

STATE OF RHODE ISLAND

2013

Annual Report to the Governor
on the Activities of the

DAM SAFETY PROGRAM



Reconstructed spillway & low level outlet at Metcalf Dam (No. 527) in Exeter

Department of Environmental Management

Prepared by the Office of Compliance and Inspection

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STATUTORY AND REGULATORY AUTHORITY OF RHODE ISLAND'S DAM SAFETY PROGRAM

The Rhode Island dam inspection and inventory program had its inception in 1883, and was under the authority and responsibility of the Commissioner of Dams and Reservoirs. At that time, there were 86 dams included in the records; today, there are 668 inventoried dams.

A complete list of the inventoried dams, sorted by town and river, is attached.

STATUTES

As set forth in Rhode Island General Laws, Chapters 46-18 and 46-19, a dam owner has the responsibility for the safe operation of his/her dam, and is liable for the consequences of accidents or failures of the dam. In general, a dam owner is required to use "*reasonable care*" in the operation and maintenance of a dam. This responsibility includes the proper operation, maintenance, repair and rehabilitation of a dam, which are essential elements in preventing a dam failure.

The criteria governing the administration and enforcement of Rhode Island's Dam Safety Program are contained in the General Laws of Rhode Island, Chapter 46-19. The Department of Environmental Management (DEM) has the responsibility to cause to be inspected dams to determine their condition, to review and approve plans for construction or substantial alteration of a dam, to order the owner to make repairs or to take other necessary action to make a dam safe.

In 2001, Section 46-12.2-2 was amended, authorizing the Clean Water Finance Agency to issue loans for projects associated with dam safety.

In 2005, Chapter 45-62 (Dam Management Districts) was added, authorizing municipalities to create dam management districts for dam repairs, maintenance, management and/or removal.

In 2006 two amendments to Chapter 46-19 were enacted. Section 4 was amended to authorize DEM, in an emergency, to take necessary actions to mitigate an unsafe condition at a dam and to assess the costs of those actions against the dam owner. Section 9 was amended to require a city or town where a high or significant hazard dam is located, and to require a state agency that owns a high or significant hazard dam, to complete by July 1, 2008, an Emergency Action Plan (EAP) for the dam. Rhode Island's Emergency Management Agency is responsible for coordinating development of the EAPs and must give final approval for the EAP to be considered complete.

In 2012, Section 46-19-4 was amended by adding subsection (c). This change authorizes DEM to record an enforcement action for an unsafe dam in the land evidence records of the city or town in which the dam is located. Upon satisfactory completion of the requirements of the enforcement action, DEM is also authorized to record such written notice in the land evidence records.

FEDERAL ENERGY REGULATORY COMMISSION (FERC) AUTHORITY

In 2011, DEM became aware that for any dam in the state that has a Federal Energy Regulatory Commission (FERC) Permit or Exemption, DEM does not have any dam safety regulatory authority. In 2013, the following 10 dams were under FERC Authority:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Central Falls / Cumberland	063	Valley Falls Pond	Low
Central Falls / Pawtucket	064	Central Falls	Low
Hopkinton	254	Potter Hill	Low
North Smithfield	043	Slatersville Reservoir Upper	High
North Smithfield	045	Slatersville Upper Intermediate	Low
North Smithfield	393	Blackstone	Low
Pawtucket	066	Pawtucket Lower	Low
West Warwick	147	Riverpoint Pond Upper	High
West Warwick	148	Arctic	High
Woonsocket	056	Woonsocket Falls	Significant

DEM REGULATIONS

On December 20, 2007 DEM's *Rules and Regulations for Dam Safety* (Dam Safety Regulations) went into effect. The regulations, which are available on DEM's website at <http://www.dem.ri.gov/pubs/regs/regs/compinsp/dams07.pdf>, include the following:

- Definitions of important terms including dam, hazard classifications, maintenance, repair and unsafe dam;
- Assignment of a hazard classification to each dam in the state inventory;
- Requirement that owners register their dams and notify DEM when ownership is transferred (no associated fee);
- A schedule for visual inspections of high and significant hazard dams;
- Procedure to streamline repair of high and significant hazard dams (no associated permit fee); and
- A procedure for dam owners to take emergency actions at high and significant hazard dams.

In June 2007, DEM's *Rules and Regulations for Governing the Administration and Enforcement of the Freshwater Wetlands Act* were amended to allow high hazard and significant hazard dam repair requests to be approved under the Dam Safety Regulations. The Dam Safety Program coordinates such requests with the Freshwater Wetlands Program.

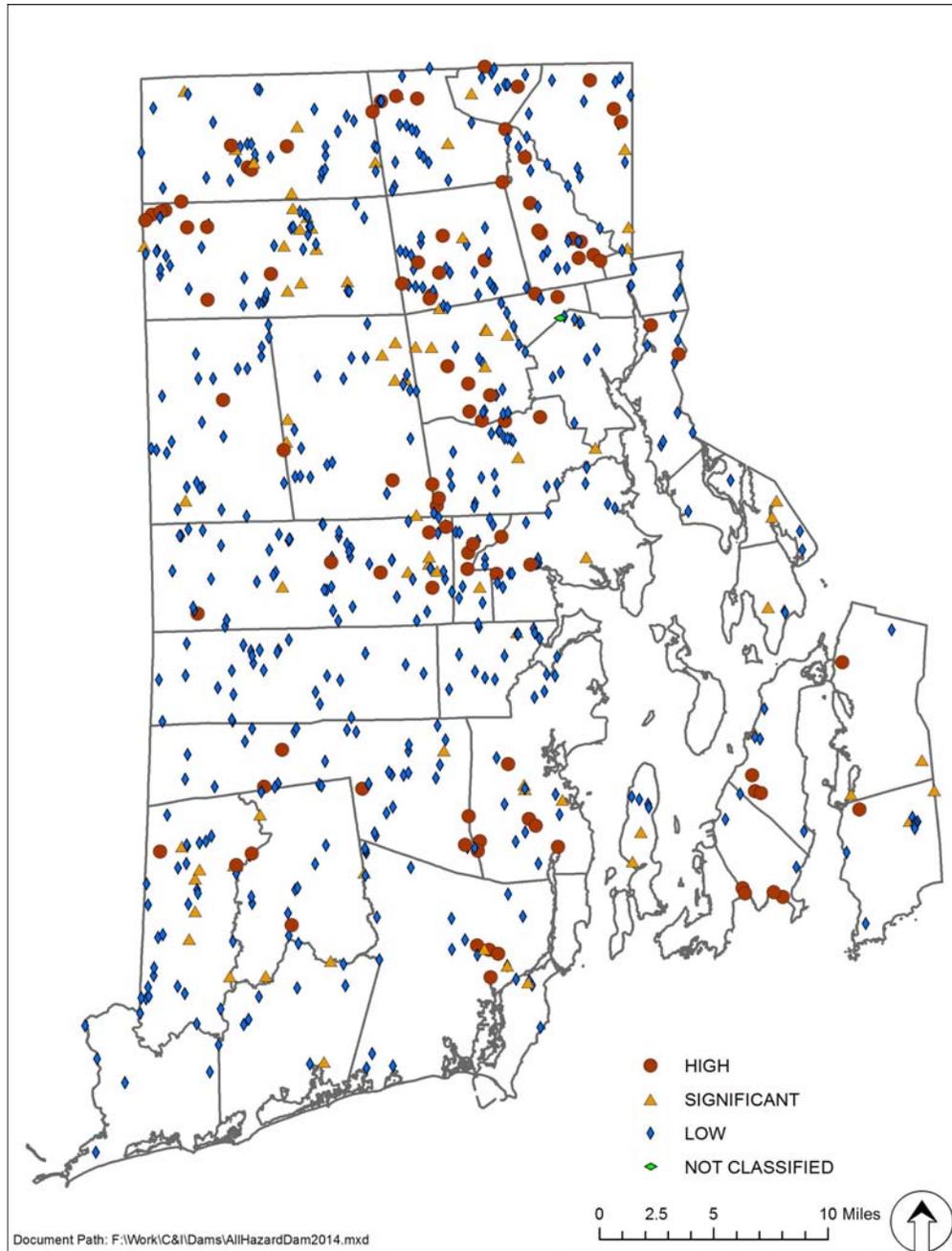
HAZARD CLASSIFICATIONS

Inventoried dams are classified by size and hazard ratings. The size classification provides a relative description of small, medium or large, based on the storage capacity and height of the impounded water. The hazard classification relates to the probable consequences of failure or misoperation of the dam; it does not relate to the current condition or the likelihood of failure of the dam. The hazard classifications are defined in the Dam Safety Regulations, as follows:

High Hazard – means a dam where failure or misoperation will result in a probable loss of human life.

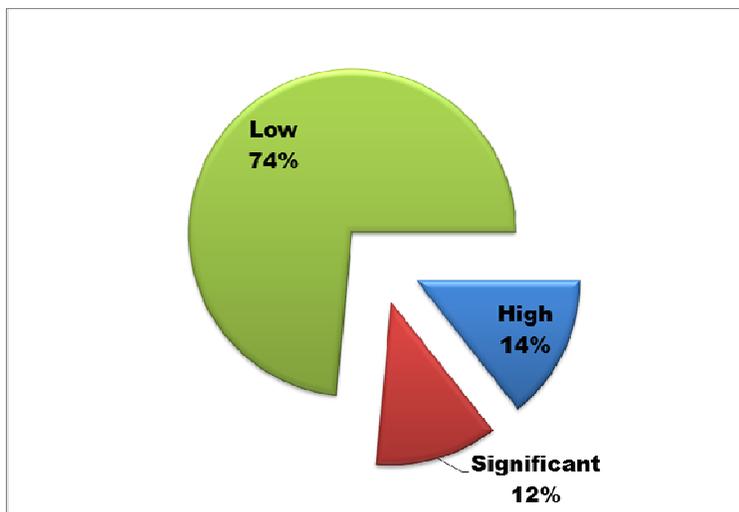
Significant Hazard – means a dam where failure or misoperation results in no probable loss of human life but can cause major economic loss, disruption of lifeline facilities or impact other concerns detrimental to the public’s health, safety or welfare. Examples of major economic loss include washout of a state or federal highway, washout of two or more municipal roads, loss of vehicular access to residences, (e.g. a dead end road whereby emergency personnel could no longer access residences beyond the washout area) or damage to a few structures.

