



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ADJUDICATIONS



IN THE MATTER OF : *ORDER NO. DSO-2002-1009V*

VINCENT D. CELENTANO, : *MAY 28, 2004*
CEL-MOR INVESTMENTS, INC. and
VINCENT D. CELENTANO, D/B/A
CEL-MOR INVESTMENTS, INC.

FINAL DECISION

I

SUMMARY

On February 21, 2002, pursuant to General Statutes §§ 22a-6 and 22a-402, the Commissioner issued Order Number DSO-2002-1009V to Vincent D. Celentano, Cel-Mor Investments, Inc. and Vincent D. Celentano, D/B/A Cel-Mor Investments, Inc., (collectively, the respondents). This order (*Attachment I*) was the latest of several issued over the years to address storm water runoff, erosion and sediment, and the condition of an unsafe dam¹ and its appurtenances², known as the Ridge Subdivision lower detention basin³ (collectively referred to as the structure⁴) located at the end of Warren Avenue in Naugatuck.

¹ "Dam" means any barrier of any kind whatsoever which is capable of impounding or controlling the flow of water, including but not limited to storm water retention or detention dam, flood control structures, dikes and incompletely breached dams. Regs., Conn. State Agencies §22a-409-1(7).

² Appurtenance means "any structure or mechanism other than the dam itself which is associated with its operation." Regs., Conn. State Agencies §22a-409-1 (4).

³ Wesley Marsh, Supervising Environmental Analyst at the DEP Inland Water Resources Division when asked whether it was appropriate to refer to the structure as a "dam" or "detention basin", he responded, "the appropriate way to refer to it, I expect, would be it is clearly a dam, and is creating a detention basin."

The respondents timely appealed the order and hearings were conducted on thirty-three days between September 4, 2002 and October 15, 2003. Site visits were conducted on August 29, 2002 and April 22, 2003. The record closed on October 15, 2003, and post-hearing briefs were received at the Office of Adjudications on December 16, 2003; reply briefs were received on January 30, 2004. The matter was originally assigned to Hearing Officer Lewis Miller, and then re-assigned to me to continue the hearings and render a final decision.

I have evaluated the evidence presented and appraised the credibility of the witnesses. The record amply demonstrates the respondents are persons who either own or have control of an unsafe dam and the requirements of the order are reasonable and necessary to place the dam in a safe condition. Therefore, subject to one modification, I *affirm* the order.

II

FINDINGS OF FACT

1

The Respondents

a

Vincent D. Celentano

1. Vincent D. Celentano (Celentano) is a semi-retired real estate developer who lives in Hillsboro Beach, Florida (Florida residence). Until August 2002, Celentano and his wife owned Seabonay Beach Resort in Hillsboro Beach, Florida. (Test.

So it is probably well we speak of them together, when we refer to it as the Warren Avenue detention basin and dam." (Test. W. Marsh, tr. 03-11-03, p. 1172)

V. Celentano, tr. 09-05-02, pp. 283, 285, 288; tr. 12-17-02, pp. 559, 573, 626; tr. 09-15-03, p. 3046)

b

Cel-Mor Investments, Inc.

2. Cel-Mor Investments, Inc. (Cel-Mor) is a Connecticut domestic stock corporation, organized sometime in 1963 with a business address in New Haven, and among other things, is in the business of general construction, including the design and construction of housing developments. Celentano is the president, officer and sole director and shareholder of the company. (Exs. DEP-4, 6, 66, 67, 68, 70, 73, 74; test. V. Celentano, tr. 10-23-02, pp. 327-328, 358-359)
3. On March 30, 1990, Cel-Mor was dissolved by forfeiture and, approximately eleven years later, on June 13, 2001, was re-instated as a corporation in good standing. During the period Cel-Mor was dissolved, Celentano ran the company as Vincent D. Celentano, D/B/A Cel-Mor Investments, Inc. and made the decision to reinstate the company. (Exs. DEP-4, 5, 6, 52, 53, 70; test. V. Celentano, tr. 10-23-02, pp. 327, 351-352, 358-359, 362-363)
4. Cel-Mor is the owner of the property where the dam is sited and pays real estate taxes on the property. (Exs. DEP-3, 45, 69; test. V. Celentano, tr. 10-23-02, p. 363; tr. 12-17-02, p. 624)
5. Celentano is the primary decision maker for the company, including final decisions on environmental matters concerning the dam. He made the decision purchase the property where the dam is sited and to contest the 2002 order. (Exs.

⁴ "Structure" means the dam, its appurtenances, abutments and foundation. Regs., Conn. State Agencies §22a-409-1 (13).

DEP-3, 6, 45, 69, 74, 79; test. V. Celentano, tr. 10-23-02, pp. 345-350, 373; tr. 10-24-02, pp. 461, 469, 492, 496, 498, 505-506, 516, 539; tr. 12-17-02, pp. 565; tr. 12-18-02, p. 723; tr. 10-08-03, pp. 3675-3676)

6. Cel-Mor uses Celentano's Florida residence as its business address. Celentano did not recall if Cel-Mor pays him rent. (Exs. DEP-6, 53, 70, 71-74; test. V. Celentano, tr. 09-05-02, p. 303)
7. Cel-Mor also used the Seabonay resort as its business address. Celentano did not know if the company paid him rent. (Exs. DEP-4, 5, 6, 7, 53, 66, 70, 71, 72, 73, 74; test. V. Celentano, tr. 09-05-02, pp. 287-290)

c

Celentano, D/B/A/ Cel-Mor Investments, Inc

8. During the period the Cel-Mor was dissolved, Celentano, D/B/A Cel-Mor Investments, Inc., paid real estate taxes on the property where the dam is sited. He did not know if the money to pay for the taxes came from a business account or from his personal account. After Cel-Mor was reinstated, Celentano continued to pay real estate taxes on the property where the dam is sited. The tax bill is addressed to Cel-Mor and is mailed to Celentano's Florida residence. (Ex. DEP-53; test. V. Celentano, tr. 10-23-02, p. 363)
9. During the period Cel-Mor was dissolved, Celentano, D/B/A Cel-Mor Investments, Inc. had use of an office in an office in the Florida residence. Celentano did not know if the company paid him rent. (Exs. DEP-6, 53, 70, 71-74; test. V. Celentano, tr. 09-05-02, p. 303)

10. During the period Cel-Mor was dissolved, Celentano, D/B/A Cel-Mor Investments, Inc. asked the attorney for the Town of Naugatuck (town) for a general release of subdivision property bond he had executed in 1983 and requested that his company, Cel-Mor be included as an additional named party on the release. The town released the bond after Celentano personally paid it forty-nine thousand dollars for unfinished work items remaining at a subdivision known as the Ridge. (Exs. DEP-20, 52, 76; exs. RESP-21, 39, 57; test. Celentano, tr. 10-23-02, pp. 404-412, 414; tr. 09-16-03, pp. 3091, 3090;
11. Celentano did not remember when he learned Cel-Mor had lapsed and could not recall if he received compensation from the company or if it maintained a bank account from 1990-2001. (Exs. DEP-4, 5, 6, 66, 67; test. V. Celentano, tr. 10-23-02, pp. 351, 362-363)

2

The Ridge Subdivision

12. Sometime in 1979, Celentano obtained approval from the town to construct a 288-lot residential subdivision called "the Ridge" development on approximately 100 acres of property he owned located in Naugatuck⁵. (Exs. DEP-12, 13, 15, 16, 19, 51, 76, 97c; test. V. Celentano, tr. 10-23-02, pp. 336; tr. 12-17-02, p. 611; tr. 09-15-03, pp. 3047-3050, 3052)
13. As part of the approved plans of development, Singhal Associates Consulting Engineers (Singhal), proposed a system of peak delaying weirs to control the increases of storm water runoff caused by the Ridge downstream toward Warren

⁵ Celentano took title to the property as "Vincent Celentano, Trustee", in contemplation of a family trust, which was never developed. (Ex. DEP-97c; test. V. Celentano, tr. 09-15-03, pp. 3048-3049)

Avenue. (Exs. DEP-13, 18, 75, 76; test. S. Derby, tr. 09-04-02, pp. 9-13; test. A. Christian, tr. 03-28-03, pp. 1796-1797)

14. The uppermost and northern portion of Warren Avenue is unimproved and its remaining section is paved and uncurbed. (Exs. DEP-56a, 56h, 82; 83, 85, 128; exs. RESP-28, 32, 54; test. A. Christian, tr. 03-12-03, pp.1359-1360; tr. 03-13-03, p. 1418; test. A. Bevilacqua, tr. 04-23-03, p.1992)
15. On the east side and parallel to Warren Avenue is a storm drainpipe⁶ (existing drainpipe) consisting of various sized sections and diameters. The existing drainpipe traverses across the properties of William Woermer (Woermer) and Marjorie Ashmore (Ashmore), and property formerly owned by George Barone (Barone). Prior to the Ridge, the drainpipe sufficiently conveyed surface water from the upland into an open channel through a conduit to the highway drainage system and Beacon Hill Brook without flood incident. (Exs. DEP-51, 82, 83, 85; exs. RESP-28, 32, 54; test. S. Derby, tr. 09-04-02, p. 20; tr. 09-05-02, p. 243; test. W. Woermer, tr. 12-18-02, p. 822; tr. 12-19-02, p. 927; test. A. Christian, tr. 03-12-03, pp. 1276-1279, 1361; test. G. Barone, tr. 03-28-03, pp. 1762-1764; test. A. Bevilacqua, tr. 04-24-03, p. 2081)
16. Woermer first began to suffer damages from flooding and sediment in 1983 during the course of land clearing and construction activities at the Ridge. He contacted Celentano, who hired a construction company to remove a bottleneck in the existing drainpipe and install a manhole in Woermer's yard. (Exs. DEP-13, 17, 42, 75; test. W. Woermer, tr. 12-18-02, pp. 817-823, 828-829, 867-869; tr. 12-

19-04, pp. 885, 906, 929, 961, 938-943, 959; tr. 10-14-03, pp. 3871, 3880-3881, 3908)

