



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1 - NEW ENGLAND
1 CONGRESS STREET, BOSTON, MA 02114

Portland Records Center
SITE: Centredale
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OTHER: 455647



SDMS DocID 455647

January 27, 2009

Russell E. Keenan, Ph.D.
AMEC Earth & Environmental, Inc.
15 Franklin Street
Portland, ME 04101

Re: Comparative Ecological Assessment Report prepared by AMEC, Inc., dated October 2008,
for the Centredale Manor Restoration Project Superfund Site, North Providence, RI.

Dear Mr. Keenan:

EPA has reviewed the revised Comparative Ecological Assessment Report by AMEC, Inc. on
behalf of Emhart Industries, Inc.

Enclosed please find three sets of comments on the above referenced report, developed by EPA
and our natural resources trustees, Fish and Wildlife Service and National Oceanic and
Atmospheric Administration. These comments, along with the abovementioned report, will be
added to the Administrative Record file for the Site.

Please do not hesitate to contact me with any questions.

Sincerely,

Anna Krasko
Remedial Project Manager

cc: Louis Maccarone, RIDEM



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087
<http://www.fws.gov/northeast/newenglandfieldoffice>

January 23, 2009

Anna Krasko
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100
Boston, MA 02114

Dear Ms. Krasko:

Thank you for the opportunity to review the October 2008 Final Comparative Ecological Assessment Report (CEAR), Centredale Manor Restoration Site, North Providence, Rhode Island, October 2008, prepared by AMEC Earth & Environmental, Inc. for Emhart Industries, Inc. The following comments are provided as part of our Interagency Agreement with EPA for Technical Assistance and under our role as Natural Resource Trustee.

General Comments:

It would be helpful if the report included an Executive Summary.

This document provides a basic understanding of the functions and values of wetland and upland habitats based on a qualitative field survey, previous data and desk-top evaluations, as intended. However, much of the uncertainty, relative to wetland/terrestrial habitat usage, lies in a lack of quantitative information that could have been gathered since 2006 and during migration and breeding periods of site-specific biota. Bird, amphibian, and reptile surveys could have been conducted to bolster the study area species occurrence data which may be especially important for Greatest Conservation Need (GCN) or state-listed species and migratory bird impact assessment. This may be necessary prior to remedial initiation, if mitigation for loss of habitat is required or impacts to significant species are confirmed or suspected.

AMEC presents a qualitative description of current habitat conditions and existing/potential wildlife in the main impoundments and reaches of the site. However, a detailed habitat map would provide useful spatial information on existing habitat types, approximate acreages or proportions of each habitat type, and their distribution throughout the study area. Alternate maps could then be created to depict habitat changes that might result from each specific remedial alternative proposed. At this juncture, we would recommend that an addendum be released with these maps. Maps should be color-coded with appropriate legends describing habitat types. Informational inset text boxes could

include approximate acreages per cover type within each impoundment and other pertinent information. Text provided in Section 5 does a reasonable job of qualitatively describing potential changes in habitat types and assemblages per alternative.

AMEC focuses on the Rhode Island Department of Environmental Management's (RIDEM) GCN species from the state's Comprehensive Wildlife Conservation Strategy (CWCS) when evaluating habitat types. This is a worthy exercise which provides information on whether study area habitat is likely to support GCN species. However, habitat quality and quantity greatly influence the presence or potential presence of many of the GCN species and this is not considered consistently.

Habitat types [i.e., Forested Deciduous Red Maple Swamp (FOBMA)] are not consistently described relative to RIDEM's CWCS threats/concerns or respective management actions. It is not clear if AMEC has contacted or consulted with RIDEM's Division of Fish and Wildlife (DFW) concerning current habitat conditions and potential habitat alterations linked to remedial actions, relative to potential impacts or enhancements to state wildlife/fishery resources. We suggest that Rhode Island wildlife/fisheries biologists familiar with the CWCS and the Woonasquatucket watershed be asked to review the proposed remedial actions.

AMEC profiles site-specific habitat types and discusses general characteristics for these habitat types within Rhode Island. It would have been more useful to limit descriptions to site-specific habitat conditions and species occurrences, rather than non-pertinent generic conditions and potential species occurrence.

Section-specific comments:

Section 3.1.1.5: River Upper Perennial (RUP): It should be noted that both rainbow trout and brown trout are stocked annually in the Woonasquatucket Reservoir and Sylvester Pond in North Smithfield, according to DFW. This stocked fishery is usually depleted annually, with few holdovers. It is unlikely that significant numbers of these species exist in lower river areas, as indicated, unless downriver transport over a series of dams has occurred during high water events. Native brook trout may also exist but only in small, scattered, remnant populations in coldwater, well-oxygenated and unpolluted sections of the river. This information could be described in Appendix D- Fisheries.

According to Ray Hartenstine, the co-author of the Status of Freshwater Mussels in Rhode Island (Northeastern Naturalist 2006), there have been no confirmed observations of GCN species in RUP or River Lower Perennial (RLP) habitats in the Woonasquatucket River. Furthermore, GCN species presence is unlikely due to water quality issues and historical segregation due to dams. The Eastern elliptio (*Elliptio complanata*), a highly tolerant generalist mussel species, is present above and below the Rising Sun Dam and in the Woonasquatucket Reservoir. The Asiatic clam (*Corbicula sp.*) has also been found below and just above the Rising Sun Dam.