Low Hazard – means a dam where failure or misoperation results in no probable loss of human life and low economic losses.



Dams / Hazard Classifications

In 2013, there were 96 high hazard dams, 81 significant hazard dams and 491 low hazard dams, for a total inventory of 668 dams. The following chart illustrates the percentage of dams in each hazard classification:



Although the 2012 Annual Report indicated the same number of total dams, high hazard dams and significant hazard dams, it listed 490 low hazard dams and 1 dam not classified. The difference is due to the dam indicated below, that was added to the inventory in 2012 and classified as a low hazard dam in 2013.

TOWN	DAM NO.	DAM NAME	2012 STATUS	2013 STATUS
West Greenwich	768	Unnamed	Added To Inventory/Hazard Not Determined	Classified as Low Hazard

INSPECTION PROGRAM

In accordance with the Dam Safety Regulations, a dam’s hazard classification determines the inspection frequency. Visual inspections of high hazard dams are required every two years (48 each year) and visual inspections of significant hazard dams are required every five years (16 each year). Low hazard dams are inspected every five years to determine whether downstream conditions have changed over time that warrant raising the hazard classification to significant or high. A high or significant hazard dam is also visually inspected upon request by any person who has cause to believe that an unsafe dam exists. In addition, a visual inspection will be performed whenever DEM has cause to believe that an unsafe dam exists, to determine if the dam is unsafe.

The visual inspections performed are conducted under a general inspection format based on guidelines established in 1976 by the United States Army Corps of Engineers for the National Program for the Inspection of (Non-Federal) Dams. A visual inspection may be performed by DEM or by an engineer hired by the dam owner.

As part of each visual inspection, the condition of the major components of the dam are subjectively rated as *good*, *fair* or *poor*. The major components of a dam are the embankment, the spillway and the low level outlet. *Good* is defined as meeting minimum guidelines, where no irregularities are observed and the component appears to be maintained properly. *Fair* is defined as a component that requires maintenance. *Poor* is defined as a component that has deteriorated beyond a maintenance issue and requires repair; the component no longer functions as it was originally intended.

A detailed investigation may be required if a visual inspection leads to a determination that a dam is or may be unsafe. A detailed investigation may include studies, investigations and analyses appropriate to evaluate the structural safety and hydraulic capacity of a dam or reservoir and appurtenant works, such as soil analysis, concrete or earth stability analysis, materials testing, foundation explorations, hydraulic and hydrologic analysis, including basin studies, flood potential, and an analysis of the dam's ability to pass flood waters.

Following a visual inspection performed by DEM, a dam inspection report is prepared, identifying specific deficiencies and, when warranted, recommending corrective measures. A copy of the report is forwarded to the owner, with the expectation that the deficiencies will be corrected. If a dam is determined to be unsafe, then DEM will order corrective action.

ACTIVITIES IN 2013

UNSAFE DAMS

One of DEM's primary responsibilities in the Dam Safety Program is to identify unsafe dams and take appropriate action to return the dams to a safe condition. An unsafe dam is a high or significant hazard dam whose condition is such that an unreasonable risk of failure exists.

Following a visual or detailed inspection of a dam, the owner is notified of any condition that DEM considers to be unsafe. Notification is in the form of a Notice of Violation and Order (NOV), which sets forth the unsafe condition/s and requires the owner to make the dam safe.

During 2013, DEM addressed 47 unsafe dams. At the end of 2013, ten of these dams were removed from the list. The list of unsafe dams, including the 10 dams no longer identified as unsafe (shaded in grey) is shown below:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET	OWNER
Burrillville	027	Sucker	Significant	Fair To Poor	Fair To Poor	Poor	Bliss Golf Investors LLC
Burrillville	565	Ross	Significant	Fair To Poor	Poor	Poor	George E. Binns Living Trust & Nancy F. Binns, Trustee
Coventry	186	Upper	Significant	Poor	Fair	Not Applicable	Town of Coventry
Coventry	187	Middle	Significant	Poor	Poor	Poor	Michael E. & Roberta Soucy (1)
Coventry	371	Pearce	High	Fair To Poor	Fair To Poor	Poor	Nine Howard Development, LLC

TOWN	DAM NO.	DAM NAME	HAZARD CLASS	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET	OWNER
Coventry	498	Hopkins Farm	Significant	Good To Fair	Fair To Poor	Not Inspected	Jeremy Votolato, d/b/a/ Island Green Golf, LLC
Cranston	166	Curran Upper	High	Poor	Poor	Poor	DEM
Cranston	198	Curran Lower	High	Poor	Poor	Poor	DEM
Cranston	373	Clarke's Upper	High	Poor	Poor	Poor	Lois Labrie
Cumberland	077	Diamond Hill	High	Good To Poor	Good To Fair	Good	Pawtucket Water Supply Board
Cumberland	078	Pawtucket	High	Fair To Poor	Fair	Fair	Pawtucket Water Supply Board
Exeter	239	Slocum	High	Good To Poor	Good To Fair	Poor	American Baptist Churches Of R.I.
Exeter	527	Metcalf Wildlife	High	Fair To Poor	Fair	Poor	Scobco Associates
Glocester	514	Lake Aldersgate	Significant	Fair To Poor	Fair	Fair	New England Conference Of The United Methodist Church d/b/a Camp Aldersgate
Glocester	727	Bowdish Lower	High	Fair To Poor	Poor	Unknown	Lynda J. Schmidt
Hopkinton	225	Wincheck	Significant	Fair To Poor	Fair To Poor	Poor	Rhode Island Boy Scouts
Hopkinton	226	Yawgoog	High	Fair To Poor	Good	Poor	Rhode Island Boy Scouts
Hopkinton	274	Harris	Significant	Fair To Poor	Fair	Not Present	Edward Carapezza
Hopkinton	285	Langworthy	Significant	Fair To Poor	Good	Not Present	Richard A. Mann
Hopkinton	440	Hoxie Farm	Significant	Poor	Fair	Not Applicable	RI Department of Transportation
Hopkinton / Richmond	216	Wyoming Upper	High	Fair To Poor	Fair To Poor	Poor	DEM
Jamestown	575	Jamestown Lower	Significant	Good To Poor	Fair	Unknown	Town of Jamestown
Johnston	168	Oak Swamp	High	Fair To Poor	Fair To Poor	Poor	Town of Johnston
Johnston	169	Almy	High	Poor	Poor	Poor	Town of Johnston
Johnston	170	Simmons Upper	High	Poor	Poor	Poor	Town of Johnston
Johnston	171	Simmons Lower	High	Poor	Poor	Poor	Town of Johnston
Johnston	313	Hughesdale Upper	High	Fair To Poor	Fair To Poor	Poor	Fontaine, Jeannette Y., of the Fontaine Living Trust
Lincoln	097	Butterfly	High	Fair To Poor	Fair To Poor	Poor	Town of Lincoln
Lincoln	104	Bleachery	High	Fair	Fair	Poor	Providence Casket Co.
Lincoln	391	Handy Upper	High	Poor	Fair	Not Applicable	Town of Lincoln
Lincoln	408	Bridlewood	High	Fair	Fair	Not Present	Lucy V Delisi, Per, Res, Tr

TOWN	DAM NO.	DAM NAME	HAZARD CLASS	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET	OWNER
Lincoln	649	Bridlewood Upper End	High	Poor	Not Applicable	Not Applicable	Richard J. Conti, Rabinder & Rita Kurl, Syed K. & Sehark K. Raza
North Kingstown	553	Belleville	Significant	Fair To Poor	Fair To Poor	Not Applicable	Town of North Kingstown
North Kingstown	615	Rodman mill	High	Poor	Fair	Poor	Lafayette Mill Complex Associates
North Kingstown	710	Slocum Road Upper	High	Poor	Fair To Poor	Unknown	Maurice N. Klein & Kimberly Perry
North Providence	084	Wenscott	High	Fair	Fair	Poor	Town of North Providence
North Smithfield	046	Slatersville Middle	High	Fair	Fair	Poor	Dudley Development Corp.
North Smithfield	067	Todd's	Significant	Poor	Fair To Poor	Poor	Paul R & Karen A Hazard
Portsmouth	761	Melville #1	Significant	Poor	Fair To Poor	Poor	Town of Portsmouth
Providence	093	Canada Upper	Significant	Fair To Poor	Fair To Poor	Poor	City of Providence
Smithfield	109	Stillwater	Significant	Poor	Fair	Poor	Breakwater Preservation Conservancy
Smithfield	120	Sprague Upper	High	Fair	Fair	Not Applicable	YMCA Of Greater Providence
Smithfield	121	Sprague Lower	High	Poor	Fair To Poor	Poor	Charles E. & Pauline Bates, Lake Wionkhiege Improvement Association
Smithfield	123	Hawkins	Significant	Fair To Poor	Good	Poor	Louis Lafazia
Smithfield	126	Georgiaville	High	Poor	Good To Poor	Unknown	Town of Smithfield/ Deborah A. Bliss
South Kingstown	425	Wakefield	High	Fair To Poor	Fair	Poor	Town of South Kingstown
Tiverton	742	Creamer	High	Fair To Poor	Good	Not Applicable	Manuel Laureanno & Laureanno Development Corp. Daniel T. Church Estate Homeowners' Association

(1) Incorrectly listed as Joan F. & Hubert G. Degregory in the 2012 Annual Dam Safety Report

A summary of each dam follows:

Dam number 027 (Sucker) in Burrillville

DEM's engineering consultant inspected the dam in May 2010 and forwarded the report to DEM in September 2010. The report indicated that excessive vegetation and deadfall prohibited a complete inspection of the dam, plywood was partially blocking the primary spillway, a former low level outlet was no longer present and the current auxiliary spillway conveys flow through a pipe. DEM issued an NOV to the owner (Bliss Golf Investors, LLC) in May 2011 to address these unsafe conditions. In 2012 the owner cleared the vegetation and deadfall, removed the plywood and hired an engineer to inspect the dam and complete a report, which was submitted to DEM. The low level outlet and spillway issues have not been addressed. Since the owner did not request a hearing on the NOV, the case has been forwarded to the DEM's Office of Legal Services for action in Superior Court.