17. On February 16, 1983, for consideration of one dollar (\$1.00) and other valuable consideration, Celentano conveyed the Ridge subdivision property to Ridge Development, Inc. (RDI) by quitclaim deed. (Ex. DEP-97c)
18. On August 5, 1983, the Commissioner issued an emergency order (1983 order) to Celentano and H. Glen Chaffer (Chaffer), President of RDI, ordering RDI to stop all earthmoving and construction activities at the Ridge and install and maintain all necessary measures to control erosion and sedimentation, and minimize further erosion and storm water runoff onto adjacent properties. (Ex. DEP-14)
19. To evaluate the adequacy of sediment and erosion control measures ordered by the DEP, Singhal at the request of Celentano, inspected the Ridge on September 2, 1983, and found that adequate steps were not being taken as laid down in his "Sediment and Erosion Control Plan for the Ridge Subdivision". (Ex. DEP-17)
20. Steven Derby (Derby), a civil engineer at the DEP Inland Water Resources Division (IWRD) reviewed the weir system and found Singhal's storm water discharge estimates low. In a memo, copied to Celentano, Derby recommended, among other things, that the Ridge drainage basin (watershed) draining toward Warren Avenue be re-analyzed and storm water runoff estimates be increased by twenty-five to thirty-five percent. (Ex. DEP-18; test. S. Derby, tr. 09-04-02, pp. 6, 12-14; tr. 09-05-02, pp. 237-238)

⁶ An open channel piped by various property owners on Warren Avenue prior to the construction of the Ridge and dam. (Test. Woermer, tr. 12-18-02, p. 819; test. Barone, tr. 03-28-03, p. 1761; test. M.

The Dam and Detention Basin

21. Celentano negotiated resolution of the 1983 order with the DEP. He proposed construction of a dam and detention basin on his property located adjacent to and downhill from the Ridge and the proposed plan for the weir system was abandoned. (Exs. DEP-3, 14, 75; exs. RESP-13, 28; test. S. Derby, tr. 09-04-02, pp. 32-34; test. V. Celentano, tr. 12-18-02, pp. 805, 807)
22. Under the direction of Celentano, Singhal prepared plans of the proposed dam and detention basin and on November 7, 1983, the Commissioner issued a modified order to Celentano and RDI, allowing construction activities at the Ridge to continue, subject to six conditions. Celentano executed an easement on November 3, 1983 and submitted it to the DEP on November 7, 1983. The easement provided for the maintenance of the structure by RDI and the town. One of the conditions in the modified order required that a certified copy of the easement, as filed upon the land records, be provided to the DEP no later than January 30, 1984. (Ex. DEP-14; ex. RESP-2, 33; test. S. Derby, tr. 09-04-02, pp. 7-9)
23. Based on the plans submitted, the permit application to construct the dam and detention basin was approved by the DEP and on November 8, 1983, Celentano and RDI were issued a permit to construct the structure. The permit noted the provisions of General Statutes §22a-406, which provides that no order, approval or advice of the Commissioner shall relieve any owner or operator of such a

Ashmore, tr. 04-23-03, pp. 1927-1928, 1930; test. A. Bevilacqua, tr. 04-23-03, p. 2023)

structure from his legal duties, obligations and liabilities resulting from such ownership or operation. (Ex. DEP-21)

24. Constructed in 1984, the dam and detention basin impound storm water runoff from a portion of the Ridge watershed located uphill during a storm event and release it at pre-development flow levels to control flooding. Collected runoff within the detention basin is discharged through an eighteen-inch principal outlet pipe located through and at the base of the dam embankment, and then into the existing drainpipe (spillway) where flow is conveyed downstream. (Exs. DEP-24, 25, 27, 34, 42, 51, 75, 77; exs. RESP-28, 32, 62; test. A. Christian, tr. 03-12-03, pp. 1334-1339, 1362-1363, 1381; tr. 03-13-03, pp. 1410-1412, 1492, 1494; test. Bevilacqua, tr. 04-22-03, pp. 1866-1868, 1997-1998, 2023; tr. 04-24-03, 2128-2129)
25. Woermer sustained additional damages due to storm water runoff from the Ridge. DEP inspections of the structure revealed its capacity and configuration was inconsistent with the approved plans and on April 19, 1984, the Commissioner directed Celentano and RDI to submit an as-built plan and plans for a new drainage system to by pass the existing drainpipe. (Ex. DEP-24)
26. Using the as-built plan and typography plan submitted, the DEP inspected the structure and issued a Certificate of Approval (certificate) to Celentano and RDI on September 13, 1984. The certificate expressly required the owner to record the certificate in the land records in the town(s) where the structure is located. It is not known if the certificate was ever recorded. (Ex. DEP-25; exs. RESP-28, 32; test. A. Christian, tr. 03-12-03, pp. 1269-1275, 1329-1330; tr. 03-13-03, pp. 1429-

1430; tr. 03-25-03, p. 1548; tr. 03-25-03, p. 1685; tr. 09-10-03, pp. 3447-3448, 3477-3448)

27. Sometime in 1983, Woermer instituted a lawsuit against RDI and Celentano for real and personal property damages caused by flooding, and along with his lawyer, discussed the lawsuit with Celentano. The case was settled with RDI's insurance company and Woermer believed that repairs to structure and its drainage system would be undertaken. (Exs. DEP-26, 44, 83, 84, 96; test. Woermer, tr. 12-18-02, pp. 833-836; tr. 12-19-02, pp. 905-907, 909, 972-974, 1002)
28. After the certificate was issued, the DEP received a report prepared by Milone & MacBroom Engineering (M&M), an engineering firm hired by Woermer, who concluded the storage capacity of the structure was undersized and capacity of the existing drainpipe was inadequate to safely handle the volume and pressure of outflow. (Ex. DEP-27; test. A. Christian, tr. 03-12-03, pp. 1275-1276)
29. M&M concluded the watershed was about twice the size Singhal had estimated and the dam would overtop during a ten-year storm event, and should it fail, several houses would be exposed to the possibility of a sudden massive flood. Singhal had estimated the watershed was nineteen acres; he later estimated it was twenty-four acres. (Exs. DEP-34, 42; test. A. Christian, tr. 03-12-03, p. 1381)
30. To correct the downstream drainage problems caused by the Ridge, M&M proposed: reconstructing or building a larger detention basin; installing a new spillway discharge pipe and providing an independent drain to service the basement and rear yards of the homes on Warren Avenue; or installing a larger

pipe to flow without surcharge, possibly using a new alignment along Warren Avenue. (Ex. DEP-27)

31. On November 25, 1986, Celentano hosted a meeting at the Ridge model home located at 6 Celentano Drive, Naugatuck with DEP and engineers for RDI, the town and Woermer. The purpose of the meeting was to discuss installation of an eight and one-half inch orifice to the principal outlet and other improvements and remedies, which included re-designing the detention basin to safely pass the 100-year storm event with a minimum of one foot of freeboard from maximum water surface elevation to the top of the dam as a minimum. (Exs. DEP-43, 45; A. Christian, tr. 03-26-03, pp. 1713-1714; test. V. Celentano, tr. 10-07-03, p. 3560)
32. The Commissioner found that Singhal had incorrectly estimated and determined the management of storm flows from the Ridge and as a result the structure was improperly designed and posed a hazard to downstream residents. On February 11, 1987, the Commissioner issued an order (1987 order) to RDI, directing it to make improvements and alterations to the structure and its drainage system. (Ex. DEP-45)
33. Other than RDI's engineers, Celentano negotiated and attended settlement conferences with the DEP and indicated he had authority to resolve 1987 order on RDI's behalf. (Ex. RESP-50; test. A. Christian, tr. 03-12-03, pp. 1283-1284; tr. 03-26-03, p. 1714; tr. 03-27-03, pp. 1742-1743)
34. Two months after the 1987 order was issued, Celentano transferred the property where the structure is sited, adjacent to the Ridge, to Cel-Mor by warranty deed on April 10, 1987 (1987 deed) for liability purposes. The 1987 deed provides a

- facially clear description of the property, but there is no recital made of an easement for any purpose, or map or other instrument. (Exs. DEP-3, 45; test. V. Celentano, tr. 10-23-02, p. 343; tr. 10-24-02, p. 516)
35. RDI appealed the 1987 order and hearings were held on June 6 and July 23, 1987 and other than RDI's attorney and engineers, Celentano was the only person who represented RDI and testified on its behalf. (Exs. DEP-47, 48, 51; exs. RESP-51A, 51B; test. A. Christian, tr. 03-12-03, pp. 1282-1283)
36. During the course of the hearings on the 1987 order, Celentano never informed the hearing officer or the DEP that he sold the property where the structure is sited to Cel-Mor prior to the hearings or that RDI did not own the structure. A final decision affirming the order was issued on June 15, 1988. (Exs. DEP-3, 48, 51; test. A. Christian, tr. 03-12-03, pp. 1286-1291)
37. RDI failed to comply with the 1987 order and final decision, and on February 9, 1990, the Commissioner brought a civil enforcement action against RDI seeking permanent injunctive relief⁷. Celentano was the contact person for RDI's attorneys. Throughout enforcement of the 1987 order, DEP staff understood and believed RDI owned the structure. (Exs. DEP-51, 75; test. W. Marsh, 03-11-03, pp. 1219-1220; test. A. Christian, tr. 03-12-03, pp. 1282-1284; test. DePonte, tr.09-15-03, p. 3026)
38. Sometime in 1991, the DEP reviewed the town land records and discovered Cel-Mor was the owner of the property where the structure is sited, but found no

⁷ *Commissioner of Environmental Protection v. Ridge Development, Inc., Superior Court, judicial district of Hartford-New Britain at Hartford, Docket Number 374125 (February 9, 1990).* (Ex. DEP-51)

