PUBLIC ASSISTANCE DETERMINATION ANALYSIS
Vermont Department of Fish and Wildlife, PA ID # 000-UVK0I-00
Restoration of Roxbury Fish Culture Station, Project Worksheet 2738
FEMA-4022-DR-VT

Date:	March 17, 2014

Applicant Name:	Vermont Department of Fish and Wildlife			Applicant Type:	☒ State Agency ☐ Local Government ☐ Tribe ☐ Private Nonprofit
Disaster Number:	FEMA-4022-DR-VT				
Project Worksheet #(s):	2738	Category	G	Project Worksheet Facility / Title	Roxbury Fish Culture Station
Amount Requested	$4,435,543 (federal share of $3,991,988)			Amount Denied:	$4,435,543 (federal share of $3,991,988)[1]

I. Project Description

The Vermont Department of Fish and Wildlife ("Applicant") owns and operates the Roxbury Fish Culture Station in Roxbury, Vermont ("Roxbury hatchery") that raises cold water fish species to stock select Vermont water bodies. The Roxbury hatchery is designed as an open-pond system consisting of a series of four rearing ponds, one treatment (settlement) pond, two raceways, one overflow tank, two low head oxygenator units, and bird netting covering the ponds.[2]

The Roxbury hatchery discharges fish culture effluent into a tributary of the White River on a year-round basis as part of its operations, which necessitates a discharge permit. In October 2006, the Wastewater Management Division of the Vermont Department of Environmental Commission ("DEC") issued a final amended discharge permit for the Roxbury hatchery[3] that set certain effluent discharge limitations with which the Applicant needed to comply as a condition of the permit.[4]

The 2006 permit, valid for five years, required the submission of a renewal application before September 30, 2010. Pursuant to this requirement, the Applicant applied for a renewal permit to DEC on September 28, 2010, in accordance with state law.[5] DEC informed the Applicant that its application for renewal was timely and sufficient, and that the existing 2006 permit would not expire until DEC acted upon the renewal application.[6] The Roxbury hatchery, however, was now subject to the jurisdiction of the Federal Water Pollution Control Act ("Clean Water

[1] As detailed below, this determination analysis pertains only to the eligibility of the upgrades to the predisaster construction of the hatchery that the Applicant has asserted were required by the Vermont NPDES permit program. This is not a final determination for the eligible scope of restorative work and funding for the project.

[2] HDR Engineering, Inc., *Roxbury Hatchery Existing Site Plan*.

[3] Roxbury Fish Hatchery Amended Discharge Permit No. 3-0362 (Oct. 20, 2006).

[4] The permit contained the following conditions:

(1) The discharge shall not cause a violation of the water quality standards of the receiving water.

(2) Use of the following chemicals shall be in accordance with the U.S. Food and Drug Administration for the prevention and control of fish pathogens and disease. Concentrations and treatment durations shall not exceed specific product label or authorized Investigative New Animal Drug (INAD authorization): sodium chloride, Formalin, Romet-30, Terramycin, and hydrogen peroxide.

(3) The permit required monthly monitoring and reporting.

[5] 3 V.S.A. § 814 (Licenses).

[6] Letter from Julie Campbell, Administration & Compliance Section, Vermont Department of Environmental Conservation, to Jeremy Whalen, Vermont Fish and Wildlife Roxbury Fish Culture Station *subj: Renewal of Permit 3-0362* (Oct. 4, 2010).

Act")[7] and the National Pollution Discharge Elimination System ("NPDES") because the fish production in 2009 and 2010 had increased over previous levels but still within the design capacity of the hatchery. Because the facility was now subject to NPDES, DEC needed to complete a detailed site specific analysis and set effluent limitations in a manner consistent with the Clean Water Act and the Vermont Water Pollution Control Act ("VWPCA"),[8] Vermont Water Pollution Control Regulations ("VWPCR"),[9] and Vermont Water Quality Standards ("VWQS").[10]

Before DEC issued a new permit, floodwaters during Tropical Storm Irene in August-September 2011 damaged various structures, the rearing pond system, and auxiliary facilities at the Roxbury hatchery.[11] With respect to the non-building portions, the damages included an estimated 4,153 CY sand, gravel, and other debris deposited in fish ponds; 310 LF of concrete outlet walls and structures (various dimensions) that were overtopped and destroyed; 30,300 SF of bird netting destroyed; one 9000 gallon rainwater storage tank destroyed; two low head oxygenators washed away; 500 LF of 4" ductile iron water supply pipe damaged; 1000 LF of 6" PVC water supply pipe damaged; and 3 electrical outlets and 500 LF power line (underground) destroyed.

Following Tropical Storm Irene, the DEC completed the permit renewal process and determined that the hatchery would need to meet more stringent effluent limitations for phosphorus, nitrogen, and formalin under its NPDES discharge permit.[12] These more stringent limitations resulted from changed environmental and biologic conditions at the site, but they did not result from disaster damage to the facility.