Dam number 565 (Ross) in Coventry

DEM's engineering consultant inspected the dam in November 2011 and forwarded the report to DEM in August 2012. The report indicated excessive vegetation prohibited a proper inspection and the low level outlet was inoperable. An NOV was issued to the owner (George E. Binns Living Trust & Nancy F. Binns, Trustee) in November 2013 to address the unsafe conditions. The owner requested a hearing on the NOV and met with DEM in December 2013 to discuss settlement.

Dam number 186 (Upper) in Coventry

DEM's engineering consultant inspected the dam in November 2011 and forwarded the report to DEM in April 2012. The report indicated that water from the spillway was discharging into a poorly defined downstream channel which flowed along the downstream side of the dam at the base of the wall; seepage with apparent sediment transport was present; and a section of the embankment crest was about two feet lower than the crest along the rest of the dam. An NOV was issued to the owner (Town of Coventry) in April 2013 to address these unsafe conditions. The Town requested a hearing on the NOV and met with DEM in May 2013 to discuss settlement. The Town also negotiated with DEM and entered a Consent Agreement in December 2013 to resolve the NOV. The Consent Agreement includes a plan and schedule to return the dam to a safe condition.

Dam number 187 (Middle) in Coventry

DEM's engineering consultant inspected the dam in May 2010 and forwarded the report to DEM in September 2010. The report indicated that excessive vegetation prohibited a complete inspection, a section of the embankment was sloughed and failed, and the primary and auxiliary spillways were improperly maintained. An NOV was issued to the owners (Michael E. & Roberta Soucy) in July 2012 to address these unsafe conditions. The owners requested a hearing on the NOV and met with DEM in September 2012 to discuss settlement. A proposal to repair the primary spillway was approved by DEM in December 2013.

Dam number 371 (Pearce) in Coventry

DEM's engineering consultant inspected the dam in June 2010 and forwarded the report to DEM in September 2010. The report indicated that excessive vegetation prohibited a proper inspection, vegetation in the spillway may reduce the discharge capacity and the low level outlet was inoperable. An NOV was issued in July 2012 to the owner (Nine Howard Development, LLC) to address these unsafe conditions. A hearing request was not entered and the owner has not contacted DEM. In late 2013, DEM became aware that ownership of the dam was not clear and began further research.

Dam number 498 (Hopkins Farm) in Coventry

The dam was inspected by DEM's engineering consultant in July 2012 and the report was forwarded to DEM in January 2013. The report indicated the spillway crest was raised by the installation of concrete blocks and the emergency spillway was partially filled in. An NOV was issued in September 2013 to the owner (Jeremy Votolato, d/b/a/ Island Green Golf, LLC) for these unsafe conditions. A hearing was not requested on the NOV.

Dam number 166 (Curran Upper) in Cranston

In 2006, DEM (Planning & Development), as the owner of the dam, hired an engineering consultant to perform a complete evaluation of the dam as an initial step to a complete rehabilitation. In 2007, the engineering evaluation was completed. In 2008, an engineering consultant was selected to develop a final design for the rehabilitation project. Development of the final design continued through 2009. A major change in the design was to reconfigure the spillway discharge channel from the existing location along the base of the earthen embankment to a channel that directs flow away from the dam. The design required DEM to acquire additional property adjacent to the dam and in 2010 negotiations began with the adjacent property owner. In March 2010, DEM's Dam Safety Program inspected the dam in accordance with the Dam Safety Regulations promulgated in 2007 (see DEM Regulations on page 4), and determined it was unsafe due to excessive vegetation which prohibited a proper inspection and an inoperable low level outlet. In 2012, an agreement was reached between DEM and the adjacent property owner and the design was finalized. In October 2012, plans of the proposed repair were forwarded to the Dam Safety Program for review and were approved in April 2013. The project went out to bid later in 2013 and construction is expected to begin in early 2014.

Dam number 198 (Curran Lower) in Cranston

In June 2010, DEM's engineering consultant inspected the dam and forwarded the report to DEM in September 2010. The report indicated heavy vegetation which prohibited a proper inspection of the embankment, overgrown vegetation in the spillway discharge channel that may inhibit flow and an inoperable low level outlet. DEM owns the dam and in March 2012, the section which oversees the dam was notified of these unsafe conditions. The unsafe conditions will be addressed following completion of the rehabilitation of the DEM-owned Curran Upper Dam discussed above.

Dam number 373 (Clarke's Upper) in Cranston

DEM's engineering consultant inspected the dam in October 2009 and forwarded the report to DEM in June 2010. The report indicated that leaves and yard debris prevented a complete inspection of the dam and the low level outlet was inoperable. An NOV was issued to the owner (Lois Labrie) in April 2011 to address these unsafe conditions. The owner requested a hearing on the NOV. In 2012, the owner removed the vegetation debris and hired an engineer to inspect the dam and complete a report, which was submitted to DEM. In May 2013, plans to install a new low level outlet were submitted to DEM and in June 2013 the plans were approved. The work was completed, returning the dam to a safe condition, and the NOV was released in December 2013.

Dam number 077 (Diamond Hill) in Cumberland

DEM's engineering consultant inspected the dam in July 2012 and forwarded the report to DEM in January 2013. The report indicated that excessive vegetation prohibited a proper inspection of certain areas of the dam. An NOV was issued to the owner (Pawtucket Water Supply Board) in August 2013 for this unsafe condition. The owner requested a hearing on the NOV and also

met with DEM in September 2013 to discuss settlement. The owner subsequently removed the vegetation and DEM inspected the areas in December 2013. The inspection report will be reviewed for compliance in 2014.

Dam number 078 (Pawtucket) in Cumberland

DEM's engineering consultant inspected the dam in July 2012 and forwarded the report to DEM in January 2013. The report indicated that excessive vegetation prohibited a proper inspection of certain areas of the dam. An NOV was issued to the owner (Pawtucket Water Supply Board) in August 2013 for this unsafe condition. The owner requested a hearing on the NOV and also met with DEM in September 2013 to discuss settlement. The owner subsequently removed the vegetation and DEM inspected the areas in December 2013. The inspection report will be reviewed for compliance in 2014.

Dam number 239 (Slocum) in Exeter

DEM's engineering consultant inspected the dam in June 2010 and forwarded the report to DEM in September 2010. The report stated that heavy vegetation prevented a complete inspection of the dam and the low level outlet was inoperable. An NOV was issued to the owner (American Baptist Churches of Rhode Island) in May 2011 for these unsafe conditions. The owner did not request a hearing on the NOV. A Consent Agreement was entered between DEM and the owner in December 2011, which resolved the NOV and provided a schedule and plan by which the dam would be returned to a safe condition. In November 2012, DEM approved the owner's proposed engineering plan to place the low level outlet into proper operation. Through 2013, the owner encountered problems with lowering the pond to complete the work. It is expected the work will be completed in 2014.

Dam number 527 (Metcalf) in Exeter

The dam was inspected by DEM's engineering consultant in June 2010 and the report was forwarded to DEM in September 2010. The report indicated that excessive vegetation prohibited a complete inspection of the dam and the low level outlet was inoperable. An NOV was issued to the owners (SCOBOCO Associates and Pauline C. Metcalf) to address these unsafe conditions. The owners requested a hearing on the NOV. The owners also negotiated with DEM and entered a Consent Agreement in October 2011 to resolve the NOV. The Consent Agreement included a plan and schedule to return the dam to a safe condition. In 2012 the owners continued to work toward compliance with the Consent Agreement. In January 2013, the owners submitted an inspection report to confirm that the vegetation was removed from the dam and those areas were inspected. In June 2013, a proposed plan to repair the low level outlet and spillway was submitted to DEM and the plan was approved in July 2013. Work on the dam was completed in October 2013, returning the dam to a safe condition and allowing the Consent Agreement to be closed.

Dam number 514 (Lake Aldersgate) in Gloucester

The dam was inspected by DEM's engineering consultant in November 2011 and the report was forwarded to DEM in April 2012. The report indicated excessive vegetation that inhibited a thorough inspection and evidence of recent excavation into the dam that was did not receive a permit. DEM issued an NOV to the owner (New England Conference Of The United Methodist Church d/b/a Camp Aldersgate) in June 2013 to address these unsafe conditions. The owner requested a hearing on the NOV and has also made progress in addressing the unsafe issues at the dam.

Dam number 727 (Bowdish Lower) in Gloucester

DEM's engineering consultant inspected the dam in October 2009 and forwarded the report to DEM in June 2010. The report indicated excessive vegetation that inhibited a proper inspection, debris obstructing spillway flow and unknown operability of the low level outlet. DEM issued an NOV in April 2012 to the owner (Lynda J. Schmidt) to address these unsafe conditions. The owner requested a hearing on the NOV. No progress has been made toward resolving the NOV.