- record of the easement. (Ex. DEP-50; test. W. Marsh, tr. 03-11-03, pp. 1219-1220; test. A. Christian, tr. 03-12-03, pp. 1282-1283)
39. On October 20, 1992, RDI entered into a Stipulated Judgment with the DEP to resolve the 1987 order. To date no action has been taken pursuant to this Judgment. (Ex. DEP-51; test. A. Christian, transcripts, 3/13/03 and 10/15/03)
40. In 2001, the town cut and removed over-grown brush and vegetation in and around the detention basin; removed sediment around the principal outlet and installed a concrete beehive over the outlet grate to prevent it from clogging with leaves and debris. Other than maintenance in 2001, the town made no repairs to the structure. (Ex. DEP-55; test. W. Woermer, tr. 12-19-02, p. 974; test. A. Christian, tr. 03-12-03 pp. 1299-1302, 1304-1305, 1332, 1346-1348)
41. The enforcement history of flooding and sediment problems because of the Ridge and the structure dates back to 1983. Present and former residents stated that prior to the development there had been no flooding on Warren Avenue. (Exs. DEP-11-14, 18, 19, 21, 24, 45, 48, 51, 128; test. W. Woermer, tr. 12-18-02, pp. 818-822, 824-825, 827, 829- 830, 837-839; test. G. Barone, tr. 03-28-03, pp. 1762-1763; test. M. Ashmore, tr. 04-23-03, pp. 1879-1981, 1920, 1922, 1930, 1938-1939)

4

Celentano and RDI

42. Chaffer came in as developer of the Ridge with very little cash down and formed RDI for the purpose of taking title to the Ridge. Celentano sold the Ridge to RDI for five million dollars and provided RDI with a five million dollar purchase

money mortgage. (Ex. DEP-97c; test. V. Celentano, tr. 10-23-02, pp. 423-424; tr. p. 10-07-03, p. 3532; tr. 10-09-03, p. 3754; test. D. DePonte, tr. 05-14-03, pp. 2427-2429)

43. Celentano provided the \$800,000 subdivision property bond between RDI and the town as security for road and storm water drainage improvements. He did not remember if he was paid for posting the bond. (Exs. DEP-15, 20; test. V. Celentano, tr. 10-23-02, pp. 395-396; tr. 12-17-02, pp. 620-621; tr. 12-18-02, p. 764; tr. 10-07-03, pp. 3560-3561)
44. Celentano signed Chaffer's signature or initials on certain letters sent to the DEP and was the primary person who oversaw RDI's regulatory and environmental matters concerning the structure. Celentano was the person who coordinated with RDI's environmental engineers and lawyers and was well aware of the design defects of the structure and its drainage problems. Celentano was RDI's "agent," "consultant," "mortgagee," or "intermediary", and received no direct compensation for his work and travel expenses associated with the dam and detention basin. Without paying rent, Celentano was provided with an office and desk by RDI at the Ridge model home. (Exs. DEP-9, 11-19, 21, 24-26, 28, 32, 35, 36, 38, 40, 41, 43, 45, 47, 48, 52, 75, 88, 94, 95, 96, 100, 102-109, 111, 113, 114; exs. RESP-19, 29, 33, 50; test. V. Celentano, tr. 10-23-02, pp. 370, 374, 391, 419-420, 441; tr. 10-24-02, pp. 443-44, 447-449; tr. 12-18-02, pp. 748, 758, 760; tr. 09-16-03, pp. 3075-3078; tr. 10-08-03, pp. 3712-3715; test. S. Derby, transcript 09-04-02; test. W. Marsh, tr. 03-11-03, p.1220; test. D. DePonte, tr. 05-14-02, pp. 2447-2448; tr. 09-15-03, p. 3026)

45. Celentano returned to Florida sometime after 1984 and took monthly trips back and forth from his Florida residence to Connecticut to monitor the progress of construction at the Ridge. He was not compensated by RDI for his flights and hotels. (Test. V. Celentano, tr. 12-18-02, pp. 760-764; test. D. DePonte, tr. 05-14-03, p. 2447)
46. The town had received complaints about children falling in the detention basin and being injured and Celentano arranged for and had a chain link fence and gate installed around the structure. (Exs. DEP-10a, 13, 35, 36; test. V. Celentano, tr. 10-23-02, pp. 378-381)
47. From 1983 to February 2002, Celentano visited the property where the structure is sited on a number of times. He did not remember the reasons why for these visits. (Test. V. Celentano, tr. 10-23-02, p. 367)
48. RDI's income tax statements for the fiscal years 1986 through 1990 show approximately \$2 million dollars in unpaid debt to Celentano. During the fiscal year of 1986, RDI reported \$5 million dollars in sales and Chaffer's salary was twenty-eight thousand dollars. In 1987, RDI reported \$1.4 million dollars in sales and Chaffer's salary was thirty nine hundred dollars. Chaffer's signature is distinct and the signatures on the tax returns do not appear to be that of Chaffer. (Ex. RESP-67; test. V. Celentano, tr. 10-15-03, pp. 4010-4013, 4016-4020, 4022-4023)
49. The accounting firm of Bailey, Moore, Glazer, Schaefer & Proto (Bailey-Moore), located in Woodbridge, prepared RDI's income tax statements. Bailey-Moore are Celentano's auditors and when they work for him in Florida, they are provided

with an office in his Florida residence. (Ex. RESP-67; test. V. Celentano, tr. 09-05-02, pp. 303-304; tr. 10-14-03, p. 3992)

5

The Structure and Its Present Condition

50. The height of the earthen dam from its downstream toe to its crest is between five to six feet. The dam's height from its upstream toe (bottom of the detention basin) to its crest is ten feet. The dam is an integral part of the detention basin, which impounds up to 1.2 acre-feet of water behind the dam. The detention basin is partially excavated and bermed and both the dam and detention basin are interdependent. The storage capacity of the detention basin with one foot of freeboard is 43,600 cubic feet of water. The dam is not registered as required by General Statutes §22a-409 (b). (Exs. DEP-10a, 10b, 10e, 77; ex. RESP-32; test. W. Marsh, tr. 03-11-03, pp. 1209-1210; test. A. Christian, tr. 03-12-03, pp. 1296-1297, 1317-1319, 1331-1332, 1338, 1361-1362; test. W. Woermer, tr. 12-18-02, p. 818; test. A. Bevilacqua, tr. 04-22-03, pp. 1867; tr. 04-23-03, p. 2005, 2013; tr. 09-09-03, p. 2586)
51. A rock-lined emergency spillway channel is approximately 1.2 feet below the dam crest and is designed to operate after the capacity of the principal outlet is exceeded. Discharges from the emergency spillway are directed onto Warren Avenue. (Exs. DEP-10a, 10b, 34, 76; exs. RESP-28, 32, 54; test. A. Christian, tr. 03-12-03, pp. 1298-1299, 1331; tr. 03-13-03, pp. 1405; test. A. Belivaqua, tr. 04-23-04, pp. 2013-2014)

52. Warren Avenue is not designed to convey flow from the emergency spillway. Photographs show flooding of properties along the road and ice conditions on the roadway in the winter. (Exs. 64a-f, 64m-p, 78d-e, 78h, 78i, 78l, 78n, 78o; test. W. Woermer, tr. 12-18-02, pp. 847-864; tr. 12-19-02, p. 899; test. M. Ashmore, tr. 04-23-03, pp. 1881, 1905, 1914; test. A. Christian, pp. tr. 10-15-03, pp. 4092-4095)
53. Sometime after the 1987 order, RDI installed an eight and one half inch orifice to the principal outlet to restrict outflow into the spillway and limit downstream flooding. DEP concluded the orifice has reduced downstream flooding but has caused the emergency spillway to operate more often and the dam to be in an unsafe condition more frequently than would otherwise. The orifice was never intended to be a sole remedy and no other remedies or structural repairs to address the safety of the dam have been undertaken. (Ex. DEP-43; test. W. Woermer, tr. 12-19-02, pp. 974-975; test. A. Christian, tr. 03-12-03, pp.1304-1305, 1348; tr. 03-25-03, p. 1566; tr. 03-27-03, p. 1738; tr. 10-15-03, pp. 4041, 4066-4071, 4140)
54. DEP staff and the respondents' expert engineer, Andrew Bevilacqua (Bevilacqua) calculated the watershed and determined it was approximately thirty three acres and thirty five acres, respectively. Mr. Bevilacqua disagreed with Singhal's watershed determination and the methods he used to compute outflows. (Ex. DEP-76; exs. RESP-28, 32; test. A. Christian, tr. 03-12-03, pp. 1380-1381; test. A. Bevilacqua, tr. 04-24-03, pp. 2106, 2109-2110; tr. pp. 2569-2570)
55. Two rainstorms, each less than one-year storm events, occurred in the Naugatuck Valley on March 21 to March 22, and March 29, 2001. Photographs show water

within the detention basin almost at the dam crest and discharges from the emergency spillway flowing down Warren Avenue. Woermer informed DEP staff the dam nearly overtopped, and on March 22 and 28, 2001, the DEP inspected the dam and confirmed it would have overtopped and possibly failed if there had been a larger storm event. (Exs. DEP-54, 55, 57, 64g, 64h, 64i, 64m; test. W. Woermer, 12-18-04, pp. 852-859; test. D. Glowacki, tr. 12-19-02, pp. 1042-1045; test. W. Marsh, tr. 03-11-03, pp. 1155-1159; test. A. Christian, tr. 03-12-03, pp. 1327-1328; tr. 03-25-03, pp. 1532-1533)

56. On various occasions, Woermer and Ashmore have observed water within the detention basin almost at the dam crest. (Exs. DEP-54, 64g, 64h, 64i, 78a, 78b, 78c, 78d; test. W. Woermer, tr. 09-04-02, pp. 103; tr. 12-18-02, pp. 824-825, 841, 853-854; test. M. Ashmore, tr. 04-23-03, pp. 1879, 1895-1896)

57. The dam hazard classifications are set forth in Regulations Connecticut State Agencies §22a-409-2 and is a rating determined by evaluating the potential loss of life or degree of property damage caused by a dam failure and not on the existing condition of the dam and its safety. (Test. W. Marsh, tr. 03-11-03, pp. 1142, 1217-1219)