FEMA prepared Project Worksheet 2738 to identify disaster-related damage and set forth the scope of work to repair that damage. Using the Cost Estimating Format ("CEF"), the FEMA project specialist estimated $212,612 as the total project cost to restore the hatchery. The Applicant has asserted that the open pond system design of the Roxbury hatchery at the time of Tropical Storm Irene could not meet the new effluent limitations for phosphorus, nitrogen, and formalin required by DEC as part of the hatchery's NPDES permit renewal. As such, in order to operate the hatchery at the same capacity at the time it was damaged during Tropical Storm Irene, the Applicant has asserted that it must upgrade the hatchery's design. Based upon these assertions, FEMA created Version 1 of Project Worksheet 2738 that set forth a scope of work for the architecture and engineering costs for the design of the repairs to the Roxbury hatchery with a total project cost of $359,035.[13] FEMA awarded Version 1 on August 2, 2012.

The Applicant contracted with HDR Engineering for the engineering and design of the restoration of Roxbury hatchery. This company is an engineering firm that specializes in the construction of fish hatcheries across the United States and, according to the Applicant, has completed more than 500 projects concerning facility studies,

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[7] Federal Water Pollution Control Act, Act June 30, 1948, 62 Stat. 1155 (1948) (codified as amended at 33 U.S.C. § 1251 *et seq*.) ["Clean Water Act"].

[8] 10 V.S.A. Chapter 47.

[9] Vermont Water Pollution Control Permit Regulations (1974) ["VWPCR"] (available at http://www.vtwaterquality.org/ww/Rules/WPC/1974WPCregs.pdf).

[10] Vermont Natural Resource Board Water Resources Panel, Vermont Water Quality Standards – Vermont Code R. 12 004 052 (Dec. 31, 2011) ["VWQS"] (available at http://www.nrb.state.vt.us/wrp/publications/wqs.pdf).

[11] FEMA prepared various Project Worksheets for the damages to the Roxbury hatchery, including roads and parking Lots (PW1178), damaged fish stock (PW 1380), springhouse repairs (PW1468), hatchery fence (PW 1942), hatchery septic system and leach field (PW 2386), damages to ice house, administration/lab, and carriage barn (PW 2739). These projects are not at issue under this determination analysis.

[12] Letter from Peter LaFlamme, Director, Watershed Management Division, to Jeremy Whalen, Vermont Fish and Wildlife Roxbury Fish Culture Station *re: Effluent Limits at the Roxbury Fish Hatchery* (Jun. 12, 2012). See also Letter from David Mears, Commissioner, Vermont Department of Environmental Conservation, to Ron Pentowkski, FEMA Project Specialist (Jun. 13, 2013); Letter from Neil C. Kamman, Manager of the Monitoring, Assessment, and Planning Division, Vermont Department of Environmental Conservation, to Ron Pentowkski, FEMA Project Specialist (Apr. 3, 2013).

[13] PA-01-VT-4022-PW-02738(1) ("Project Worksheet 2738").

feasibility studies for new facilities, facility renovations, and complete design and construction of new facilities. The Applicant stated that HDR explored a number of design options (such as upgraded ponds, raceways, circular tanks), but none achieved acceptable results to meet the effluent limitations other than the proposed tank-based design.[14] Following the completion of the design, the Applicant submitted a scope change request in January 2013 for reconstruction of the Roxbury hatchery.[15]

The new design of the Roxbury hatchery involves the replacement of the natural open pond system to a tank based system, with the function of the four rearing ponds being replaced with 12 tanks and the function of the fifth treatment pond being replaced with a sludge storage and clarifier tank. The Applicant estimated the cost of construction for the new design in its scope change request as total base project budget to be $4,435,543.[16]

The FEMA project specialist initially denied the scope change request on July 1, 2013, which prompted discussions between the Applicant and FEMA.[17] As part of these discussions, FEMA agreed to further analyze the issue and stay its final determination on the scope change request. FEMA has worked with the Applicant over the past seven months to discuss the issue of the eligibility of the NPDES permit program as a standard and received significant amounts of additional information from the Applicant. The Applicant has asserted during discussions and its written correspondence that the new design of the Roxbury hatchery in order to meet specific effluent standards was clearly mandated by the Clean Water Act and Vermont's federally delegated NPDES permit program before Tropical Storm Irene,[18] which is implemented through the VWPA, VWPCR, and VWQS.

Upon review of this information, FEMA orally informed the Applicant in late January 2013 that the requested upgrades to the hatchery described in the Applicant's scope change were not eligible because the Vermont NPDES permit program did not meet the criteria as an eligible standard under 44 C.F.R. § 206.226(d). The Applicant, in turn, requested an official determination letter in order to appeal the decision, even though FEMA has not finalized the eligible scope of work for this project. Specifically, FEMA is currently working to perform a hydraulic and hydrologic ("H&H") study at the Roxbury hatchery to inform FEMA's development of hazard mitigation measures for the project and FEMA's compliance with Executive Order 11988 and 44 C.F.R. pt. 9. This determination analysis, therefore, only pertains to the eligibility of the upgrades to the predisaster construction of the hatchery that the Applicant has asserted were required by the Vermont NPDES permit program.