Dam number 225 (Wincheck) in Hopkinton

DEM's engineering consultant inspected the dam in May 2010 and forwarded the report to DEM in September 2010. The report indicated excessive vegetation and debris that prevented a complete inspection of the dam, possible sediment transport through the dam, an inoperable low level outlet and the presence of sand bags to prevent overtopping of the dam. DEM issued an NOV to the owner (Rhode Island Boy Scouts) in June 2011 for these unsafe conditions. Although the owner requested a hearing on the NOV, they also continued to address the unsafe conditions at the dam. In May 2012 the owner's engineer submitted a report of an inspection that was completed after the vegetation was cleared. The report also included an assessment of the sediment transport. In June 2012, DEM approved the owner's engineering plans to repair the embankment and low level outlet and the work was completed in November 2012. Final paperwork for the project was received in April 2013, at which time the NOV was released.

Dam number 226 (Yawgoog) in Hopkinton

The dam was inspected by DEM's engineering consultant in November 2011 and the report was forwarded to DEM in April 2012. The report stated that excessive vegetation prohibited a proper inspection and the low level outlet was inoperable. DEM issued an NOV to the owner (Rhode Island Boy Scouts) in April 2013 for these unsafe conditions. The owner requested a hearing on the NOV and also appears to be working toward correcting the safety issues at the dam.

Dam number 274 (Harris) in Hopkinton

DEM inspected the dam in November 2010 and determined the dam was unsafe due to excessive vegetation that prohibited a proper inspection. An NOV was issued to the owner (Edward Carapezza) in May 2012 for the unsafe conditions. The owner did not request a hearing on the NOV but did work to remove the vegetation. DEM re-inspected the dam in March 2013 and did not find any unsafe conditions at the dam. Although the NOV remains open because the owner has not completed the proper paperwork, the dam has been returned to a safe condition.

Dam number 285 (Langworthy) in Hopkinton

DEM's engineering consultant inspected the dam in November 2011 and forwarded the report to DEM in May 2012. The report indicated that excessive vegetation prohibited a complete inspection and an NOV was issued to the owner (Richard A. Mann) for this unsafe condition in December 2012. The owner did not request a hearing on the NOV and removed the vegetation. DEM re-inspected the area in November 2013 and did not observe any unsafe conditions and the NOV was closed in December 2013.

Dam number 440 (Hoxie Farm) in Hopkinton

In October 2010, DEM inspected the dam, which could not be properly inspected due to the presence of excessive vegetation. An NOV was issued to the owner (RI Department of Transportation (DOT)) for this unsafe condition in December 2013.

Dam number 216 (Wyoming Upper) in Hopkinton/Richmond

DEM's engineering consultant inspected the dam in November 2011 and forwarded the report to DEM in April 2012. The report indicated missing soil in the center embankment, sinkholes and displaced soil on the right embankment and sediment at the toe of the downstream wall, possible leakage at the right end of the spillway and an inoperable low level outlet. DEM owns the dam and in July 2013, the section which oversees the dam was notified of these unsafe conditions.

Dam number 575 (Jamestown Lower) in Jamestown

DEM's engineering consultant inspected the dam in July 2012 and forwarded the report to DEM in January 2013. The report indicated excessive vegetation that prohibited a proper inspection and a low level outlet that could not be located. An NOV was issued in November 2013 to the dam owner (Town of Jamestown) for these unsafe conditions. The owner did not request a hearing on the NOV.

Dam number 168 (Oak Swamp) in Johnston

DEM inspected the dam in September 2008. An informal written notice was forwarded to the owner (Town of Johnston) in July 2009, which advised the town that a complete visual inspection of the dam could not be performed due to the presence of excessive vegetation on and adjacent to the dam. The notice required the Town to remove sufficient vegetation to allow inspection. In August 2009, the Town notified DEM that the vegetation was removed. DEM inspected the dam on June 4, 2010. The dam was determined unsafe due to an inoperable low level outlet and severe erosion on several areas of the embankment. An NOV was issued to the Town in October 2010 for the unsafe conditions. The Town requested a hearing on the NOV. In March 2013, DEM and the Town entered a Consent Agreement to resolve the NOV. The Consent Agreement provides a schedule to return the dam to a safe condition.

Dam number 169 (Almy) in Johnston

DEM inspected the dam in September 2008. An informal written notice was issued to the owner (Town of Johnston) in December 2008. The notice advised the Town that a complete visual inspection could not be performed due to excessive vegetation on the dam, the low level outlet was inoperable and the spillway did not function as originally constructed. The notice required the Town to cut sufficient vegetation to allow DEM to perform a complete visual inspection of the dam and to develop a reasonable schedule to address the other two unsafe conditions. In July 2009, the Town stated that vegetation removal would commence following removal of vegetation from the Oak Swamp Dam (see paragraph above). DEM inspected the dam in July 2010 and determined the dam unsafe for the same reasons noted in the notice. An NOV was issued to the Town in October 2010 for the unsafe conditions and the town requested a hearing on the NOV. In March 2013, DEM and the Town entered a Consent Agreement to resolve the NOV. The Consent Agreement provides a schedule to return the dam to a safe condition.

Dam number 170 (Simmons Upper) in Johnston

DEM inspected the dam in September 2010. The dam was determined unsafe due to an inoperable low level outlet and excessive vegetation that prohibited a complete inspection. An NOV was issued in October 2010 to the owner (Town of Johnston) to address these conditions and the Town requested a hearing on the NOV. In March 2013, DEM and the Town entered a Consent Agreement to resolve the NOV. The Consent Agreement provides a schedule to return the dam to a safe condition.

Dam number 171 (Simmons Lower) in Johnston

DEM inspected the dam in September 2010 and determined it unsafe due to an inoperable low level outlet, a spillway that no longer functioned as originally constructed, severe erosion in the embankment and excessive vegetation that prohibited a thorough inspection. An NOV was issued in October 2010 to the owner (Town of Johnston) for the unsafe conditions and the Town requested a hearing on the NOV. In March 2013, DEM and the Town entered a Consent Agreement to resolve the NOV. The Consent Agreement provides a schedule to return the dam to a safe condition.

Dam number 313 (Hughesdale Upper) in Johnston

The dam was inspected in November 2011 by DEM's engineering consultant and the report was forwarded to DEM in May 2012. The report indicated a lowered section of embankment that appeared to periodically overtop and an inoperable low level outlet. DEM issued an NOV to the owner (Jeannette Y. Fontaine, Fontaine Living Trust) for these unsafe conditions. The owner requested a hearing on the NOV and is also investigating the cost to correct the unsafe conditions.

Dam number 097 (Butterfly) in Lincoln

DEM's engineering consultant inspected the dam in May 2010 and forwarded the report to DEM in September 2010. The report stated the low level outlet was inoperable and DEM issued an NOV to the owner (Town of Lincoln) in May 2011 to address this unsafe condition. The Town requested a hearing on the NOV. In March 2012, DEM and the Town entered a Consent Agreement to address unsafe conditions at two Town-owned dams (this dam and dam number 391 below). The agreement required the Town to submit a repair application for the low level outlet by June 2013. In July 2013, the town stated they were behind schedule but still moving forward to return the dam to a safe condition.

Dam number 104 (Bleachery) in Lincoln

The dam was inspected by DEM's engineering consultant in June 2010 and the report forwarded to DEM in September 2010. The report indicated the low level outlet was inoperable and DEM issued an NOV to the owner (Providence Casket Company) in June 2011 for this unsafe condition. The owner requested a hearing on the NOV and later entered a Consent Agreement with DEM in July 2013, which resolved the NOV. The Consent Agreement provides a schedule by which the dam will be returned to a safe condition.

Dam number 391 (Handy Upper) in Lincoln

DEM's engineering consultant inspected the dam in June 2010 and forwarded the report to DEM in September 2010. The report stated that excessive vegetation prohibited a complete inspection of the dam and there was possible sediment transport through the dam. An NOV was issued to the dam owner (Town of Lincoln) in May 2011 for these unsafe conditions. The Town did not request a hearing on the NOV and in March 2012, DEM and the Town entered a Consent Agreement to address unsafe conditions at two Town-owned dams (this dam and dam number 097 above). In December 2012, the Town submitted an engineering report indicating that the vegetation was removed and those areas, along with the area of possible sediment transport, were properly inspected. No unsafe conditions were found. Although the Consent Agreement will remain open until dam number 097 is returned to a safe condition, this dam has been returned to a safe condition.

Dam number 408 (Bridlewood) in Lincoln

DEM's engineering consultant inspected the dam in June 2010 and forwarded the report to DEM in September 2010. The report indicated possible sediment transport through the dam and DEM issued the owner (Lucy V. DeLisi) an NOV in June 2011 to address this unsafe condition. The owner requested a hearing on the NOV. The owner also expeditiously addressed the unsafe condition and entered a Consent Agreement with DEM in December 2011 that included monitoring the seepage area for one year. A final monitoring report from the owner's engineer was submitted to DEM in June 2013, which indicated that the dam was returned to a safe condition. The Consent Agreement was closed in June 2013.

Dam number 649 (Bridlewood Upper End) in Lincoln

DEM's engineering consultant inspected the dam in May 2010 and forwarded the report to DEM in September 2010. The report stated that excessive vegetation prohibited a proper inspection. DEM issued NOVs to two of the owners (Richard J. Conti and Rabinder & Rita Kurl) in February 2013 for this unsafe condition. Mr. Conti subsequently sold the property and the NOV was rescinded in April 2013 and reissued to the new owners (Syed K. & Sehark K. Raza) in July 2013. The Raza's did not request a hearing on the NOV and compliance has not been attained. The Kurls requested a hearing and also removed vegetation from their section of the dam. DEM re-inspected the area in November 2013 and no unsafe conditions were observed. The NOV against the Kurls was closed in December 2013.