58. Since 1984, the DEP has inspected the dam at least twenty times and has classified the dam as Class B. This means that in the event of its failure, there would be possible loss of life and significant economic loss to downstream structures. Prior to the enactment of the dam safety regulations, in May 1987, the DEP used a three tier rating system and the dam was classified as a Class B, "significant hazard dam". (Exs. DEP-10a-10e, 14, 22-24, 33, 43, 44, 48-50, 51,

54, 55, 56a-56i; test. S. Derby, tr. 09-04-02, pp. 30, 45; test. W. Marsh, tr. 03-11-03, pp. 1142-1152, 1191-1192, 1209-1211; test. A. Christian, tr. 03-12-03, pp. 1280, 1291, 1307-1308)

59. The dam will detain a two-year storm event with one foot of freeboard and a trickle of water will spill over into the emergency spillway. During a ten-year storm event, the dam will fail and approximately fifty-four cubic feet per second of water will be discharged. Based on DEP rainfall data records, a storm equal to or greater than a ten-year storm event has not occurred in the area since the dam was constructed. (Test. A. Christian, tr. 03-13-03, pp. 1403-1404, 1408-1409, 1415, 1419-1420, 1421 test. A. Bevilacqua, tr. 09-09-03, pp. 2570-2571, 2592)
60. The DEP has concluded the dam in its present condition is incapable of safely passing a one hundred year storm event and is unsafe. The dam embankment is saturated with water, seepage is occurring at its base, its crest is uneven, and shows signs of depressions, and embankment soils and materials are insufficiently compacted. (Exs. DEP-50, 56c-55g, 77; test. W. Woermer, pp. 825, 841; test. A. Christian, pp. 1319-1320, 1325-1326, 1342-1346, 1369-1375, 1419-1420, 1441, 1445-1450; tr. 10-15-03, p. 4081; test. A. Bevilacqua, tr. 09-09-03, pp. 2569-2571)
61. In the event of a dam breach, DEP staff concluded there would be erosion, and damage to habitable structures downstream, and Bevilacqua concluded there would be damage to landscaping and driveways. (Ex. DEP-50; test. W. Marsh, tr. 03-11-03, pp. 1143-1149; test. A. Christian, tr. 10-15-03, pp. 4062-4063, 4073-4078; test. A. Bevilacqua, tr. 05-14-03, pp. 2331-2334)

The 2002 Order

62. As a result of its inspections, the DEP found the detention basin hydraulically inadequate and it cannot safely pass the 100-year storm event without overtopping the dam. On February 21, 2002, the Commissioner issued an order to the respondents (2002 order) which requires among other things, that (1) the respondents retain a licensed qualified engineer; (2) submit and implement an emergency operations plan; (3) submit a scope of study investigating the condition of the dam, detention basin and downstream drainage system, including but not limited to an evaluation of alternatives for discharging the subdivision's storm water including the discharge of storm water into Beacon Hill Brook through a pipe drainage system; (4) submit an investigation report for the Commissioner's review and written approval; and, (5) submit a plan to place the structure in a safe condition and appropriately discharge storm water from the Ridge subdivision without creating flooding problems. The plan shall include, but not limited to, among other things, a provision for the installation of a new drainage system and other improvements to the structure. (Ex. RESP-1)
63. The 2002 order provides that in the event a respondent becomes aware it has not complied with or may not be able to comply on time with the requirements in the order, it shall immediately notify the Commissioner in writing. (Ex. RESP-1)
64. DEP staff and Bevilacqua agree that in order to determine the stability of the dam embankment, compaction tests and soils analysis should be conducted to make sure it was constructed in accordance with the materials required in its design plan

and if there are any weaknesses inherent in its construction process that would lead to its failure. (Test. A. Christian, tr. 03-13-03, p. 1452; tr. 10-15-03, tr. 4081; test. A. Bevilacqua, tr. 04-23-03, pp. 2012-2013; tr. 05-12-03, p. 2237-2238; tr. 09-09-03, pp. 2574-2576)

65. Based on sound engineering practices, industry standards and DEP past practices the design standard for a Class B hazard dams is the 100-year storm event with one foot of freeboard. (Test. W. Marsh, tr. 03-11-03, p. 1162; test. A. Christian, tr. 03-13-03, pp. 1424-1425)

66. Typically, most municipalities in the state use the one hundred year storm event with one foot of freeboard as the storm water detention design standard. The DEP will use a town's design standard, or if none exists, it will use the accepted engineering practice design standard used in the state. The upper range storm water detention design standard in the Town of Naugatuck is the one hundred year storm event. (Test. A. Christian, tr. 03-28-03, pp. 1772-1773, 1792-1793; test. A. Bevilacqua, tr. 04-24-03, pp. 2051-2052, 2064-2066)

67. In order for the dam to safely pass the 100-year storm event with one foot of freeboard, the capacity of its spillway should be increased. To accomplish this, the height of the dam should be raised at least one and one-half feet and an additional spillway drainage pipe should be installed down the Warren Avenue right of way. (Test. A. Christian, tr. 03-13-03, pp 1451-1453; tr. 10-15-03, pp. 4092-4095)

68. After evaluating the constraints of the property where the dam is located and the safety of the downstream property owners, the DEP concluded the requirements

of the 2002 order can be reasonably met. (Ex. DEP-1; test. S. Derby, 09-05-02, tr. 09-05-02, pp. 280-282; test. A. Christian, tr. 03-13-03, pp. 1453-1454, 1467-1468; tr.03-27-03, p.1752)

69. Approximately nineteen years after its execution and seven months after the 2002 order was issued in February 2002, a copy of the original easement was recorded on the Naugatuck Land Records on September 5, 2002. (Exs. RESP-2, 47)

III

DECISION

Conclusions of Law

1

Jurisdiction

Under General Statutes §22a-401, “[a]ll dams, dikes, reservoirs and other similar structures, with their appurtenances which, by breaking away or otherwise, might endanger life or property, [are made] subject to the jurisdiction [of the Commissioner, as] conferred by...chapter [446j] of the General Statutes.” The Commissioner of Environmental Protection therefore has jurisdiction over any dam and its appurtenances that might endanger life or property if it were to fail.

In the exercise of his statutory authority, the Commissioner is responsible for “formulat[ing] all rules, definitions and regulations necessary to carry out the provisions of chapter [446j] and...to make such investigations and gather such data concerning dams, watershed, sites, structures...as may be necessary in the public interest...”. General Statutes §22a-401. The dam safety regulations set forth the requirements for

registration of a dam by its owner and responsibilities with respect to its maintenance. Regs., Conn. State Agencies §§22a-409-1 and 22a-409-2.

2

Condition of the Dam

The Commissioner is authorized under the provisions of §22a-402 to investigate and inspect “all dams or other structures which, *in his judgment*, would by breaking away, cause loss of life or property damage. In addition, “[i]f after any inspection... [he] finds any such structure to be in an unsafe condition, he shall order the person⁸ owning or having control thereof to place it in a safe condition or to remove it and shall fix the time within which such order shall be carried out.” General Statutes §22a-402.

For over twenty years, this dam and its appurtenances have been the subject of numerous inspections by the DEP. Although an unregistered dam, the DEP has the power and authority to inspect all dams, which in the Commissioner’s judgment would by breaking away cause loss of life and property damage. General Statutes §22a-402. The dam embankment is saturated with water and seepage is occurring at its base. Its crest is uneven and eroded, and the dam is unstable and distressed. The dam can only detain a two-year storm event and any storm equal to or greater than a ten-year storm event will overtop the dam and cause property damage to habitable structures downstream. The orifice installed over the principal outlet has reduced the frequency of downstream flooding, but was never intended to be a sole remedy and has caused the detention basin to fill up more frequently than would otherwise, making the condition of

⁸ As used in Chapter 446j, “person” shall have the same meaning as defined in subsection (c) of 22a-2. General Statutes §22a-402. Person means, “any individual, firm, partnership, association, syndicate, company, trust, corporation, limited liability company, municipality, agency or political or administrative subdivision of the state, or other legal entity of any kind.” General Statutes §22a-2(c).

the dam unsafe. DEP staff and the respondent's engineer both concur compaction tests and soils analysis should be conducted to assure the dam was constructed in accordance with the materials proposed in Singhal's plan and to determine if there are any weaknesses inherent in its construction process that would lead to its failure.

The dam is classified as Class B⁹ and should it fail, it will cause significant economic damage to residential structures downstream and possible loss of life. The accepted design standard for a storm water detention facility for most towns in the state is the 100-year storm event. In considering the unique structure of each dam and to assess whether it is in a safe condition, the Commissioner has routinely and consistently assessed the capability of a dam to convey flows without overtopping under the 100-year storm event. When it has been determined that a dam cannot safely withstand the 100-year storm event, the dam has been declared unsafe. *See, e.g., Kish v. Cohn*, 59 Conn. App. 236 (2000); *Lake Williams Beach Association v. Gilman Brothers Company*, 197 Conn. 134 (1985); *Errichetti Associates v. Boutin*, 183 Conn. 481 (1981).

“[T]he language of Section 22a-402 does not specifically require that a dam actually be in imminent danger of failing so as to present a ‘clear and present danger to the public safety’ before a determination can be made that it is in an unsafe condition.” *Providence & Worcester Railroad Co. v. Department of Environmental Protection*, Superior Court, judicial district of New Britain at New Britain, Docket No. 0504990S, 2001 Ct. Sup. 10229, 10246 (July 27, 2001). The evidence in the record contains sufficient facts to conclude the dam is unable to detain a 100-year storm event and its

⁹ Section 22a-409-2(d)(1)(D) of the Regulations of Connecticut State Agencies defines a Class B dam as a “significant hazard potential dam which, if it were to fail, would result in any of the following: (i) possible loss of life; (ii) minor damages to habitable structures, residences, hospitals, convalescent homes, schools,

condition is unsafe and, if it were to fail would cause significant economic loss and damage to habitable structures downstream.