II. Issue

The Applicant has asserted that it must upgrade the predisaster design of the Roxbury hatchery in order to meet the new effluent limitations set by DEC as part of the renewal of the NPDES permit for the hatchery. In order for such upgrades to be eligible for Public Assistance, the Vermont NPDES permit program must meet the criteria for repair or replacement standards at 44 C.F.R. § 206.226(d), which is the issue presented under this determination analysis.

III. Applicable Law, Regulations, and FEMA Policy

[14] See HDR Engineering, Inc., *Roxbury Hatchery Erosion and Stormwater Control Site Plan* (which provides the design of the new facility).

[15] Letter from Patrick Berry, Commissioner, Vermont Fish and Wildlife Department, to Ben Rose, Public Assistance Office, Vermont Emergency Management *re: Project Worksheet 2738 – Roxbury Fish Culture Station – Engineering and Scope Change Request* (June 11, 2013).

[16] HDR, Reconstruction And Improvements Roxbury Fish Culture Station 100% Submittal (March 11, 2013).

[17] Letter from Ron Pentkowski, FEMA Project Specialist, to Ben Rose, Vermont Emergency Management *re: Project Worksheet # 02738 – Roxbury Fish Hatchery* (Jul. 1, 2013).

[18] See, e.g. Memorandum from Catherine Gjessing, General Counsel, Vermont Department of Fish and Wildlife re: *Vermont Agency of Natural Resources Department of Fish and Wildlife Memorandum in Support of the Project Worksheet # 02738 Request for scope change for the Roxbury Fish Hatchery* (Aug. 23, 2013); Draft Memorandum from Catherine Gjessing, General Counsel, Vermont Department of Fish and Wildlife re: *Vermont Agency of Natural Resources Department of Fish and Wildlife Memorandum in Support of the Project Worksheet # 02738 Request for scope change for the Roxbury Fish Hatchery* (Nov. 13, 2013).

A. Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. No. 93-288, §§ 102, 403, 406, and 407 (1974) (codified as amended at 42 U.S.C. §§ 5122, 5170b, 5172, and 5173) ["Stafford Act"]

B. 44 C.F.R. §§ 206.201, 206.221, and 206.226

C. FEMA Disaster Assistance Policy No. 9527.4, *Construction Codes and Standards* (Feb. 5, 2008)

D. Federal Emergency Management Agency, FEMA 322 – Public Assistance Guide, pp. 33-36 (Jun. 2007)

IV. Discussion

A. Overview of the Vermont National Pollution Discharge Elimination System Permit Program

The Clean Water Act provides the statutory basis for the NPDES permit program and the basis for regulating the discharge of pollutants from point sources to waters of the United States. Section 402 of the Clean Water Act requires the Environmental Protection Agency ("EPA") to develop and implement the NPDES program, and provides the EPA with the authority to set effluent limits on an industry-wide (technology-based) basis and on a water-quality basis that ensure protection of receiving water.[19] The Clean Water Act requires anyone who wants to discharge a pollutant to first obtain a NPDES permit, or else that discharge is illegal. Since 1974, Vermont has been authorized to administer the NPDES program by the EPA, to include the creation of water quality standards for the State and issuance of NPDES permits.[20] The Vermont's NPDES permit program is implemented through the VWPCA, VWPCR, VWQS, and the Procedure for Development of Water Quality Based Effluent Limits in NPDES Permits ("Reasonable Potential Determination Procedures"),[21] each of which is briefly discussed below.

1. Vermont Water Pollution Control Act

The VWPCA, among other things, sets two types of water classes (Class A and Class B) and directs the Secretary of Natural Resources to adopt standards of water quality to achieve the purposes of these two classifications,[22] and the Secretary has adopted such standards in the VWQS.[23] The law also requires any person discharging waste into the waters of the State to obtain a permit from the Secretary of Natural Resources, and the Secretary has set the process and requirements for obtaining a permit in the VWPCR.[24]

2. Vermont Water Pollution Control Permit Regulations

[19] Clean Water Act, § 402 (codified as amended at 33 U.S.C. § 1342); 40 C.F.R. pt. 122.

[20] A NPDES Program consists of various components—including the NPDES base program, federal facilities, general permitting, pretreatment program, and biosolids—and a state may receive authorization for one or more of these components. The State of Vermont has received authorization for the NPDES base program, pretreatment program, and general permits program.

[21] Vermont Department of Environmental Conservation, Interim Procedure for Development of Water Quality Based Effluent Limits in NPDES Permits (unsigned).

[22] 10 V.S.A. § 1252(a).

[23] 10 V.S.A. § 1252(e) ("The Secretary shall adopt standards of water quality to achieve the purposes of the water classifications. Such standards shall be expressed in detailed water quality criteria, taking into account the available data and the effect of these criteria on existing activities, using as appropriate: (1) numerical values, (2) biological parameters; and (3) narrative descriptions. These standards shall establish limits for at least the following: alkalinity, ammonia, chlorine, fecal coliform, color, nitrates, oil and grease, dissolved oxygen, pH, phosphorus, temperature, all toxic substances for which the United States Environmental Protection Agency has established criteria values and any other water quality parameters deemed necessary by the Board.")