Dam number 553 (Belleville) in North Kingstown

The dam was inspected by DEM's engineering consultant in August 2012 and the report was forwarded to DEM in January 2013. The report indicated that excessive vegetation prohibited a proper inspection, a section of the dam was lower than the rest of the dam, a large area of erosion was noted and possible sediment transport was observed. DEM issued an NOV to the owner (Town of North Kingstown) in October 2013. The Town did not request a hearing on the NOV and indicated that they would address the issues.

Dam number 615 (Rodman Mill) in North Kingstown

The dam was inspected in May 2010 by DEM's engineering consultant and the report was forwarded to DEM in September 2010. It indicated excessive vegetation which prohibited a complete inspection of the dam and the lack of a low level outlet. DEM issued an NOV to the owner (Bakeford Properties, LLC) in May 2011 for these unsafe conditions. The owner requested a hearing on the NOV. In March 2012, the owner's engineer submitted a report of a visual inspection performed in January 2012, following cutting of the vegetation. The only outstanding item was repair of the low level outlet. In July 2013, a Consent Agreement was entered between the owner and DEM. The Consent Agreement required the two downstream areas which made the dam a high hazard, both of which were located on the dam owner's property, to be addressed in lieu of repairing the low level outlet. One area was a building located adjacent to the dam and the owner agreed to take specific actions as a result of potentially unsafe conditions at the dam, to protect the building's occupants. The other area was a playground which was later removed. The Consent Agreement was recorded in the land evidence records for the property and remains in effect in perpetuity.

Dam number 710 (Slocum Upper) in North Kingstown

DEM's engineering consultant inspected the dam in May 2010 and DEM received the inspection report in September 2010. The report indicated excessive vegetation prohibited inspection of the embankment, vegetation debris prohibited inspection of the spillway and the operability of the spillway stop logs was unknown. In April 2012, DEM issued an NOV to the owners (Maurice N. & Kimberly Perry Klein). The owners did not request a hearing on the NOV and cut, but did not remove, at least some of the vegetation in November 2013.

Dam number 084 (Wenscott) in North Providence

DEM's engineering consultant inspected the dam in November 2009 and submitted the inspection report to DEM in June 2010. The report indicated the low level outlet was inoperable and DEM issued an NOV to the owner (Town of North Providence) in November 2010 for this unsafe condition. The Town requested a hearing on the NOV and continued to negotiate settlement with DEM. In October 2012, DEM and the Town entered a Consent Agreement to resolve the NOV. The Consent Agreement required the Town to submit engineering plans to repair the low level outlet to DEM in July 2013. Through 2013, the Town did not comply with this requirement.

Dam number 046 (Slatersville Middle) in North Smithfield

The dam was inspected by DEM's engineering consultant in November 2009 and DEM received the report in June 2010. The report stated the low level outlet was inoperable and DEM issued an NOV to the owner (Dudley Development Corp.) in April 2011 for this unsafe condition. The owner requested a hearing on the NOV, which was held in October 2012 and a decision was issued in May 2013. Based on testimony on behalf of the owner that a fully opened low level outlet would provide an insignificant effect on lowering the pond or providing additional capacity during a storm, the hearing officer decided that the inoperable low level outlet did not result in an unsafe condition.

Dam number 067 (Todd's) in North Smithfield

DEM inspected the dam in October 2010 and discovered excessive vegetation that prohibited a proper inspection and an inoperable low level outlet. An NOV was issued to the owners (Paul R. & Karen A. Hazard) in May 2012 for these unsafe conditions. The owners requested a hearing on the NOV. In July 2012, the owners submitted documents attempting to show that the dam is incorrectly classified as a significant hazard and should be downgraded to a low hazard. In 2013, DEM was reviewing the documents.

Dam number 761 (Melville #1) in Portsmouth

The dam was inspected in September 2012 by DEM's engineering consultant and the report was forwarded to DEM in January 2013. The report indicated extensive, excessive vegetation that did not allow inspection of most of the dam and an inoperable low level outlet. An NOV was issued to the owner (Town of Portsmouth) in October 2013 to address these unsafe conditions. The Town requested a hearing on the NOV and also met with DEM in November 2013 to discuss settlement.

Dam number 093 (Canada Upper) in Providence

DEM's engineering consultant inspected the dam in December 2011 and forwarded the report to DEM in May 2012. The report indicated the low level outlet was inoperable and DEM issued an NOV to the owner (City of Providence) in November 2012 for this unsafe condition. The City requested a hearing on the NOV and also met with DEM in November 2012 to discuss settlement. The City hired an engineering consultant, which performed a complete inspection of

the dam in August 2013. DEM expects to receive the inspection report in 2014 along with the City's proposed plan to proceed with repair of the dam.

Dam number 109 (Stillwater) in Smithfield

DEM's engineering consultant inspected the dam in May 2010 and forwarded the report to DEM in September 2010. The report indicated that the low level outlet was inoperable, overgrown vegetation and inadequate lighting in an adjacent building prohibited a complete inspection of the dam and vegetation in the spillway discharge channel inhibited flow. DEM issued an NOV to the owner (Breakwater Nature Conservancy) in March 2011 for these unsafe conditions. The owner did not request a hearing on the NOV and has made little progress toward resolution. The case has been forwarded to the DEM's Office of Legal Services for action in Superior Court.

Dam number 120 (Sprague Upper) in Smithfield

DEM's engineering consultant inspected the dam in November 2009 and forwarded the report to DEM in June 2010. The report revealed an inoperable low level outlet and excessive vegetation that prohibited a thorough inspection of the dam. DEM issued an NOV to the owner (Greater Providence YMCA) in November 2010 for these unsafe conditions. The owner requested a hearing on the NOV. In December 2010, DEM determined that it previously authorized the owner to abandon the low level outlet, resolving this issue. The owner removed the vegetation and hired an engineering consultant to inspect the dam, which performed in April 2013. DEM received the inspection report in November 2013, which did not reveal any unsafe conditions at the dam, and DEM expects to close the NOV in early 2014.

Dam number 121 (Sprague Lower) in Smithfield

DEM's engineering consultant inspected the dam in November 2009 and forwarded the report to DEM in June 2010. The report indicated heavy vegetation and vegetation debris that inhibited a proper inspection of the embankment and spillway, and unknown operability of the low level outlet. DEM issued an NOV to the owners (Charles E. & Pauline Bates) in November 2012 for these unsafe conditions. The owners requested a hearing on the NOV and met with DEM in February 2013 to discuss ownership of the dam. Additional research revealed that the Bates' did not own the dam and the NOV was rescinded in March 2013. DEM determined that the owner is the Lake Wionkhiege Improvement Association. The dam is scheduled for a visual inspection in 2014 and an NOV will be issued to the owner using the report for this updated inspection.

Dam number 123 (Hawkins) in Smithfield

The dam was inspected by DEM's engineering consultant in December 2011 and the report was forwarded to DEM in August 2012. The report stated that vegetation deadfall prohibited a proper inspection of the dam and the low level outlet did not appear to operate. The dam owner (Louis Lafazia) requested a hearing on the NOV.

Dam number 126 (Georgiaville) in Smithfield

DEM's engineering consultant inspected the dam in May 2010 and forwarded the report to DEM in September 2010. The report indicated heavy vegetation on the main dam and dike that prohibited a thorough inspection of the embankment, low level gates that were not operated during the inspection (although the operator indicated they were routinely operated) and a section of the dike that was lowered about six feet. The Town of Smithfield owns all of the dam except the approximately 80 foot long, lowered section of the dike, which is owned by Deborah Bliss.

DEM issued an NOV to the Town in April 2011 for the vegetation and low level gate findings. The Town requested a hearing on the NOV. In December 2011, DEM and the Town entered a Consent Agreement to resolve the NOV. The Consent Agreement included a schedule to return the dam to a safe condition. The Town returned the dam to a safe condition and the Consent Agreement was closed in October 2012.

DEM issued an NOV to Deborah Bliss in August 2012 for the lowered section of the dike. The owner requested a hearing on the NOV and also met with DEM in September 2012 to discuss the elevations of various sections of the dam. DEM further researched the issue and determined that although the Bliss-owned section of the dam was physically lowered at one time, it was also at approximately the same elevation as the Town beach/parking lot area of the dam, and was not considered unsafe. The NOV was released in March 2013.

Dam number 425 (Wakefield) in South Kingstown

The dam was inspected by DEM's engineering consultant in June 2010 and the report was submitted to DEM in September 2010. The report indicated excessive vegetation that prohibited a complete inspection of the dam and an inoperable low level outlet. DEM issued an NOV to the dam owner (Town of South Kingstown) for these unsafe conditions in June 2011. The Town requested a hearing on the NOV and also worked to resolve the unsafe conditions. The vegetation was removed and the area inspected, with a report submitted to DEM in December 2012. The Town worked with federal and state agencies, which were designing a replacement fish ladder for the dam, to incorporate a low level outlet into the design. Installation of the low level outlet is expected in 2014.

Dam number 742 (Creamer) in Tiverton

DEM inspected the dam in September 2010 and discovered excessive vegetation which prohibited a complete inspection of the dam. DEM issued an NOV to the owners (Manuel Laureanno and Laureanno Development Corporation) in August 2011 for this unsafe condition. The owners did not request a hearing on the NOV. In March 2013 the DEM filed a lawsuit against the owners. Concurrently, DEM's Office of Legal Services completed additional research that identified 27 property owners whose recorded deeds include language that required them to form the Daniel T. Church Estate Homeowners' Association and maintain the dam. These owners were formally informed of their responsibilities by DEM in June 2013. Several of the owners are working to resolve the issue with the dam, which is expected to be completed in 2014.