3

Ownership and Control Pursuant to §22a-402

Any person owning or having control of a dam is responsible for placing it in a safe condition. General Statutes §22a-402. The terms 'own' or 'control' are not defined in the statute, however, our Supreme Court has stated that the term owner "is one of general application and includes one having an interest other than the full legal and beneficial title [and] is one of flexible meaning, and it varies from an absolute proprietary interest to a mere possessory right . . . [i]t is not a technical term and, thus, is not confined to a person who has the absolute right in a [real] chattel, but also applies to a person who has possession and control." *Hope v. Cavallo*, 163 Conn. 576, 580-581 (1972). The definition of 'owner' pursuant to §22a-409-1 (12) of the Regulations of Connecticut State Agencies means "any individual, firm, partnership, association, syndicate, company, trust, corporation, municipality, agency, or political or administrative subdivision of the state, or any other legal entity of any kind holding legal title to the dam." To have control is to have "the authority to manage, direct, superintend, restrict or regulate [a dam]." *Bates v. Connecticut Power Company*, 130 Conn. 256, 261 (1943), quoting *State v. Ehr*, 52 N.D. 946, 953 (1925).

etc.; (iii) damage to or interruption of the use of service of utilities; (iv) damage to primary roadways (less than 1500 ADT) and railroads; significant economic loss."

The Easement

The respondents claim the town is the holder of the easement and is a person who owns or has control of the dam. An easement is a nonpossessory interest in the land of another. *Martin Drive Corporation et al v. Thorsen*, 66 Conn. App. 766 (2001). “An easement creates a nonpossessory right to enter and use land in the possession of another and obligates the possessor not to interfere with the uses authorized by the easement.” 1 Restatement (Third), [Property, Servitudes §1.2 (1), p 12. (2000). “Easements are not ownership interests but rather privileges to use land of another in a certain manner for certain purpose.” *Il Giardino, LLC v. Belle Haven Land Company*, 254 Conn. 502, 528 (2000).

A valid dedication of an easement to a municipality requires the presence of two elements; a manifested intent by the owner to dedicate the land involved for the use of the public and an acceptance by the proper authorities or by the general public. *Meder v. City of Milford*, 190 Conn. 72 (1983) “A valid acceptance may be either express or implied.” *A & H Corporation v. Bridgeport*, 180 Conn. 435, 442 (1980). “Implied acceptance may be established either by the public’s actual use of the property or by actions of the municipality.” *Id.* at 440-41.

The respondents have not produced sufficient evidence for me to conclude the town accepted the easement. The town did not participate in the design and construction of the dam, financially allocate public funds for its construction, or suggest it be erected on private property. There is no credible evidence in the record for me to conclude the

town paid nominal or valuable considerations for the easement or undertook an official legislative or ministerial act appropriate to confer acceptance.

In addition, evidence in the record demonstrates the town maintained the dam eighteen years after Celentano had executed the easement. “Regardless of the mode of acceptance, it must be made within a reasonable period of time after the intent to dedicate has been manifested.” *DiCioccio v. Wethersfield*, 146 Conn. 474, 481 (1959). The elapsed time between Celentano’s execution of the easement and maintenance of the dam by the town is an unreasonable period of time for me to reasonably infer the town assented to the easement.

“The intent of a grantor to create an easement may be inferred from an examination of the deed, maps and recorded instruments introduced as evidence.” *Perkins v. Fasig*, 57 Conn. App. 71, 76, cert. denied 253 Conn. 925 (2000). The 1987 deed, which conveyed the property where the dam is sited to Cel-Mor, makes no mention of the easement, nor does it make any reference to a map or instrument.

Even if I were to find the town is the holder of the easement, the easement does not convey ownership of the dam to the town. Rather it conveys a privilege to use the land of another in a certain manner for certain purpose. *Il Giardino, LLC v. Belle Haven Land Company*, supra, 254 Conn. 502. “The principles governing the construction of instruments of conveyance are well established. In construing a deed a court must consider the language and terms of the instrument as a whole...[and] in reference to, the nature and condition of the subject matter of the grant at the time the instrument is executed, and the obvious purpose the parties had in view...”. *Mulla v. Maguire*, 65 Conn. App. 525, 531-32, cert. denied, 258 Conn. 934 (2001).

The easement provides in relevant part:

“Vincent Celentano...for consideration of One Dollar (\$1.00) and other valuable considerations, received to my full satisfaction of RIDGE DEVELOPMENT, INC. and the BOROUGH OF NAUGATUCK...a drainage easement and right to grade and construct a water retention basin over and upon...a portion of property owned by me...[s]aid easement shall be for the purpose of constructing, grading and maintaining a detention basin thereon and for all other purposes connected therewith to detain the flow of storm water.”

The plain language in the easement confers a right on behalf of the town to access the property owned by another for the purpose of grading, constructing and maintaining the detention basin. Chapter 446j of the General Statutes regulates the maintenance of dams and reservoirs, and the dam safety regulations established by the Commissioner’s inspection set forth, *inter alia*, the responsibility of the owners of dams with respect to maintenance. Regs., Conn. State Agencies §22a-409-2(j). The easement may confer an obligation or intangible interest on the town to maintain the dam, but the evidence in the record is insufficient for me to conclude the town is a person who either owns or has control of the dam pursuant to §22a-402.

b

Celentano’s Control Pursuant to §22a-402

“Liability for negligence does not depend upon title; a person is liable for an injury resulting from his negligence in respect of a place or instrumentality which is in his control and possession, even if he is not the owner thereof.” *Ziulkowski v. Kolodziei*, 119 Conn. 230, 232 (1934). Celentano proposed and financed the development of the Ridge, and secured a subdivision property bond for road and storm water drainage improvements. Celentano negotiated resolution of the 1983 order with the DEP and to

correct the downstream storm water runoff problems associated with the Ridge proposed construction of the dam on his property located adjacent to the Ridge. He was the owner of the property at the time the dam was constructed in 1984, and the dam construction permit is issued to him and RDI. Celentano was the person who oversaw RDI's regulatory and environmental compliance matters concerning the dam. Other than the attorney representing RDI and RDI's engineers, Celentano was the only person who attended hearings on the 1987 order and testified about the dam. Two months after the 1987 order was issued, Celentano transferred the property where the dam is sited to Cel-Mor by for liability purposes and never informed the DEP of the transfer as required by §22a-401¹⁰. Celentano is the president, sole director, officer and shareholder of Cel-Mor and is responsible for making decisions on the company's behalf, including decisions concerning the dam. During the period Cel-Mor was dissolved, Celentano ran the company as Vincent D. Celentano, D/B/A Cel-Mor Investments, Inc. The record contains sufficient evidence for me to conclude Celentano is a person who has control of the dam.

c

Cel-Mor's Ownership Pursuant to §22a-402

Cel-Mor is currently the record owner of the property where the dam is sited and pays the real estate taxes on the property. The 1987 deed, which conveyed the property to Cel-Mor provides a clear description of the property but there is no mention of an

¹⁰General Statutes §22a-401 provides: "[t]he owner of any dam...under the jurisdiction conferred by this chapter, shall notify the Commissioner, by registered mail...of the transfer of ownership of any such dam...not later than ten days after the date of such transfer." There is no evidence in the record Celentano notified the DEP of the transfer of ownership of the dam.

easement for any purpose, or map or other instrument. The record contains sufficient evidence for me to conclude Cel-Mor is a person who owns and has control of the dam.

4

Responsible Corporate Officer Doctrine

The policy of the state of Connecticut is to conserve, improve and protect its natural resources and environment and the interests in the health, safety and welfare of the people of the state. General Statutes §§22a-1 through 22a-15. Public welfare statutes “pervasively affect activities which threaten human health and safety as well as the environment.” *In re Dougherty*, 482 N.W.2d 485, 489 (1992). Section 22a-402 is clearly a strict liability statute enacted to protect the health, safety and welfare of the citizens of the state from the hazards of unsafe dams.

Under Connecticut law, “[l]iability may be imposed upon a corporate officer for strict liability public welfare offenses if the following three elements are established: (1) the individual must be in a position of responsibility which allows the person to influence corporate policies or activities; (2) there must be a nexus between the individual's position and the violation in question such that the individual could have influenced the corporate actions which constituted the violations; and (3) the individual's actions or inactions facilitated the violations.” *BEC Corporation et al. v. Department of Environmental Protection*, 256 Conn. 602, 618 (2001). Celentano is the president, sole director, officer and shareholder, and influences and controls Cel-Mor's finances, policies and activities. Celentano is the person responsible for making decisions on Cel-Mor's behalf, including decisions concerning the dam. By reason of his position, authority and

control within the organization, Celentano, by his own acts and omissions¹¹ failed to correct the violations of General Statutes §22a-402. Based on the evidence in the record and application of the responsible corporate officer doctrine, I find Celentano personally liable for violations of General Statute §22a-402.

5

Reasonable Apportionment

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. 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. *Connecticut Building Wrecking Co. v Carothers*, 218 Conn. 580 (1991)

The respondents have presented no evidence for me to reasonably apportion and allocate a percentage share of responsibility. Therefore, the respondents are jointly and severally liable for violations of §22a-402.

6

Respondents Challenges to the 2002 Order

The respondents assert numerous specific challenges to the order: (1) the requirements regarding the installation of a new drainage system down Warren Avenue exceed the authority and jurisdiction of the Commssioner, and its terms are unreasonable, arbitrary and impossible to address; (2) the prior orders directed to RDI as the person who either owned and controlled the dam insulate and relieve the respondents' from any

¹¹ "An omission or failure to act [may be] deemed a sufficient basis for a responsible corporate agent's liability. It [is] enough in such cases that, by virtue of the relationship he bore to the corporation, the agent had the power to prevent the act complained of." *BEC Corporation v. Dept. Of Environmental Protection*, 256 Conn. 602, 625 (2001).

potential liability; (3) the Commissioner failed to perform and provide the respondents with periodic inspection reports; and (4) the Commissioner is estopped from pursuing an enforcement action against the respondents because of the DEP's inconsistent prior actions and omissions with respect to ownership of the dam.