[24] 10 V.S.A. §§ 1259 and 1263.

The Secretary of Natural Resources issued the VWPCR pursuant to her authority under the VWPCA, and they outline the permits and permitting process for point discharges to surface waters and monitoring and reporting. The regulations specifically enumerate the terms and conditions that the Secretary must include as part of discharge permit, which include the effluent discharge limitations.

3. Vermont Water Quality Standards

The foundation of the water quality-based pollution control program mandated by the Clean Water Act is the VWQS.[25] The VWQS include one or more designated uses for water bodies, water quality criteria, and an anti-degradation provision.[26] A "designated use" for a water segment could include such uses as boating, swimming, aquatic habitat, and public water supply. "Water quality criteria" are those criteria necessary to support the designated uses, and are set forth in numeric criteria for specific parameters; toxicity criteria to protect against the aggregate effects of toxic pollutants; or narrative criteria that describe the desired condition of the water body. The "anti-degradation provision" prohibits discharges that would degrade water quality below that necessary to maintain the existing and designated uses.[27]

The VWQS sets forth, among other things, general water-quality based criteria, including specific standards for nutrients. The standards for the nutrients ***phosphorus*** and ***nitrogen*** are narrative (not numerically) based, and provide that total phosphorus and nitrates discharges "shall be limited so that they will not contribute to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that prevents the full support of uses."[28] The VWQS also sets forth specific standards for toxic substance discharges, such as the toxic substance ***formalin*** that is used at the Roxbury hatchery to control certain fish diseases and parasites.[29] The standard for toxic substances is both narrative and numerically based, and the narrative criteria require that toxic substance discharge limitations must be sufficient to protect "human health" and "aquatic biota or wildlife."[30] Lastly, the VWQS authorizes the DEC to "establish and apply numeric biological indices" to assure compliance with the narrative standards for aquatic biota and aquatic habitat uses set forth in the VWQS. The DEC, in turn, has published such biocriteria to set these standards.[31]

In addition to the standards for nutrients, toxic substances, and biologic criteria to be achieved in all waters, the VWQS also articulates specific criteria for Class B waters (which is what the Roxbury hatchery discharges into). One such important criteria at issue is the narrative standard for the attainment of ***biological integrity***, which states that there shall be "no change from reference conditions that will have an undue adverse effect on the composition of aquatic biota, the physical or chemical nature of the substrate, or the species composition or propagation of fishes."[32]

4. NPDES Permit Process and the Reasonable Potential Determination Procedures

[25] The VWQS are promulgated triennially under the authority of the VWPCA, as required by 40 C.F.R. § 131.20.

[26] VWQS, §§ 1-03 and 3-04. The inclusion of designated uses, water quality criteria, and anti-degradation provisions are required by EPA regulations. See 40 C.F.R. §§ 131.10, 131.11, and 131.12.

[27] VWQS, § 1-03.

[28] Id. § 3-01.B.2.a and 3-01.B.3.a.

[29] Id. § 3-01.B.10.

[30] Id.

[31] Vermont Department of Environmental Conservation, 2004 Biocriteria for Fish and Macroinvertebrae Assemblages in Vermont Wadeable Streams and Rivers – Implementation Phase (Biocriteria) (Feb. 10. 2004) (as amended) (available at http://www.vtwaterquality.org/bass/docs/bs_wadeablestream2.pdf). The Applicant has asserted that this document is continually updated and used by DEC staff and NPDES applicants to assess the water quality of Vermont streams.

[32] VWQS § 3.04.B.4.d.

Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants into receiving waters, and effluent limits are either based on established technology or a water quality based analysis.[33] The Clean Water Act and Vermont NPDES program require the permitting authority to impose the most restrictive effluent standard, and best professional judgment may be necessary to establish appropriate effluent limitations when no industry or technology specific effluent limitations have been established.[34] When developing effluent limitations for a NPDES permit, the DEC must require compliance with the Clean Water Act, VWPCA, VWPCR, and VWQS.[35]

There are two basic types of NPDES permits, individual and general. An individual permit (which is the type of permit at issue in Roxbury) is a permit specifically tailored to an individual facility. Upon receiving an application, the DEC develops a permit for that facility on the basis of information from the permit application and other sources (*e.g.*, previous permit requirements, discharge monitoring reports, technology and water standards, total maximum daily loads, ambient water quality data, special studies).[36] A NPDES discharge permit must meet or exceed the VWQS and ensure that the discharge does not have the potential to cause or contribute to the impairment of the water quality of the receiving waters.