COMPLIANCE INSPECTIONS

The Dam Safety Regulations (see page 4) require visual inspection of high hazard dams every two years and significant hazard dams every five years.

High Hazard Dam Inspections

Thirty-three high hazard dams were inspected in 2013. The inspections were completed by DEM or by an engineering consultant hired by DEM using a Federal Emergency Management Agency (FEMA) grant (see page 30). The inspection reports were received in late 2013 to early 2014 and will be reviewed in 2014. The dams that were inspected are as follows:

TOWN	DAM NO.	DAM NAME
Burrillville	003	Wilson
Burrillville	016	Pascoag Upper
Burrillville	572	Wilbur
Coventry	176	Coventry
Coventry	177	Tiogue
Cranston	172	Cranston Print Works
Cranston	320	Stone
Exeter	219	Boone
Exeter	240	Yorker Mill
Glocester	022	Keech
Glocester	165	Ponaganset
Glocester	556	Clarkville
Hopkinton	262	Locustville
Lincoln	295	Limerock
Little Compton	485	Harold E. Watson
Middletown	582	Nelson
Middletown	583	Gardiner
Middletown	584	Easton North
Newport / Middletown	585	Easton South
North Kingstown	444	Silver Spring
North Providence	760	Louisquisset
North Smithfield	048	Forestdale
Portsmouth	395	Lawton Valley
Portsmouth	580	Sisson
Portsmouth	581	St Mary's
Smithfield	115	Slack
Smithfield	116	Hopkins
South Kingstown	426	Peace Dale
South Kingstown	525	Hefler Farm
South Kingstown	549	Asa
Warwick	764	Grist Mill Apartments
West Warwick	145	Natick
Woonsocket	621	Holley Lane

Twenty-one high hazard dams were inspected in 2012. Three of these reports were reviewed in 2013, with the remainder that were not previously reported to be reviewed in 2014, as follows:

TOWN	DAM NO.	DAM NAME	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET
Burrillville	008	Harrisville			
Cumberland	074	Miscoe			
Cumberland	077	Diamond Hill	Good To Poor	Good To Fair	Good
Cumberland	078	Pawtucket	Fair To Poor	Fair	Fair
East Providence	407	James V Turner			
Exeter	221	Browning Mill			
Foster	163	Westconnaug			
Glocester	566	Bowdish			
Glocester / Smithfield	111	Waterman			
Lincoln / North Smithfield	070	Woonsocket # 1			
North Kingstown	513	Carr	Good	Good	Not Applicable
North Smithfield / Smithfield	068	Woonsocket # 3			
Scituate	161	Gainer Memorial			
Smithfield	108	Stillwater			
Warwick	462	Camp Warwick			
West Warwick	149	Centerville			
Woonsocket	073	Harris			

Eighteen high hazard dams were inspected in 2011. Six of these reports were reviewed in 2013, with the remainder that were not previously reported to be reviewed in 2014, as follows:

TOWN	DAM NO.	DAM NAME	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET
Coventry	185	Black Rock			
Coventry	561	Arnold	Good To Fair	Fair	Good
East Providence	446	Bucklin Point	Good To Fair	Good To Fair	Not Applicable
Foster	349	Spear Pond			
Hopkinton	226	Yawgoog	Fair To Poor	Good	Poor
Hopkinton / Richmond	216	Wyoming Upper	Fair To Poor	Fair To Poor	Poor
Lincoln	099	Moffett	Good	Fair	Poor
North Kingstown	693	Slocum Woods	Fair	Fair	Good
South Kingstown	549	Asa			

Significant Hazard Dam Inspections

Thirteen significant hazard dams were inspected in 2013. The inspections were completed by DEM or by an engineering consultant hired by DEM using a FEMA grant (see page 30). The dams inspected are as follows:

TOWN	DAM NO.	DAM NAME	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET
Bristol	409	State Street	(1)	(1)	(1)
Burrillville	001	Wallum	(1)	(1)	(1)
Charlestown	758	Cross Mills	(1)	(1)	(1)
Glocester	029	Mower	(1)	(1)	(1)
Glocester	381	Sucker Brook Bridge	(1)	(1)	(1)
Glocester	587	T. Wright Farm	(1)	(1)	(1)
Hopkinton	274	Harris	Fair To Poor	Good	Not Applicable
Little Compton	746	Adamsville	(1)	(1)	(1)
Narragansett	733	Sprague	(1)	(1)	(1)
Providence	300	Cunliff	(1)	(1)	(1)
South Kingstown	236	Glen Rock	(1)	(1)	(1)
Tiverton	396	Nonquit	(1)	(1)	(1)
Tiverton	467	Mill	(1)	(1)	(1)

(1) Inspection reports were received in late 2013 to early 2014, and will be reviewed and the results will be reported in the 2014 Annual Report.

Twenty-five significant hazard dams were inspected in 2012. Eight of these reports were reviewed in 2013, with the remainder that were not previously reported to be reviewed in 2014, as follows:

TOWN	DAM NO.	DAM NAME	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET
Charlestown / Richmond	249	Horseshoe Falls			
Coventry	175	Quidnick	Fair To Poor	Fair To Poor	Fair To Poor
Coventry	498	Hopkins Farm	Good To Fair	Fair To Poor	Not Inspected
Coventry	645	Center Of New England #1			
Cumberland	079	Rawson			
Cumberland	082	Happy Hollow	Good To Fair	Good To Fair	Not Applicable
Exeter	238	Edward's			
Glocester	023	Smith + Sayles	Good To Poor	Good	Good
Glocester	499	Durfee Hill Wildlife #2			
Hopkinton / Richmond	247	Alton			

TOWN	DAM NO.	DAM NAME	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET
Jamestown	574	Jamestown	Good To Fair	Fair	Not Applicable
Jamestown	575	Jamestown Lower	Good To Poor	Fair	Presence Not Known
Little Compton	474	Simmons			
New Shoreham	424	Block Island Rod & Gun Club			
New Shoreham	765	Mill			
North Kingstown	553	Belleville	Fair To Poor	Fair To Poor	Not Applicable
Portsmouth	761	Melville #1	Poor	Fair To Poor	Poor
Scituate	162	Moswansicut			
Scituate	164	Barden			
Scituate	360	Horseshoe			
South Kingstown	573	Indian Run			
South Kingstown	579	Rocky Brook			
Warren	479	Warren Lower			
Warren	480	Warren Upper			

Eighteen reports require review from the inspections completed in 2011. Ten of these reports were reviewed in 2013, with the remainder not previously reported to be reviewed in 2014, as follows:

TOWN	DAM NO.	DAM NAME	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET
Burrillville	015	Union Mill	Poor	Poor	Poor
Burrillville	039	Spring			
Burrillville	565	Ross	Fair To Poor	Poor	Poor
Coventry	152	Mill			
Coventry	186	Upper	Poor	Fair	Not Applicable
Foster	526	Gorham, N. Farm			
Glocester	021	Cherry Valley			
Glocester	032	Snakeskin			
Glocester	514	Lake Aldersgate	Fair To Poor	Fair	Fair
Glocester	594	David King Farm	Good To Fair	Fair	Not Inspected
Hopkinton / Richmond	215	Barberville	Fair To Poor	Fair	Not Applicable
Johnston	323	Caesarville	Poor	Fair	Not Inspected
Johnston	346	Kimball			
North Kingstown	704	Secret	Fair To Poor	Fair	Unknown
North Smithfield	047	Slatersville Lower	Fair To Poor	Good	Poor
Richmond	273	Wood River Junction			

TOWN	DAM NO.	DAM NAME	EMBANKMENT	SPILLWAY	LOW LEVEL OUTLET
Scituate	648	Shoestring Mill			
Smithfield	123	Hawkins	Fair To Poor	Good	Poor

As indicated in *Inspection Program* (see page 6), the Dam Safety Regulations require visual inspection of 48 high hazard dams and 16 significant hazard dams each year. As indicated above, 33 high hazard dams and 13 significant hazard dams were inspected in 2013. DEM does not have sufficient staff to complete all the inspections in-house or enough FEMA grant money to hire an engineering consultant to complete all the required inspections. Also, for dams that were determined to be unsafe during an initial inspection, that dam may not be inspected again while the owner is working to correct the unsafe condition.

Requested Inspections

DEM inspects any high or significant hazard dam upon request by any person who has cause to believe the dam is unsafe. In 2013, DEM received the following inspection requests:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS	REASON FOR INSPECTION	CONCLUSION
Coventry	167	Flat River	High	Water level low	In compliance
Cranston	373	Clarke's Upper	High	Pond drained	In compliance
Glocester	023	Smith & Sayles	Significant	Water level low	No action taken

Dam number 167 (Flat River) in Coventry

DEM received a complaint that the water level in the pond was lower than usual and the gated outlets were open, allowing additional water to leave the pond. An inspection revealed that the dam owner was in compliance with a DEM Consent Agreement that regulates water flow and pond level.

Dam number 373 (Clarke's Upper) in Cranston

DEM received a complaint that the pond was drained overnight. A telephone call to the owner indicated that the newly installed low level outlet (see *Unsafe Dams* on page 7) was opened about half way during a heavy rain storm, when the water over the spillway became elevated. When the owner attempted to close the outlet, it would not fully close, apparently due to debris. The next day they were able to close the outlet and did so.

Dam number 023 (Smith & Sayles) in Glocester

DEM received a complaint that the water in the pond was lower than usual. Investigation revealed that the pond was a couple of inches lower than the level required in a freshwater wetlands permit. The owner was trying to maintain the proper level while the pond above them was releasing water to lower that pond. The owner subsequently took the necessary action to raise the pond to the proper level.