"Environmental statutes, considered remedial in nature, are to be construed liberally to reach the desired result." *Keeney v. Town of Saybrook*, 237 Conn. 135, 157 (1996), citing *Manchester Environmental Coalition v. Stockton*, 184 Conn. 51, 57 (1981); *Starr v. Commissioner of Environmental Protection*, 226 Conn. 358, 382 (1993). "All dams...with their appurtenances shall be subject to the jurisdiction conferred by this chapter...". Section 22a-401. The requirement in the order that the respondents submit plans for the installation of a new drainage system is clearly an appurtenance associated with dam's operation and is within the Commissioner's jurisdiction. The respondents' assertion the order is unreasonable, arbitrary and impossible to comply with is premature, speculative and unsupported by evidence in the record. There is no evidence in the record that the respondents have undertaken a scope of study or investigation of the dam and its appurtenances and the requirements are impossible, arbitrary and unreasonable. In the event the respondents are unable to comply or experience a delay in complying with the requirements of the order, they may notify the Commissioner as provided by the order.

General Statutes §22a-406, provides that "nothing in [chapter 446j], and no order approval or advice of the commissioner, shall relieve any owner of such a structure from his legal duties, obligations and liabilities resulting from such ownership...". Therefore, any previous DEP orders or certificate of approval directed to RDI will not relieve the

respondents of their legal responsibilities and obligations as owners or persons with control over the dam.

Section 22a-409 (b) requires the owner of a dam to register its location and dimensions with the Commissioner. There is no evidence in the record the respondents complied with the requirements of Section 22a-409 (b). Therefore, the Commissioner was not required to furnish them with a copy of his written inspection reports. Regs., Conn. State Agencies §22a-409-2. In addition, the evidence in the record demonstrates Celentano was the primary person who oversaw RDI's and Cel-Mor's regulatory and environmental compliance matters concerning the dam and its appurtenances and had knowledge the structure was defectively designed and posed a hazard to downstream residents.

The general rule in Connecticut is that "estoppel may not be invoked against a public agency in the exercise of its governmental functions." *Kimberly-Clark Corp. v. Dubno*, 204 Conn. 137, 146-47 (1987). "However, a limited exception [to the rule]...is made where the party claiming estoppel would be subjected to a substantial loss if the public agency were permitted to negate the acts of its agents." *Id.* The test for public agency estoppel is set forth in *Bauer v. Waste Management of Connecticut, Inc.*, 234 Conn. 221, 247 (1995):

"in order for a court to invoke municipal estoppel, the aggrieved party must establish that: (1) an authorized agent of the municipality had done or said something calculated or intended to induce the party to believe that certain facts existed and to act on that belief; (2) the party had exercised due diligence to ascertain the truth and not only lacked knowledge of the true state of things, but also had no convenient means of acquiring that knowledge; (3) the party had changed its position in reliance on those facts; and (4) the party would be subjected to a substantial loss if the municipality were permitted to negate the acts of its agents. See *Zotta v. Burns*, 8 Conn. App. 169, 175-176, 511 A.2d 373

(1986); *Greenwich v. Kristoff*, 2 Conn. App. 515, 522-23, 481 A. 2d 77, cert. Denied, 194 Conn. 807, 483 A.2d 275 (1984).”

There is no evidence in the record that an authorized agent of the DEP took any action or said anything calculated or intended to induce the respondents to believe that certain facts existed and to act on that belief. It was not until after the dam and detention basin was constructed the DEP learned the Ridge watershed was grossly underestimated and the structure was negligently designed. Prior to 1991, the DEP understood that RDI either owned or controlled the dam. “An administrative agency, charged with the protection of the public interest, is certainly not precluded from taking appropriate action to that end because of mistaken action on its part in the past...[and t]he doctrine of equitable estoppel is not a bar to the correction by the Commissioner or a mistake of law.” *William Raveis Real Estate, Inc. v. Commissioner of Revenue Services*, 44 Conn. Sup. 1, 7-8, affirmed 43 Conn. App. 744 (1995). The respondents’ contention the DEP is precluded from taking action because of its prior actions and omissions with respect to ownership and control of the dam fails, especially when I can reasonably infer from the evidence in the record, that at least some of those mistaken actions and omissions in the past were due in large part by the acts, representations and omissions of Celentano. The 2002 order alleges specific facts and the record contains no evidence that would lead the respondents to reasonably believe the DEP did not insist on its compliance.

To support a claim of estoppel, the respondents must establish they exercised due diligence in ascertaining the legality of their conduct, “and that [they] not only lacked the knowledge of the true state of things but had no convenient means of acquiring that knowledge.” *Greenwich v. Kristoff*, 2 Conn. App. 515, 522 (1984). Celentano knew the

structure was defectively designed and acting on his own behalf and or the behalf of RDI and Cel-Mor, he had first hand knowledge of the ownership and control of the dam and violations of §22a-402. The respondents have not produced sufficient evidence to for me to reasonably infer they acted in good faith, exercised due diligence to ascertain the truth, and lacked knowledge of the true state of things, or had no convenient means of acquiring that knowledge. *Bauer v. Waste Management of Connecticut*, supra, 234 Conn. 247. As to the fourth element of public agency estoppel, there is no sufficient evidence in the record for me to conclude what substantial loss the respondents would be subjected to if the DEP were permitted to negate the acts of its agents. The respondents have failed to produce sufficient evidence to establish the elements necessary to support a claim of estoppel.

IV

MODIFICATION

To assure the dam is constructed in accordance with the materials proposed in its original design and determine if there are weaknesses inherent in its construction that would lead to its failure, both DEP staff and the respondents' expert engineer agreed that compaction tests and soils analysis should be conducted. Therefore, I recommend that Order Number DSO-2002-1009V be modified as follows:

1. In Section B. 1. c., Submit Scope of Study for Investigation, add a new section (v) as follows: "*(v) conduct an analysis of slope stability and soils compaction tests of the earthen dam.*"

V

CONCLUSION

The Commissioner has properly exercised jurisdiction over the dam and its appurtenances. The issuance of the order to the respondents is appropriate because they either own or control the dam, including its appurtenances. The record contains sufficient evidence to conclude the dam is in an unsafe condition and the required activities as set forth in the order are reasonable and necessary to prevent a dam failure.

Order Number DSO-2002-1009V issued to the respondents, Vincent D. Celentano, Cel-Mor Investments, Inc. and Vincent D. Celentano, D/B/A Cel-Mor Investments, Inc., as modified above, is *affirmed*. All of the deadlines set out in the order that run from the date of issuance shall instead run from the date of this decision.

May 28, 2004
Date

Elaine R. Tata
Elaine R. Tata, Hearing Officer

APPENDIX A

PARTY LIST

Final Decision in the matter of Vincent D. Celentano, Cel-Mor Investments, Inc. and Vincent D. Celentano, D/B/A Cel-Mor Investments, Inc., Order Number DSO-2002-1009V.

PARTY

REPRESENTED BY

Vincent D. Celentano

Bruce L. McDermott, Esq.
Wiggin & Dana

Cel-Mor Investments, Inc.

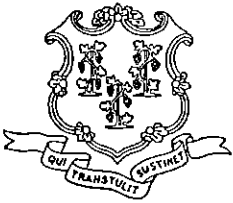
One Century Tower
P.O. Box 1832

Vincent D. Celentano, D/B/A
Cel-Mor Investments, Inc.

New Haven, CT 06508-1832

Department of Environmental Protection
Inland Water Resources Division
79 Elm Street
Hartford, CT 06106

Assistant Attorney General Patricia Horgan
Office of the Attorney General
55 Elm Street
Hartford, CT 06106



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



TRULY COPY OF THE ORIGINAL.
NAME & TITLE: [Signature]
CONN. DEPT. OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER MANAGEMENT

STATE OF CONNECTICUT

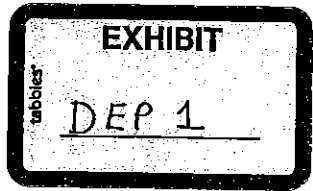
vs.

VINCENT D. CELENTANO,
CEL-MOR INVESTMENTS, INC. and
VINCENT D. CELENTANO, D/B/A
CEL-MOR INVESTMENTS, INC.

) DSO-2002-1009V
)
)
) DETENTION BASIN DAM
) WARREN AVENUE, NAUGATUCK
)
)

ORDER

- A. The Commissioner of Environmental Protection ("the Commissioner") finds:
1. Cel-Mor Investments, Inc. ("Respondent Cel-Mor") is a corporation organized under the laws of the State of Connecticut with a business address at 216 Crown Street, Suite 502, New Haven, Connecticut.
2. Respondent Cel-Mor was reinstated as a corporation in good standing on or about June 13, 2001, having been dissolved by forfeiture on March 30, 1990.
3. Vincent D. Celentano ("Respondent Celentano") is the president, director and stockholder of Respondent Cel-Mor as of April 21, 2001. Respondent Celentano was the president of Cel-Mor at the time it was dissolved by forfeiture in 1990.
4. Respondent Celentano, as a corporate officer of Respondent Cel-Mor, is and has been in a position of responsibility which allows him to influence or control corporate conduct with respect to the dam and the detention basin.
5. At all times relevant to this order, including the period of time from March 30, 1990 to June 13, 2001, Respondent Celentano has conducted business as Cel-Mor Investments, Inc. ("Respondent Celentano d/b/a Cel-Mor Investments, Inc.").
6. Respondents Cel-Mor, Celentano and Celentano D/B/A Cel-Mor Investments, Inc. are collectively referred to in this Order herein as "Respondents."
7. Respondent Cel-Mor is the owner or has control of a dam ("dam") and detention basin ("detention basin") located on Warren Avenue in Naugatuck, Connecticut by virtue of a deed from Respondent Celentano, Trustee Lighthouse Point, dated April 10, 1987 and recorded on volume 309, page 400 of the Naugatuck Land Records.



8. At sometime prior to 1987, the dam and detention basin were constructed as part of The Ridge Subdivision ("subdivision") drainage system; however, the detention basin fails to adequately detain stormwater from the subdivision thereby causing flooding on Warren Avenue and downstream properties adjacent to Warren Avenue.
9. The detention basin, as constructed, is hydraulically inadequate and cannot pass the 100 year return frequency storm without overtopping the dam's embankment.
10. The dam would, by breaking away, cause loss of life or property damage.
11. The dam is in an unsafe condition.