General Process. DEC will first develop limits based on the technology available to control the pollutants (*i.e.*, technology-based effluent limits). When a numeric effluent limitation has not been established under the VWQS or there is the potential for the discharge to cause or contribute to a violation of the VWQS, the DEC must set a water quality based effluent limitation (also known as "WQBEL").[37] As such, a permit must include, if appropriate, WQBELs and any conditions necessary to "control all pollutants or pollutant parameters…which will cause, have the reasonable potential to cause, or contribute to a violation of a" water quality standard, including state narrative criteria.[38]

Because of this requirement, the State of Vermont refers to the process that a permit writer uses to determinate whether a WQBEL is required in a NPDES permit as a "reasonable potential determination." The Reasonable Potential Determination Procedures are used during the NPDES permit renewal process to determine whether a discharge—alone or in combination with other sources of pollutants to a waterbody and under a set of conditions arrived at by making a series of reasonable assumptions—could lead to an excursion above an applicable water quality standard under the VWQS.[39] The reasonable potential determination must apply not only to numeric criteria, but also to narrative criteria. A permit writer can conduct a reasonable potential determination analysis using effluent and receiving water data and modeling techniques or using a non-quantitative approach. After comparing the WQBELs with technology-based effluent limits, the DEC will choose the more stringent of the two as the effluent limits for the permit.[40]

The DEC then issues the permit to the facility for a specific period not to exceed five years, with a requirement to

[33] U.S. Environmental Protection Agency, National Pollution Discharge Elimination System Permit Writers' Manual, § 3.2 ["NPDES Permit Writers' Manual"] (available at http://www.epa.gov/npdes/pubs/pwm_chapt_03.pdf).

[34] Clean Water Act, § 402(a)(1) (codified as amended at 42 U.S.C. § 1342(a)(1); 40 C.F.R. §§ 122.44; 125.3.

[35] 40 C.F.R. § 122.44(d); NDPES Permit Writers' Manual, § 6.3.

[36] See NPDES Permit Writers' Manual, § 3.1.

[37] 40 C.F.R. § 122.44(d).

[38] 40 C.F.R. § 122.44(d)(1)(i).

[39] See NPDES Permit Writers' Manual, § 6.3.1.

[40] In the application of effluent standards and limitations, water quality standards, and other legally applicable requirements, the Secretary of Natural Resources must specify average and maximum daily quantitative limitations for the level of pollutants in the authorized discharge in terms of weight. She may also specify other limitations, in addition to weight, such as average or maximum concentrated limits for the level of pollutants in the authorized discharge. VWPCR, § 13.4(c).

apply before the expiration date. The VWPCA provides that NPDES discharge renewal permits are subject to the same review as new permits,[41] and the VWPCR provide that the reissuance of discharge permits shall ensure that the discharge is consistent with applicable effluent standards and limitations, water quality standards, and other legally applicable requirements.[42] The VWPCR also requires the DEC to assess and apply state and federal requirements to a renewal permit, including effluent limitations, standards of performance, and any conditions or limitations necessary to meet the VWQS.[43]

Reasonable Potential Determination at the Roxbury Hatchery. The DEC used its draft Reasonable Potential Determination Procedures as part of the renewal of the Roxbury hatchery NPDES permit (although these procedures were not formally adopted at the time of Tropical Storm Irene),[44] which began approximately one year before Tropical Storm Irene. The initial step of the Reasonable Potential Determination Procedures is to assess the biological condition of the receiving water based on upstream-downstream macroinvertebrae sampling and water chemistry testing.

According to the DEC, the water quality monitoring indicated that the biological integrity downstream of the Roxbury hatchery was diminished in comparison to the macroinvertebrae community immediately upstream.[45] This reduction in water quality was attributed to ***phosphorus*** and ***nitrogen***.[46] Based on the monitoring data and the biological condition of the receiving waters, the DEC determined that—in order to meet the VWQS—the effluent discharge treatment system constructed at the hatchery should be designed to meet the limits of 0.053 mg/L phosphorus and 0.30 mg/L nitrogen before discharge to the White River.[47] DEC also performed an analysis using the Reasonable Potential Determination procedures for the toxic substance formalin. Relying upon published studies and EPA guidelines, the DEC determined that an acute formalin effluent limit of 25.8 mg/L and a chronic formalin effluent limit of 9.0 mg/L in the Roxbury hatchery discharge would be sufficient to protect receiving waters from toxicity and meet the VWQS.[48] In its communication of the Reasonable Potential Determination analysis results to the Applicant, the DEC stated that the reconstructed hatchery should be designed such that the effluent can meet the limits for nitrogen, phosphorus, and formalin before discharge into the White River.[49]

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[41] 10 V.S.A. § 1263(e).

[42] VWPCR, § 13.5.

[43] Id. § 13.4.

[44] The Applicant provided several examples of NPDES permits issued under these draft procedures, which included the Manchester Wastewater Treatment Facility in January 2010 and the Pownal Wastewater Treatment Facility in June 2011.

[45] Letter from Neil C. Kamman, Manager of the Monitoring, Assessment, and Planning Division, Vermont Department of Environmental Conservation, to Ron Pentowkski, FEMA Project Specialist (Apr. 3, 2013).

[46] Id.

[47] Letter from Peter LaFlamme, Director of the Watershed Management Division, Vermont Department of Environmental Conservation, to Jeremy Whalen, Vermont Fish and Wildlife Roxbury Fish Culture Station (Jun. 12, 2012) ("A new effluent discharge treatment system constructed at Roxbury should therefore be designed to meet limits of 0.053 mg/L total phosphorus, and 0.30 mg/L total nitrogen prior to discharge to the Third Branch of the White River, and have downstream biological monitoring requirements consistent with Department protocols.").