REPAIR APPROVALS

Repairs of the following high and significant hazard dams were approved by DEM in 2013:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS	REPAIR
Coventry	187	Middle	Significant	Spillway reconstruction
Cranston	166	Curran Upper	High	Complete rehabilitation
Cranston	373	Clarke's Upper	High	Low level outlet repair
Exeter	527	Metcalf Wildlife	High	Low level outlet and spillway repair
Smithfield	126	Georgiaville	High	Low level outlets and spillway repair, mid-level outlet installation

A summary of the approvals follows:

Dam number 187 (Middle) in Coventry

In December 2013, DEM approved plans to repair the spillway. The repair was to replace the existing, partially crushed metal spillway conduits with an open channel spillway.

Dam number 166 (Curran Upper) in Cranston

DEM approved plans in April 2013, to fully rehabilitate the entire dam. Work includes flattening the embankment slopes, relocation of the spillway, addition of an emergency spillway and installation of a new low level outlet. The work is expected to begin in early 2014.

Dam number 373 (Clarke's Upper) in Cranston

In June 2013, DEM approved plans to install a new low level outlet at the dam. The work was completed in December 2013.

Dam number 527 (Metcalf Wildlife) in Exeter

DEM approved repair plans in June 2013. The plans were to repair the spillway/low level outlet structure and the work was completed in October 2013.

Dam number 126 (Georgiaville) in Smithfield

DEM approved plans to repair the dam in August 2013. Work included repair of the low level outlets, which still operated but needed attention, repair of the spillway and installation of a new mid-level outlet to assist with winter drawdown. The work began in September 2013.

OWNER / CONTACT INFORMATION

DEM's records for the owners of dams that were previously classified as high hazard or significant hazard are fairly accurate; however, many dams that were previously classified as low hazard and were reclassified to significant or high hazard have questionable owner information. DEM legal counsel has been researching ownership of these dams as time allows.

Orphan Dams

DEM has identified 59 high hazard and significant hazard dams for which an owner has not been identified and formally notified of ownership through the registration process (see *Registration* of page 27). Most dams still require DEM research to identify owners, which is completed by DEM legal counsel, with the priority on unsafe dams as they are discovered. DEM refers to these dams as orphan dams.

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Burrillville	015	Union Mill	Significant
Burrillville	039	Spring	Significant
Burrillville	051	Nichols	Significant
Charlestown	758	Cross Mills	Significant
Charlestown / Richmond	249	Horseshoe Falls	Significant
Coventry	152	Mill	Significant
Coventry	157	Harris	Significant
Coventry	176	Coventry	High
Coventry	177	Tiogoue	High
Coventry	185	Black Rock	High
Coventry	371	Pearce	High
Coventry	645	Center Of New England #1	Significant
Cumberland	074	Miscoe Lake	High
East Greenwich	432	Gale Farm Upper	Significant
Exeter	238	Edward's	Significant
Exeter	240	Yorker Mill	High
Foster	163	Westconnaug	High
Foster	349	Spear	High
Foster	526	Gorham, N. Farm	Significant
Glocester	021	Cherry Valley	Significant
Glocester	022	Keech	High
Glocester	032	Snakeskin	Significant
Glocester	165	Ponaganset	High
Glocester	354	Coomer	Significant
Glocester	381	Sucker Brook Bridge	Significant
Glocester	401	Lake Washington	High
Hopkinton	227	Ashville	Significant
Hopkinton/Richmond	247	Alton	Significant
Johnston	127	Belknap	Significant
Johnston	323	Caesarville	Significant
Johnston	346	Kimball	Significant
Johnston	504	Dexter Farm	Significant
Lincoln	099	Moffett	High
Lincoln	104	Bleachery	High

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Lincoln	649	Bridlewood Upper End	High
Little Compton	746	Adamsville	Significant
Narragansett	733	Sprague	Significant
North Kingstown	550	Hamilton	Significant
North Kingstown	704	Secret	Significant
North Providence	760	Louisquisset	High
Richmond	273	Wood Junction	Significant
Scituate	160	Hope	Significant
Scituate	161	Gainer Memorial	High
Scituate	162	Moswansicut	Significant
Scituate	164	Barden	Significant
Scituate	345	Jordan	Significant
Scituate	360	Horseshoe	Significant
Scituate	361	Pine Swamp #1	Significant
Scituate	648	Shoestring Mill	Significant
Smithfield	116	Hopkins	High
South Kingstown	426	Peace Dale	High
South Kingstown	525	Hefler Farm (1)	High
South Kingstown	579	Rocky Brook	Significant
Tiverton	742	Creamer	High
Warwick	669	Dave's Marketplace	Significant
Warwick	764	Grist Mill Apartments	High
West Warwick	145	Natick	High
West Warwick	149	Centerville	High
West Warwick	455	Bouchar Farm	Significant

(1) This dam has also been identified as unsafe. DEM has notified the town of South Kingstown and the property owners around the pond of the issues involving the dam and asked if either the Town or the owners were interested in taking responsibility for addressing the unsafe conditions to advise DEM, otherwise the DEM would seek funding to remove the dam. The Town expressed an interest in helping, but no one has come forward to take responsibility to address the unsafe conditions.

REMOVALS

There were no dam removals in 2013.

REGISTRATION

In 2008 DEM began registering dams. The process involves mailing a registration form to each owner of a high hazard or significant hazard dam and formally notifying the owner of the dam's hazard classification. The owner then has a specific time period to return a completed registration form or to appeal ownership and/or the hazard classification. There is no fee to register a dam and the main purpose of the registration form is to obtain up-to-date contact information on the dam owner.

DEM has mailed about 240 registration letters through 2013, with the remainder to be mailed as time allows and as the dam owners are determined (see *Owner/Contact Information* on page 25). DEM has received completed registration forms for the following 82 dams:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Burrillville	003	Wilson	High
Burrillville	008	Harrisville	High
Burrillville	027	Sucker	Significant
Burrillville	565	Ross	Significant
Burrillville	766	Ocean State Power	High
Coventry	167	Flat River	High
Coventry	175	Quidnick	Significant
Coventry	186	Upper	Significant
Coventry	187	Middle	Significant
Coventry	561	Arnold	High
Cranston	172	Cranston Print Works	High
Cranston	320	Stone	High
Cranston	373	Clarke's Upper	High
Cumberland	077	Diamond Hill	High
Cumberland	078	Pawtucket	High
Cumberland	079	Rawson	Significant
Cumberland	081	Robin Hollow	Significant
Cumberland	082	Happy Hollow	Significant
East Providence	407	James V Turner	High
East Providence	446	Bucklin Point	High
Exeter	219	Boone	High
Exeter	239	Slocum	High
Exeter	527	Metcalf Wildlife	High
Glocester	022	Keech	High
Glocester	023	Smith + Sayles	Significant
Glocester	514	Lake Aldersgate	Significant
Glocester	555	Hawkins	High
Glocester	556	Clarkville	High
Glocester	587	T. Wright Farm	Significant
Hopkinton	225	Wincheck	Significant
Hopkinton	226	Yawgoog	High
Hopkinton	285	Langworthy	Significant
Hopkinton	440	Hoxie Farm	Significant
Jamestown	574	Jamestown	Significant
Jamestown	575	Jamestown Lower	Significant
Johnston	168	Oak Swamp	High
Johnston	169	Almy	High
Johnston	170	Simmons Upper	High
Johnston	171	Simmons Lower	High
Johnston	313	Hughesdale Upper	High
Lincoln	097	Butterfly	High
Lincoln	101	Barney	High
Lincoln	295	Limerock	High

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Lincoln	391	Handy Upper	High
Lincoln	408	Bridlewood	High
Lincoln / North Smithfield	070	Woonsocket # 1	High
Little Compton	485	Harold E Watson	High
Middletown	582	Nelson	High
Middletown	583	Gardiner	High
Middletown	584	Easton North	High
Newport / Middletown	585	Easton South	High
North Kingstown	513	Carr	High
North Kingstown	553	Belleville	Significant
North Kingstown	615	Rodman Mill	High
North Kingstown	693	Slocum Woods	High
North Kingstown	708	Shady Lea Mill	High
North Kingstown	710	Slocum Road Upper	High
North Providence	084	Wenscott	High
North Smithfield	046	Slatersville Middle	High
North Smithfield	047	Slatersville Lower	Significant
North Smithfield	067	Todd's	Significant
North Smithfield / Smithfield	068	Woonsocket # 3	High
Portsmouth	395	Lawton Valley	High
Portsmouth	580	Sisson	High
Portsmouth	581	St Mary's	High
Portsmouth	761	Melville #1	Significant
Providence	093	Canada Upper	Significant
Providence	300	Cunliff	Significant
Smithfield	109	Stillwater	Significant
Smithfield	120	Sprague Upper	High
South Kingstown	236	Glen Rock	Significant
South Kingstown	425	Wakefield	High
South Kingstown	549	Asa	High
South Kingstown	573	Indian Run	Significant
Tiverton	396	Nonquit	Significant
Warren	479	Warren Lower	Significant
Warren	480	Warren Upper	Significant
Warwick	462	Camp Warwick	High
West Warwick	147	Riverpoint Upper	High
West Warwick	148	Arctic	High
Woonsocket	073	Harris	High
Woonsocket	621	Holley Lane	High

GRANTS TO DEM

From 2000 through 2013, DEM received grants totaling \$625,244 from the Federal Emergency Management Agency (FEMA) National Dam Safety Program.