B. The Commissioner, acting under Conn. Gen. Stat. §§ 22a-6 and 22a-402, orders Respondents as follows:

1. a. Retain a Professional Engineer Licensed to Practice in Connecticut. On or before 10 days following the issuance of this Order, Respondents shall retain a professional engineer licensed to practice in Connecticut and acceptable to the Commissioner to prepare, the studies and documents required by this Order and to oversee the actions required by this Order and by that date, notify the Commissioner in writing of the identity of such engineer ("the Engineer"). Respondents shall retain the Engineer until this Order is fully complied with and within 10 days after retaining any engineer other than one originally identified under this paragraph, Respondents shall notify the Commissioner in writing of the identity of such other engineer. The Engineer shall have specific and substantial experience in preparation of hydrologic and hydraulic studies and the design and implementation of dam/detention basin repair plans. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable engineer unacceptable.
- b. Submit and Implement Emergency Operations Plan. On or before 30 days following the issuance of this Order, Respondents shall submit to the Commissioner for his review and written approval an Emergency Operation Plan prepared in accordance with the "Guidelines for the Preparation of Dam Emergency Operation Plans" by the Department of Environmental Protection, dated 9/94 and made part of this Order as Attachment A. Upon the Commissioner's written approval of the Emergency Operation Plan, Respondents shall implement said plan until such time as a revised Emergency Operation Plan is approved by the Commissioner.

- c. Submit Scope of Study for Investigation. On or before 30 days following the issuance of this Order, Respondents shall submit for the Commissioner's review and written approval, a scope of study for investigation of the condition of the dam, detention basin and downstream drainage system ("scope of study"), including but not limited to: (i) a hydrologic and hydraulic analysis of the detention basin's watershed to determine pre-subdivision/development's runoff and peak flow rates for 2-, 10-, 25- and 100-year return frequency stormwater events, (ii) a hydrologic and hydraulic analysis of the detention basin's watershed to determine the existing runoff and peak flow rates for 2-, 10-, 25- and 100-year return frequency stormwater events, (iii) the detention basin's storage capacity and discharge capability to determine necessary modifications to the detention basin and outlet channel and (iv) evaluation of alternatives for discharging the subdivision's stormwater including discharge of such stormwater into Beacon Hill Brook through a pipe drainage system.

The scope of study shall also include a description of the proposed methods to be used by the Engineer in investigating said conditions and a proposed schedule for completing both the investigation and a report of investigation identified in subparagraph B.1.e. of this Order.

- d. Perform the Investigation. Respondents shall perform the investigation and other actions specified in the approved scope of study in accordance with the approved schedule(s).
- e. Submit Report of Investigation. Unless otherwise specified by the Commissioner in writing, Respondents shall within 15 days of completing the investigation, submit for the Commissioner's review and written approval, a comprehensive and thorough report signed and sealed by the Engineer in accordance with section 20-300-10 of the Regulations of Connecticut State Agencies ("RSCA"), which report describes in detail (i) the investigation performed, (ii) results of the investigation, (iii) conclusion(s) about the condition of the dam and (iv) recommendations for placing the dam in a safe condition including but not limited to dam repair alternatives and evaluation of alternatives for discharging the subdivisions stormwater including discharge of such stormwater into Beacon Hill Brook through a pipe drainage system ("report of investigation").
- f. Supplemental Investigation and Revised Report. If the investigation carried out under an approved scope of study does not fully characterize the condition of the dam to the satisfaction of the Commissioner, the Commissioner may give written notice to Respondents that a supplemental investigation ("supplemental investigation") is required providing a schedule for performance of the

supplemental investigation and submission of a revised report of investigation. If no schedule for performing the supplemental investigation and submitting a revised report of investigation is provided by the Commissioner, the supplemental investigation shall be completed on or before 30 days after notice from the Commissioner that such supplemental investigation was required.

Except as may be provided in the supplemental investigation schedule approved by the Commissioner, on or before 30 days after the approved date for the completion of any supplemental investigation, Respondents shall submit for the Commissioner's review and written approval, a comprehensive and thorough revised report signed and sealed by the engineer in accordance with section 20-300-10 of the RCSA. The revised report of investigation shall describe in detail (i) all investigations performed, (ii) results of all investigations, (iii) conclusion(s) about the condition of the dam, and (iv) recommendations for placing the dam in a safe condition, including but not limited to alternative means for discharging stormwater from the subdivision ("revised report of investigation").

- g. Submit Plan to Place the Dam/Detention Basin in a Safe Condition. On or before 60 days following the date of the Commissioner's approval of the report of investigation or any revised report of investigation, Respondents shall submit for the Commissioner's review and written approval, a plan which describes in detail the proposed actions to place the dam in a safe condition and appropriately discharge stormwater from the subdivision without creating flooding problems. Such plan must be signed and sealed by the engineer in accordance with section 20-300-10 of the RCSA and shall be consistent with recommendations found in the report of investigation, or any revised report of investigation, approved by the Commissioner. Such plan shall include, but not necessarily be limited to:
- i. drawings and cross sections that delineate the area of the dam, detention basin, outlet structure and the emergency spillway,
 - ii. provision for installation of curbing on Warren Avenue to prevent stormwater flows from flowing into adjacent properties,
 - iii. provision for the installation of a new drainage system and other improvements to the detention basin and
 - iv. for dam modification recommended, such plan must provide for: (a) one foot freeboard for the 100-year return frequency storm event for the dam, (b) design of the dam's emergency spillway to flow no more frequently than the occurrence of the 25-year return frequency storm event and (c) the

sum of all peak releases to downstream areas equal or less than the pre-subdivision/development's peak runoff rates for the 2-, 10-, 25- and 100-year return frequency storm events.

- h. Submit Contract Plans and Specifications. Unless another deadline is specified in writing by the Commissioner, on or before 60 days after the date of the Commissioner's approval of the plan specified in subparagraph B.1.g., Respondents shall submit for the Commissioner's review and written approval detailed contract drawings and specifications for the actions approved in said plan to place the dam in a safe condition and appropriately discharge stormwater from the subdivision without creating flooding problems including a schedule for performing such actions, with said drawings and specifications signed and sealed by the Engineer in accordance with Section 20-300-10 of the RCSA ("the contract plan"). The contract plan shall be consistent with the recommendations found in the report of investigation, or any revised report of investigation, as approved by the Commissioner.
- i. Perform Actions to Place the Dam in a Safe Condition. Respondents shall perform the actions specified in the approved contract plan in accordance with the approved schedule(s), and, within 15 days of completing such actions, shall notify the Commissioner in writing that the actions have been completed as approved. Respondents shall not modify the approved actions without the prior written approval of the Commissioner.
- j. Submit As-Built Construction Drawings, Certification, Operations and Maintenance Manual. On or before 30 days after completing the actions specified in subparagraph B.1.i., Respondents shall submit to the Commissioner for his review and written approval:
 - i. two copies of as-built construction drawings of the dam and detention basin and any other authorized structural improvement, each signed and sealed by the Engineer in accordance with section 20-300-10 of the RCSA;
 - ii. a certification signed and sealed by the Engineer in accordance with section 20-300-10 of the RCSA that the actions required under this Order to place the dam in a safe condition have been completed as approved;
 - iii. an Operation and Maintenance Manual that specifies all routine maintenance activities to be undertaken at the dam, identifies measures for monitoring those dam features which are essential to the dam's integrity, and prescribes a schedule for undertaking such activities and monitoring.

- iv. a revised Emergency Operations Plan prepared in accordance with Attachment A of this Order which plan takes into account the conditions and features of the dam following completion of the actions specified in paragraph B.1.i.

Upon the Commissioner's written approval of the Operation and Maintenance Manual and revised Emergency Operations Plan required in this paragraph B.1.j., Respondents shall implement said manual and plan and maintain them in effect thereafter.

2. Progress reports. Within 90 days following issuance of this Order and continuing until Commissioner's written approval of any as-built drawing submitted under paragraph B.1.j. of this Order, Respondents shall submit quarterly progress reports to the Commissioner describing the actions which Respondents took, during the quarter preceding any such report, to comply with this Order. Such quarterly report for any applicable quarter shall be due for submission within 15 days after any of the following scheduled quarterly dates: January 1, April 1, July 1 and October 1, of each applicable year.
3. Full compliance. Respondents shall not be considered in full compliance with this Order until all actions required by this Order have been completed as approved and to the satisfaction of the Commissioner.
4. Approvals. Respondents shall use best efforts to submit to the Commissioner all documents required by this Order in a complete and approvable form. If the Commissioner notifies Respondents that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and Respondents shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within 30 days after the Commissioner's notice of deficiencies. In approving any document or other action under this Order, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this Order. Nothing in this paragraph shall excuse noncompliance or delay.
5. Definitions. As used in this Order, "Commissioner" means the Commissioner or his agent.
6. Dates. The date of submission to the Commissioner of any document required by this Order shall be the date such document is received by the Commissioner. The

date of any notice by the Commissioner under this Order, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date 3 days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this Order, the word "day" as used in this Order means one calendar day. Any document or action which is required by this Order to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed by the next day which is not a Saturday, Sunday or Connecticut or federal holiday.

7. Notification of noncompliance. In the event that either Respondent becomes aware that it did not or may not comply, or did not or may not comply on time with any requirement of this Order or any document required hereunder, Respondents shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, Respondents shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and Respondents shall comply with any dates which may be approved in writing by the Commissioner. Notification by Respondents shall not excuse noncompliance or delay, and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically stated by the Commissioner in writing.
8. Certification of documents. Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this Order shall be signed by Respondents, and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

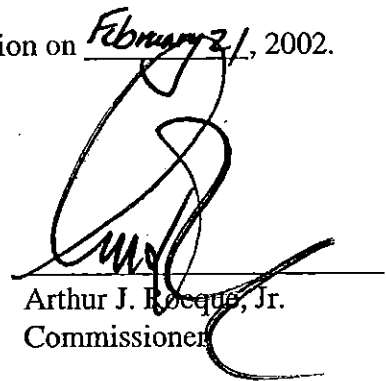
"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief and I understand that a false statement made in this document or its attachments is punishable as a criminal offense under Conn. Gen. Stat. § 53a-157b."
9. Noncompliance. Failure to comply with this Order may subject Respondents to an injunction and penalties under Conn. Gen. Stat. Chapters 439 and 446j.