[48] Id. ("Our data indicates that an acute formalin limit of 25.8 mg/L and a chronic formalin limit of 3.36 mg/L would be necessary effluent limitations for the discharge from the Roxbury hatchery. A new wastewater treatment facility constructed at Roxbury should be designed such that the effluent can meet these limits prior to discharge to the Third Branch of the White River.").

[49] Memorandum from Neil Kamman, Management of the Monitoring, Assessment and Planning Division, Watershed Management Division, to Peter LaFlamme, Director of the Watershed Management Division, Vermont Department of Environmental Conservation *subj: Draft MAPP Evaluation of the Reasonable Potential Determination for the Vermont F&W Roxbury Hatchery* (Apr. 3, 2013).

B. Overview of the Eligibility of Upgrades to the Predisaster Design of a Damaged Facility under the Stafford Act

Section 406(e) of the Stafford Act authorizes FEMA to reimburse the costs of repair and replacement of a facility based on the design of the facility as it existed immediately before the disaster event and in "conformity with current applicable codes, specifications, and standards…"[50] The agency has interpreted the language of Section 406(e) concerning "codes, specifications, and standards" at 44 C.F.R. § 206.226(d). This regulation provides that, in order for a state or local repair or replacement standard[51] which changes the pre-disaster design[52] of a facility to be eligible for Public Assistance, the standard must:

- Apply to the type of repair or restoration required;
- Be appropriate to the predisaster use of the facility;
- Be found reasonable, in writing, and formally adopted and implemented on or before the disaster declaration date;
- Apply uniformly to all similar types of facilities within the jurisdiction; and
- Have been enforced during the time the standard was in effect.

FEMA has offered amplifying guidance concerning 44 C.F.R. § 206.226(d) in FEMA Disaster Assistance Policy ("DAP") No. 9527.4.[53] The DAP states that the five criteria apply to standards that change the predisaster construction of a facility, and that a standard that mandates an ***upgrade*** in addition to repairs ***changes*** the predisaster construction of a facility.[54] Therefore, if FEMA determines that a standard meets all five criteria, the work and associated costs, including any eligible upgrades "triggered" by the standard, will be eligible for funding under Section 406(e) of the Stafford Act.[55] If a standard does not meet the five criteria, standard-mandated upgrades will not be eligible, and FEMA will limit funding to work necessary to bring the facility back to its predisaster design or construction.[56] FEMA DAP No. 9527.4 further states that FEMA does not generally fund standard-mandated work if the standard does not meet the five criteria, even though the work may be required in order to obtain a building, environmental, or other permit.[57]

C. The Vermont NPDES Permit Program Does Not "Apply to the Type of Restoration Required"

A repair or replacement standard which changes the pre-disaster construction of a facility must "apply to the type of restoration required" in accordance with 44 C.F.R. § 206.226(d)(1). In order to meet this criterion, a standard that

[50] Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. No. 93-288, § 406(e)(1) (1974) (codified as amended at 42 U.S.C. § 5172(e)(1)) ["Stafford Act"].

[51] "Standards" means "codes, specifications, and standards required by the construction of facilities." 44 C.F.R. § 206.221(i).

[52] The "predisaster design" is the "size or capacity of a facility as originally designed and constructed or subsequently modified by changes or additional to the original design." It does not mean "the capacity at which the facility was being used at the time of the major disaster occurred if different from the most recent designed capacity." 44 C.F.R. § 206.201(h).

[53] FEMA Disaster Assistance Policy No. 9527.4, *Construction Codes and Standards* (Feb. 5, 2008) ["FEMA DAP No. 9527.4"].

[54] Id. § VII(B)(1)(a).

[55] Id. § VII(B)(1)(b).

[56] Id. § VII(B)(1)(c).

[57] Id. § VII(B)(4).

requires changes or upgrades[58] to a facility must be based on a reasonable and supportable relationship to the elements damaged as a result of the disaster event.[59] The upgrade must also be "triggered" under the standard, meaning that the upgrades are required under the relevant standard because of the disaster damage and/or repair work necessary to repair that damage.[60]

The VWPCA, VWPCR, and VWQS are not construction codes and do not mandate design upgrade requirements for any type or parts of a facility, such as a fish hatchery, waste water treatment plant, or any other facility. Rather, they only require the State to set effluent limitations for discharge from the Roxbury hatchery through the issuance of a NPDES permit—effluent discharge limitations, however, are different and distinct from specific engineering design upgrades or changes under a standard. For example, they do not specifically require upgrades from an open pond fish rearing system to a tank-based system following a certain amount of damage. Because the VWPCA, VWPCR, and VWQS do not require specific design changes or upgrades to a fish hatchery, the new effluent limitations under a NPDES permit do not have a reasonable and supportable relationship to the damaged elements of the hatchery.

