intend by its enactment to preclude application of the common law principal of joint and several liability in the context of remedial orders.” *Connecticut Building Wrecking Co. v. Carothers*, 218 Conn 580, 606-607 (1991). Where, however, there is a reasonable basis for apportionment of responsibility among multiple respondents, a finding of joint and several liability should not be made. *Id.* at 609.

There is insufficient evidence in the record to establish a reasonable basis for apportionment. The property title records do not adequately establish the boundaries of each owner’s interests in relation to the various deficiencies found to exist in the dam structure. In the absence of an accurate survey, there is no appropriate means to apportion responsibility for repairs to the dam on the basis of each respondent’s ownership interests.

Further, the evidence, particularly the Macchi report, provides a detailed analysis of the deficiencies in the structure and alternative means for repairing the dam. In and of itself, however, this analysis does not provide a sufficient basis to apportion liability among the respondents in the absence of clearly delineated property boundaries. It is therefore reasonable to conclude that there exists no reasonable basis for apportionment of liability among these three respondents based on the evidence in the record. I find the respondents jointly and severally liable for the repairs necessary to place the dam in a safe condition.

Intervenors' Burden of Proof***a******Intervenors Lunts***

Having failed to appeal the order within the time proscribed by statute, the Lunts intervened on the basis that their “legal rights, duties or privileges will or may reasonable be expected to be affected by the decision in th[is] proceeding” and that “they will or may reasonably be expected to be significantly affected by the decision....” Regs., Conn. State Agencies §22a-3a-6(k)(1)(B). The Lunts only had the burden of presenting evidence of a reasonable basis for apportioning liability among the respondents. Lunt’s testimony and evidence did not establish that basis. As discussed earlier, I find that there is insufficient evidence in the record to apportion responsibility for the repairs to the dam on the basis of ownership interests or otherwise.

b***Intervenor Stevens***

Ms. Stevens intervened by filing a verified petition that set forth several factual allegations leading to an assertion of unreasonable pollution, impairment or destruction of “the public trust in the air, water or other natural resources of the state.” General Statutes §22a-19(a). It is well settled that a party who has intervened under §22a-19(a) must make a prima facie showing that the act or conduct in question will or is reasonably likely to cause the harm alleged. *Manchester Environmental Coalition v. Stockton*, 184 Conn. 51, 58 (1981). The evidence presented by Stevens failed to demonstrate in any way that

the enforcement of the Order would lead to unreasonable pollution, impairment or destruction of the public trust in any natural resource of the state. Her only evidence consisted of an expert witness who testified as to his opinion regarding the structural integrity of the downstream bridge, certain deficiencies in the dam and whether the dam was in an unsafe condition. There is no evidence in the record regarding any conduct that could be considered to satisfy the requirements of the statute. Stevens failed to meet her burden of proof under §22a-19a.

IV

MODIFICATIONS

1. All of the compliance dates in this order, which originally ran from the date of issuance of this Order, shall instead run from the date of this final decision.
2. In Section B.1.k.(iii) delete “which shall propose”.

V

CONCLUSION

The Commissioner has properly exercised jurisdiction over Dayton Hill Pond Dam. The issuance of the order to the Lunts, the Alghadyans, and the Town is appropriate because these respondents either own or are in control of the dam. The record supports the Commissioner’s finding that the dam is in an unsafe condition and that the ordered activities are necessary to prevent the hazards of dam failure.

Therefore, the Order DSO-98-1002V, as modified above, is *affirmed*.

August 27, 2002
Date

/s/ Jean F. Dellamarggio
Jean F. Dellamarggio, Hearing Officer