10. False statements. Any false statement in any information submitted pursuant to this Order is punishable as a criminal offense under section 53a-157b of the Connecticut General Statutes and any other applicable law.
11. Notice of transfer; liability of Respondents' and others. Until Respondents have fully complied with this Order, either Respondent shall notify the Commissioner, in writing no later than 10 days after transferring ownership of the dam, or obtaining a new mailing or location address. Respondents' obligations under this Order shall not be affected by the passage of title to any property, to any other person or municipality. Any future owner of the dam maybe subject to the issuance of an Order from the Commissioner.
12. Commissioner's powers. Nothing in this Order shall affect the Commissioner's authority to institute any proceeding to prevent or abate violations of law, or to recover penalties for violations of law, including but not limited to violations of any permit issued by the Commissioner, or to place a dam in a safe condition and recover costs thereof. If at any time the Commissioner determines that actions taken by Respondents pursuant to this Order have not successfully placed the dam in a safe condition, the Commissioner may institute any proceeding to require Respondents to place the dam in a safe condition.
13. Respondents' obligation under law. Nothing in this Order shall relieve Respondents of other obligations under applicable federal, state and local law.
14. No assurance by Commissioner. No provision of this Order and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by Respondents pursuant to this Order will result in compliance with applicable laws.
15. Notice to Commissioner of changes. Within 15 days of the date that either Respondent becomes aware of a change in any information submitted to the Commissioner under this Order, or that any such information was inaccurate or misleading or that any relevant information was omitted, Respondents shall submit the correct or omitted information to the Commissioner.

16. Submission of documents. Any document required to be submitted to the Commissioner under this Order shall, unless otherwise specified in writing by the Commissioner, be directed to:

Ugochukwu Uzoh, Environmental Analyst
DEP Inland Water Resources Division
79 Elm Street
Hartford, CT 06106
(860) 424 - 3713

Issued as an order of the Commissioner of Environmental Protection on February 21, 2002.



Arthur J. Rocque, Jr.
Commissioner

Attachment A: Guidelines for the Preparation of Dam Emergency Operation Plans.

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

Order DSO-2002-1009V Attachment A

**GUIDELINES FOR THE
PREPARATION OF
DAM EMERGENCY OPERATIONS PLANS**

**STATE OF CONNECTICUT
DEP/BUREAU OF WATER MANAGEMENT
INLAND WATER RESOURCES DIVISION**

Rev. 9/94

DAM EMERGENCY OPERATIONS PLAN GUIDELINES

Dam owners have historically been held liable for downstream damages incurred as a result of the failure of their dams. Consequently, dam owners are then responsible for the formulation of an Emergency Operation Plan (EOP) and the implementation of it. The principal purpose of the Emergency Operation Plan is the reduction of the potential hazard posed by a dam failure to downstream residents and property.

The following guidelines are intended to serve only as a general format for effective EOP formulation, not as an absolute standard. Each dam site must have an EOP which is tailored to reflect its own particular features and conditions. In order for the Emergency Operations Plan to be effective, it must contain the following three essential elements:

1. The determination of the area downstream of a dam which would be inundated by a dam breach and a map clearly delineating this area.
2. An established procedure for monitoring the dam during periods of heavy rainfall and runoff with specific personnel assignments and features of the dam to be inspected at given intervals.
3. A formalized warning notification system to alert appropriate local officials who are responsible for the warning and/or evacuation of residents in the area downstream of the dam which may be inundated by its failure.

A more detailed description of these three components now follows.

Dam Breach Impact Area

The area downstream of a dam which may be inundated by a breach is determined by an engineering study which evaluates such factors as the type of dam, probable mode of failure, water surface elevation at breach, downstream topography, stream channel capacity, existence of flood control projects further downstream, and other site specific considerations.

There are at least three engineering methodologies which have been developed for analyzing a dam breach and the resulting flooding to be expected downstream. The important assumptions to be made with all analyses is that the impoundment water surface elevation is at the top of dam with full spillway discharge occurring, and that the dam breach flood is superimposed on pre-existing flood flow within the downstream channel reaches. In this manner, the area inundated conservatively represents that flooding to be expected from a dam breach under most flow conditions.

Estimated flood levels are then plotted on topographic maps to determine the area inundated, and compared with any available flood studies. A list of streets and roads subject to flooding must also be included with the map.

Dam Surveillance

Emergency operation monitoring by a dam owner (or his designee) should commence when a "Flood Watch" alert is issued by the National Weather Service for a particular geographic area, or when heavy runoff conditions are experienced at the dam site. The inspection steps outlined herein should be undertaken at once and at three hour intervals thereafter, unless the "Flood Watch" is upgraded to a "Flood Warning" at which time the dam should be inspected hourly.

The observations to be made include (but are not necessarily limited to):

1. The rainfall at and water level of the impoundment should be measured and recorded.
2. The crest of the dam should be walked to determine if any cracking, settlement, movement or sloughing of the embankments has occurred.
3. The toe of the dam embankment and the abutment contacts should be inspected and all areas of seepage, soft spots, and boils noted. Boils are areas of concentrated seepage under pressure which have the ability to remove or "float" away the soil material through which it flows. (This process of soil removal is also referred to as piping). Their location should be recorded, as well as an estimate of the quantity of the seepage flow, and clarity of the water flowing from any seep. Muddy water flowing from a seep indicates that piping (the internal erosion of soil particles within an embankment) is occurring.
4. All spillway and outlet structures should be checked for accumulation of debris which should be removed as necessary.

It must be emphasized that the above emergency operation observations must be performed and a written record of same maintained. In addition, steps must be taken to provide adequate lighting to allow viewing of the dam at night.

An inventory and location of any available equipment, materials and manpower which could be utilized by the dam owner to clear debris blocking the spillway, repair surface erosion of an embankment, place sandbags, etc., should be provided. Personnel responsible for implementing these emergency repairs should also be listed.

Downstream Warning Notification

Early Warning

If during the inspection any of the following conditions are observed, the inspector shall notify the appropriate local emergency management and executive officials, as well as the DEP Flood Emergency Operations Center in Hartford, for an early warning declaration:

1. A marked increase in seepage through an embankment, particularly if evidence of boiling (seepage under pressure which tends to "float" away the material through which it flows) is observed.
2. An increase in the rate of rise of the impoundment such that the dam would be overtopped within three hours.

An early warning is intended to inform local authorities that conditions at the dam site exist which may require the evacuation of downstream residents within several hours to avoid loss of life in the event of a failure. Local authorities have the responsibility of alerting the threatened dwellings' occupants within the impact area (as specified by the flood inundation map), of the possibility that evacuation may become necessary. Furthermore, should evacuation of downstream residents become necessary only local officials, i.e., chief administrative official, local police, or emergency management official, have the authority to order an evacuation. It must be stressed that the early warning notice and/or actual evacuation of downstream residents should be performed according to a pre-arranged plan prepared by local authorities.

Local officials may utilize the Emergency Broadcast System to disseminate warnings regarding impending dam failures over the various electronic media available. The dam owner, however, does not have the authority to initiate any such broadcast.

Final Warning (Evacuation Notice)

A final warning should be initiated when in the judgement of the inspector a dam failure is likely and evacuation of the downstream area is necessary. Conditions which indicate failure is imminent include:

1. A dramatic increase in seepage flow (or a pre-existing boil), particularly if piping is occurring.
2. Cracking, settlement, or movement of masonry or concrete spillways, training walls, or other structures.
3. A water level within one foot of the top of dam and rising at a rate which would overtop the dam within one half hour.
4. Substantial erosion or sloughing of dam embankments.
5. Any other condition which may result in rapid (30 minutes or less) failure of the dam.

When issuing either an early or final warning notice, the dam owner/operator should only be responsible for one call to the local warning point (i.e., an office manned on a 24 hour basis or an appropriate dispatch center, local emergency management office, or police department, for example). Local officials bear the responsibility for fanning the warning out to other local and state agencies. The dam owner must consult the town on the selection of an appropriate warning point. If more than one town is potentially affected the other town(s) must be consulted on this point also. It is up to the town, not the dam owner, to determine how and where the warning message should be conveyed.

The following is a list of those officials and agencies which should be notified for warning and/or evacuation notices:

Town/City Chief Executive

Local Police Department

Local Emergency Management Director

State Office of Emergency Management (24 hour coverage) 566-3180

State Police (appropriate barracks)

DEP/Inland Water Resources Division's Flood Emergency Operations Center at 424-3706. (Note: DEP Communications Center at 566-3333 should be contacted in the event that the DEP Flood Emergency Center has not been activated after normal business hours).

During flood emergency surveillance of a dam site, provisions should be made for communications between the dam inspection personnel and above listed officials, which does not solely rely on telephone service, since it is very prone to flood-related disruption. Should an early warning or final warning/evacuation notice be issued, an all clear notice shall be issued after the flood emergency at the dam site has abated, so residents may return to their dwellings.

To summarize, an adequate Emergency Operation Plan must have a pre-determined flood inundation map, a schedule of personnel assigned to monitor the dam and to implement emergency repairs as needed, and a workable warning/notification system for alerting local authorities in communities downstream of the dam.

Furthermore, the local officials who are responsible for the actual warning or evacuation of residents, must have a pre-arranged plan for accomplishing same. Local and area emergency management personnel should be consulted to assist in the formation of these plans for this reason, since they have expertise in emergency preparedness planning.

Lastly, the EOP should be reviewed at least annually to update personnel assignments, any change in local elected officials, phone numbers, etc. In addition, any activity downstream of the dam which has occurred that may have changed the dam's hazard classification should be noted, i.e. construction (or removal) of dwellings, highways, bridges, flood control projects, industrial development, etc.