The setting of new effluent limitations under the renewed NPDES permit was also not triggered by the damage caused by Tropical Storm Irene. At the time of Irene, the Roxbury hatchery's NPDES permit and corresponding effluent limitations were already in the process of re-evaluation and renewal. Therefore, although the new effluent limitations were ultimately issued after Tropical Storm Irene, they were not "triggered" by the damage caused by Tropical Storm Irene but rather as part of the standard five-year NPDES permit renewal process that started before the incident. Stated differently, the DEC would have set the new effluent limitations irrespective of whether Tropical Storm Irene damaged the facility or not. The Commissioner of DEC confirmed this in a letter to FEMA, in which he stated that "Irene or no Irene, a repermitted Roxbury facility would have been held to the same limitations recently articulated by the [Watershed Management] Division…"[61]

Even if the effluent limitations were not already in the process of being reset before Tropical Storm, the new effluent limitations would still not have been triggered by disaster damage. The Reasonable Potential Determination procedure for the Roxbury hatchery assessed the biological condition of the receiving water based on upstream-downstream macroinvertebrae sampling and water chemistry testing. According to the DEC, the water quality monitoring indicated that the biological integrity downstream of the Roxbury hatchery was diminished in comparison to the macroinvertebrae community immediately upstream, and the DEC set the new effluent discharge limitations based on this conclusion. The more stringent effluent limitations, therefore, resulted from changed environmental and biologic conditions at the site—they did not result from disaster damage to the fish rearing system at the Roxbury hatchery.

The Applicant has asserted that—although the five-year renewal process is the most common mechanism of NPDES permit review and imposition of new permit conditions—there are several other mechanisms for addressing emergency situations and changes in a NPDES discharge or facility that could be triggered by the damage caused by Tropical Storm Irene. Specifically, DEC could revoke[62] the Roxbury hatchery's NPDES permit as a result of the damage caused by Tropical Storm Irene or alternatively issue an administrative order[63] that would, in either case,

[58] An "upgrade" is "work to predisaster design or construction that goes beyond repair." FEMA DAP No. 9527.4, § VII(A)(5).

[59] Id. § VII(C)(1)(a).

[60] Id. § VII(B)(1) and (2).

[61] Letter from David Mears, Commissioner, Vermont Department of Environmental Conservation, to Ron Pentowkski, FEMA Project Specialist (Jun. 13, 2013).

[62] The Applicant stated that the "revocation" of a NPDES permit means that the facility no longer has the authority to discharge to state waters and must cease such discharges. In order to discharge in the future, a facility must apply for and obtain a NPDES permit in accordance with Vermont law, VWPCR, and VWQS.

[63] The Applicant stated that an administrative order may be issued to address any circumstances where a facility "reasonably can be expected to create or cause a violation." Such orders are used to address a variety of circumstances such as site remediation associated with the release of hazardous waste or construction at a site where hazardous waste exists as a result of the actions of another entity, interim operations to address violations associated

trigger the requirement of the Applicant to meet updated effluent limitations and would necessitate the upgrade to the hatchery. Although the DEC has not yet terminated the 2006 permit or issued an administrative order, the DEC has stated that it could take either action to demonstrate to FEMA that the repairs of the damage to the hatchery undoubtedly triggered the reanalysis of the hatchery under NPDES, setting of the new and more stringent effluent limits, and issuance of an updated permit requiring these new limits.

A revocation or an administrative order, however, would not meet the requirement for disaster damage to have triggered the applicable upgrades. First, the decision to issue such a revocation or administrative order is entirely committed to the discretion of the DEC, as the Clean Water Act, VWPCA, VWPCR, and VWQS do not lay out the specific criteria for when such a revocation or administrative order is required. Second, as pointed out above, it is clear that the reanalysis of the effluent limitations of the hatchery began before Tropical Storm Irene, and this cannot be changed through a revocation or order issued over two years after the incident.[64] Third, a revocation or administrative order would not trigger a specific upgrade, it would only trigger a review of the permit (which, in some cases, may not even result in any change to the effluent discharge limitations). Fourth, as stated above, the more stringent effluent limitations were triggered from the change in environmental and biologic conditions at the site of the hatchery—they were not triggered by the disaster damage.

D. The Vermont NDPES Permit Program Does Not "Apply Uniformly to All Similar Types of Facilities" and Was Not "Enforced During the Time It Was in Effect"

The criteria at 44 C.F.R. § 206.226(d)(4) and (5) require that a standard must apply "uniformly" to all similar types of facilities within the jurisdiction and that the standard must have been "enforced" during the time it was in effect.[65] In order for a standard to apply "uniformly" and be consistently "enforced," there can be no discretion in its application. The standard cannot allow selective application and it cannot be subject to discretionary enforcement by public officials.[66]

FEMA has previously interpreted that the intent of these two criteria is to provide measurable engineering and design criteria for which the facility repair or replacement must adhere.[67] To be an eligible standard under these interpretations, the relevant statutes, regulations, and/or other permit regime would need to provide specific engineering design standards or performance criteria that would be required to be followed or measured in order to obtain the appropriate permits within the text of the standard. Conversely, if application decisions are made at the discretion of the permitting authority on a case-by-case basis upon review of each set of plans and specifications submitted by an owner, then this would be a discretionary decision of the permitting authority and not consistent with the expected enforcement of a written standard.[68]

The Applicant has asserted that it is the more stringent effluent limitations for phosphorus, nitrogen, and formalin that results in the need to upgrade the open pond based system at the Roxbury hatchery to tank-based system. These new effluent discharge limitations, however, are not set for all hatcheries in the VWPCA, VWPCR, or VWQS. Rather, the new effluent discharge limitations were set through the Reasonable Potential Determination procedure

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with construction of facility repairs or improvements, and circumstances that have arisen as a result of high flow storm events.