In the mid 2000's a substantial amount of the grant funds were used for engineering services to assess the hazard classification of about 200 dams throughout the state. A typical inundation map is shown below. The hypothetically failed Creamer Pond Dam is in the bottom right corner of the photo and the blue area indicates the expected path of the released water. This dam is classified as a high hazard.



Creamer Pond Dam (No. 742), Tiverton

The 2012 grant was awarded in September 2012 for \$58,095 to fund the following projects:

- \$48,716 engineering services to visually inspect high hazard and significant hazard dams and complete inspection reports
- \$4,560 purchase 4 tablets for use during emergency dam inspections
- \$2,728 send 4 employees to ASDSO's 2013 annual dam safety conference
- \$2,016 cell phone service for 3 phones for 1 year
- \$75 purchase 3 cell phone chargers

The 2013 grant was awarded in September 2013 for \$60,179 to fund the following projects:

- \$52,287 engineering services to visually inspect significant hazard dams and complete inspection reports
- \$3,230 3 personal computers & monitor
- \$2,580 send 1 employee to ASDSO's 2014 annual dam safety conference
- \$2,052 cell phone service for 3 phones for 1 year

INTERAGENCY COORDINATION

Since 2010, DEM and the Rhode Island Emergency Management Agency (RIEMA) have met on a semi-regular basis to improve communication and response to dam safety emergencies. Coordination also includes a DEM review of specific sections of emergency action plans (see *Emergency Action Plans* on page 31) for which RIEMA requested assistance, such as a dam-specific condition that describes when the plan should go into effect.

MEETING/SEMINAR ATTENDANCE

All full time and part time dam safety staff attended the ASDSO Annual Conference & Dam Owner workshop held in Providence in September 2013.

DEM OWNED DAM REPAIRS

DEM continued to move forward under its Capital Development Projects program, undertaking the engineering evaluation, design and reconstruction at the following DEM owned dam:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Cranston	166	Curran Upper	High

In 2008, an engineering consultant was selected to develop the final design for the reconstruction project. Development of the final design plans continued through 2009. In 2010 negotiations proceeded with an adjacent property owner to acquire property to allow reconfiguration of the downstream spillway channel. The current discharge channel places flow along the toe of the earthen embankment; the revised design will move flow away from the dam after it passes the spillway. Efforts to acquire the adjacent property continued through 2011. In October 2012, proposed repair plans were forwarded to the Dam Safety Program for review and a comment letter was issued in December 2012 and the approval was issued in April 2013. The work is underway.

EMERGENCY ACTION PLANS

Rhode Island General Laws Section 46-19-9 requires a city or town in which a high hazard or significant hazard dam is located, and a state agency that owns a high hazard or significant hazard dam, to complete by July 1, 2008, an Emergency Action Plan (EAP) for the dam (see *Statutes* on page 3). An EAP is a formal document that identifies potential emergency conditions at a dam and specifies pre-planned actions to be followed to minimize loss of life and property damage. The law mandates that the Rhode Island Emergency Management Agency (RIEMA) coordinate development of the EAPs and give final approval for an EAP to be considered complete. The law also requires DEM and the Rhode Island League of Cities and Towns to cooperate with RIEMA.

In October 2007, RIEMA presented a draft EAP template to DEM and the League of Cities and Towns for review. DEM provided comments to RIEMA which made changes to the template and finalized it.

The EAP template was presented to city and town officials in January 2008. The officials were informed that DEM would provide dam failure inundation maps for all high hazard and significant hazard dams, for use in completing the EAPs. As the inundation maps were finalized, DEM mailed them to the appropriate municipalities.

Through 2013, RIEMA received about 105 draft EAPs, none of which have been approved. EAPs have been submitted by DEM for each of the 14 high and significant hazard dams it owns. All the EAPs require revisions, which are expected to be completed in 2014 and resubmitted to EMA for approval. A list of the DEM owned dams which require EAPs is shown below:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Cranston	166	Curran Upper	High
Cranston	198	Curran Lower	High
Cranston	340	Meshanticut Park	Significant
Exeter	221	Browning Mill	High
Glocester	018	Burlingame Upper	High
Glocester	499	Durfee Hill Wildlife #2	Significant
Glocester	566	Bowdish	High
Hopkinton / Richmond	215	Barberville	Significant
Hopkinton / Richmond	216	Wyoming Upper	High
Lincoln	102	Olney	High
Little Compton	474	Simmons	Significant
North Kingstown	444	Silver Spring	High
Richmond	261	White's	High
Smithfield	108	Stillwater	High

DAM MANAGEMENT DISTRICTS

Rhode Island General Laws Chapter 45-62 authorizes cities and towns to create dam management districts for the maintenance and repair of dams within their boundaries. The following two districts are currently in operation:

TOWN	DAM NO.	DAM NAME	HAZARD CLASS
Burrillville	016	Pascoag Upper	High
Exeter	219	Boone	High

In 2008 by the Town of Exeter created a district for the *Boone Lake Dam (No. 219)*, which is a privately owned, high hazard dam.

In 2009 the Towns of Burrillville and Glocester created a district for the *Pascoag Reservoir Upper Dam (No. 16)*. The dam is a privately owned, high hazard dam. The dam is located in Burrillville and the impoundment continues into Glocester.

PROFESSIONAL ASSOCIATIONS

Rhode Island has been a member of Association of State Dam Safety Officials (ASDSO) since its inception in Denver, Colorado in 1984. ASDSO membership consists of state representatives along with corporate and individual members representing dam owners and professional engineering firms. ASDSO was formed to serve these initial functions:

- Improve efficiency and effectiveness of state dam safety programs;
- Foster public awareness;
- Facilitate inter-organizational, intergovernmental and interstate cooperation;
- Assist the dam safety community and provide a forum for the exchange of information;
- Provide representation of dam safety interests before state legislatures and before Congress; and
- Manage the association effectively through internal policies and procedures.

ASDSO has helped to improve dam safety in Rhode Island mainly through its sponsorship of regional dam safety workshops and its national annual conferences.

PROGRAM LIMITATIONS

STAFFING

Currently, the Dam Safety Program has 1.6 full time equivalents (FTEs), consisting of 1.4 FTEs (engineers/inspectors), 0.1 FTE (management) and 0.1 FTE (administrative/clerical). To successfully meet the requirements of the current statute and the Dam Safety Regulations, DEM needs an additional 0.6 FTE (engineer/inspector).

The 0.4 FTE portion of the 1.4 FTEs (engineers/inspectors) above consists of an engineer who was previously assigned to perform other work. In 2009 and 2010, DEM trained this engineer and one other engineer to work in the program. This engineer has been assisting with day to day management of the program. The other engineer will perform inspections only during major storms.

FINANCIAL ASSISTANCE FOR REPAIRS AND/OR REMOVAL OF DAMS

The Governor's Dam Safety and Maintenance Task Force concluded that repairs to bring all Rhode Island dams up to current safety standards could cost on average as much as \$800,000 per dam. The Governor and General Assembly recognized the need for financial assistance and enacted legislation to assist owners with the cost of dam repair. In 2001 the Clean Water Finance Agency (CWFA) was authorized to issue loans for projects associated with dam safety. Unfortunately, the costs are so overwhelming that most owners are unable to afford to pay the principal, let alone the interest, on the loans from the CWFA. Recognizing this problem, in 2005 cities and towns were authorized to create dam management districts to collect funds for the maintenance and repair of dams.

INSPECTION LIMITATIONS

By law, DEM is required to cause to be inspected all the dams in the state. However, the visual inspections performed by the Dam Safety Program do not involve full engineering analyses of the structural integrity of dams. DEM does not have the staff or the financial resources to ensure that such detailed inspections are completed. Although a visual inspection can provide indicators of underlying problems, an engineering analysis is sometimes needed to more fully assess the condition of the dam.

INADEQUATE SPILLWAY CAPACITIES

Climate scientists predict that we will experience more severe storms and heavy rainfall. A report entitled *Climate Change in Rhode Island: What's Happening Now & What You Can Do* states that bridges and roads will be more susceptible to damage because of more severe storms and heavy rainfall. A link to the report can be found at http://oceanservice.noaa.gov/education/pd/climate/teachingclimate/climate_change_in_rhode_island.pdf. The same is true of dams. In the March 2010 floods 5 dams failed in Rhode Island (2 significant hazard dams and 3 low hazard dams). DEM believes that many of the high hazard dams and the significant hazard dams are unable to safely pass the amount of water that will be generated from these storms, causing the dams to overtop. Overtopping is the primary cause of dam failures. Engineering analyses of the spillway capacities of each of the 177 high hazard dams and significant hazard dams is required to determine the amount of water these dams can safely pass without overtopping. DEM does not have the staff or the financial resources to perform these analyses.

ORPHAN DAMS

While a final number is not yet known, DEM expects that there will be a substantial number of high hazard dams and significant hazard dams with no legal owner. DEM does not have the staff or the financial resources to routinely monitor these dams and/or maintain/repair these dams. If the cities and towns and/or the property owners who benefit from the ponds/lakes that are created by these dams are unable or unwilling to assume responsibility for the upkeep of these dams, these dams will continue to pose an increased risk of failure.

TECHNICAL GUIDANCE DOCUMENTS

DEM has made available a technical guidance document titled, *Dam Safety – An Owner's Guidance Manual*, prepared by the Federal Emergency Management Agency (FEMA) and the State of Colorado. The document is available on DEM's website at <http://www.dem.ri.gov/programs/benviron/compinsp/pdf/damguide.pdf>. Although it is a useful document, DEM would like to develop technical guidance documents specific to Rhode Island. Such documents would better assist both dam owners and consultants in understanding requirements in the Dam Safety Regulations.

This completes the annual report on dam safety and the activities performed by DEM in 2013. For further information on the Dam Safety Program please contact David Chopy at (401) 222-1360, extension 7400.