[64] Not only has the DEC not issued a revocation or administrative order, but it has allowed the Roxbury hatchery to continue operating since Tropical Storm Irene.

[65] 44 C.F.R. § 206.226(d)(4) and (5); FEMA DAP No. 9527.4, § VII(C)(4) and (5).

[66] FEMA DAP No. 9527.4, § VII(C)(5)(b).

[67] See Second Appeal Analysis, Alaska Department of Transportation and Public Facilities, Crooked Creek Culvert (Aug. 16, 2005); Letter from Deborah Ingram, Assistant Administrator, FEMA Recovery Directorate, to Mr. Joe Flynn, Vermont Emergency Management *re: Second Appeal – Town of Townshend, PA ID 023-733000-00, Dam Road Culvert Replacement, FEMA 4022-DR-VT, Project Worksheet (PW) 1803* (Mar. 21, 2013)

[68] Id.

(which was not formally adopted by the Applicant at the time of Tropical Storm Irene), under which discharge limit decisions are made at the discretion of DEC on a case-by-case basis upon review of the biologic and environmental conditions of a particular site. This renders it impossible for FEMA to determine whether permitting officials are imposing reasonable requirements, are imposing such requirements in a uniform manner, and whether the requirements were enforced prior to the disaster. If, for example, the VWPCA, VWPCR, or VWQS required that tank based rearing systems be used for all restored hatcheries, then FEMA could evaluate the standard against the five criteria.

E. The Vermont NPDES Permit Program Is Not "Reasonable, in Writing, and Formally Adopted and Implemented"

A standard must be reasonable, in writing, and formally adopted and implemented on or before the disaster declaration date pursuant to 44 C.F.R. § 206.226(d)(3).[69] "Formally adopted and implemented" means that all requisite steps and actions have been taken by the appropriate legislative body or regulatory authority within the jurisdiction.[70] Here, Vermont had adopted the VWPCA, VWPCR, and VWQS before Tropical Storm Irene. However, none of these actually set the effluent limitations at the Roxbury hatchery. The new effluent limitations, rather, were set by using the Reasonable Potential Determination procedure, which the DEC and Applicant have asserted is an important part of the NPDES permit program. This Reasonable Potential Determination procedure, however, was not formally adopted and implemented as of the date of Tropical Storm Irene, but was a draft document. As such, the draft Reasonable Potential Procedures fails to meet the requirement and, by extension, so do the effluent limitations set through that procedure.

A standard must also be "reasonable." FEMA's examination of reasonableness may involve, among other things, whether the thresholds relate to the type of restoration required by the damage.[71] In this case, the threshold for the new effluent limitations under the updated NPDES permit was not disaster damage or the restoration of that damage, but was the five-year renewal process and the biological and environmental conditions at the site. The threshold for reviewing the Roxbury hatchery's NPDES permit, therefore, did not relate to the type of restoration required.

FEMA's reasonable analysis may also involve an examination of the general reasonableness of the standard. Although FEMA has not yet completed its determination of the eligible restorative work for the hatchery, FEMA currently estimates the restoration costs (not including hazard mitigation) at less than $600,000. This means that the Applicant's requested upgrades of approximately $4.4 million would be close to 7 times (or 700%) of the eligible repair work, which does not fall within the meaning of "general reasonableness."

V. Conclusion

The Applicant has asserted that a denial of the Roxbury hatchery scope change request would violate the plain language of FEMA regulations and FEMA policy. Unfortunately, the Applicant's assertion finds no support under the Stafford Act, 44 C.F.R. § 206.226(d), and FEMA DAP No. 9527.4. Specifically, the Vermont NPDES permit program does not meet the five criteria at 44 C.F.R. § 206.226(d) and, therefore, the Applicant's requested upgrades to the predisaster design of the Roxbury hatchery are ineligible for financial assistance under Section 406 of the Stafford Act.

This determination analysis only pertains to the eligibility of the upgrades to the predisaster construction of the hatchery that the Applicant has asserted were required by the Vermont NPDES permit program, and it is not a final determination for the eligible scope of restorative work and funding for this project. FEMA does not normally make a determination as to the eligibility of requested upgrades separately from a determination as to the final eligibility of a project, but has made this determination at the specific request of the Applicant.

[69] 44 C.F.R. § 206.226(d)(3)(i); FEMA DAP No. 9527.4, § VII(C)(3).

[70] FEMA DAP No. 9527.4, § VII(C)(3)(b).

[71] Id. § VII(C)(3)(a).

Public Assistance Determination: ☐**Approved** ☐**Partial** ☒**Denied**

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FEMA-4022-DR
FEMA Region I

Date: March 17, 2014