Section 3.1.1.5 (this section number is repeated twice): River Lower Perennial: A current status should be provided in this section or elsewhere for context on fish passage for the river. RIDEM, Natural Resources Conservation Service (NRCS), Woonasquatucket River Watershed Council

(WRWC), Coastal Resources Management Council (CRMC), NOAA Restoration Center, and the U.S. Fish and Wildlife Service (USFWS) are all actively working together to remove dams or create fish passage in the lower river. NOAA, USFWS and others are also providing funding for various phases of fish passage. The current status of dams in downriver to upriver order are as follows: Rising Sun - fish ladder installed spring 2008; Paragon - due to be removed summer 2009; Atlantic Mills - fish ladder is currently being constructed with completion by spring 2009; Dyerville - probable removal by spring 2009; Manton - in planning stage now with fish passage potential by 2010; Lyman Mills and Allendale - as presented, NPL remedial options exist for removal or potential fish passage in the future. Fish ladders at Rising Sun and Atlantic Mills are designed for both river herring (alewife and blueback) and American shad passage. Eelways for American eel passage are also being constructed at Rising Sun and Atlantic Mills Dams. Alewives were stocked above the Atlantic Mills Dam in 2008, will be stocked again in 2009 and potentially through 2014. Currently, no anadromous fish should be found upstream of the Manton Dam, except potentially American eel. Large amounts of time, effort and funding are being funneled into accomplishing riverine restoration of the Woonasquatucket corridor by state, federal and local agencies, non-governmental organizations, and private landowners, with anadromous fish passage as a pivotal component. We suggest that NRCS be contacted regarding dam removal options at Lyman Mill and Allendale. NRCS will be able to provide valuable insight into the process and benefits of dam removal on the lower river and how this restoration activity could be continued in the upper river. Andy Lipsky, who can be reached at telephone number 401-822-8842, is the lead biologist for NRCS on Woonasquatucket River dam removal/fish passage initiatives.

Table C-1: The term GCN should be defined. True frogs and woodland salamanders should be denoted as expected to utilize Mixed Forest Deciduous (MFD) habitat. It is unclear if this table is meant to project potential presence of anadromous species if fish passage is attained via dam removal or just observed/expected presence under present conditions. No anadromous fish should be expected in RUP habitat at this point in time based on current fish passage status. American eel and alewife should be included as a GCN in all instances of occurrence. Alewives are pond and lake spawners and therefore could be included in Lacustrine Eutrophic Lake/Pond (LE) habitat if fish passage is assumed. These issues should be clarified and consistently portrayed with regard to anadromous fish inclusion in the table. Some freshwater fish species included in this table may be expected to occur on-site based on general life history characteristics and site habitat conditions, but in many cases probably will not be present due to a lack of historical presence. This probably is true for some of the other biota listed as well, which leads to a biased overestimate of habitat potential in the study area. Conversely, bird species presented in the table represent a varied cross-section of species potentially associated with the site; but, in many cases, we would expect utilization of certain habitat types by greater numbers of species than is stated, either during migration or breeding periods. As mentioned previously, site-specific bird presence and habitat usage per habitat category could have been more accurately defined with bird surveys in 2007-2008. State wildlife and fisheries biologists should be able to provide insight into these issues as well. Both American eel and, more surprisingly, alewife are noted as occurring in Allendale Pond, based on previous survey data. We are interested to know when this data was collected and if it was reported to DFW biologists. There should be some method to describe observed and expected presence and GCN status for each species and category.

Section 3.1.3: It should be noted that removal of the impoundments has the potential to significantly increase wetland habitat, as well as the capacity to provide flood protection in the Allendale and Lyman Mill areas. Additionally, this may decrease flood probabilities and federal flood insurance rates for adjacent landowners. This may act as additional incentive for dam removal for the towns and area landowners. This is also supported by the hydrodynamic modeling data, as presented in Tables 4.2 and 4.3.

Table 4.1: Habitat categories, notably Emergent Marsh Shallow/Wet Meadow (EMAS) and Shrub Swamp Water Willow (SSAD), could increase under Alternatives 1, 2, and 3. As discussed and presented at a previous meeting by the Responsible Party (RP), the potential habitat types created post-removal for the dewatered impounded areas could be wide-ranging. Wet meadows, shallow pools, wetland scrub-shrub habitat, etc., could be created in a variety of mosaics across the former impounded areas if the dams are removed. Alternative 4 presents the only situation where options for habitat alteration will be rather limited and similar to existing conditions, as presented.

Section 5: As previously mentioned, this section presents an adequate qualitative overview of potential habitat and fish and wildlife changes for each alternative. There should also be discussion of potential impacts or habitat changes in the Oxbow area and forested floodplain, downstream of Allendale and Lyman Mill, respectively, if dam removal occurs. Substantial amounts of sediment are likely to be distributed in areas downstream of the impoundments once dams are removed or replaced with weirs. Sediment volume estimates and dispersal distances could be modeled and presented prior to alternative selection. Substantial sediment transport into these downstream areas may alter habitat functions and values and should also be discussed.

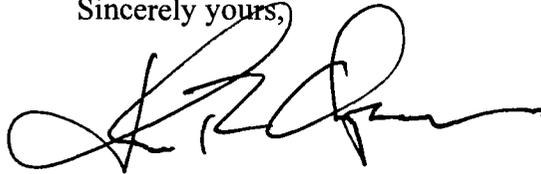
Appendix D: The following are inconsistencies between the text and Table C-1: crappie: white crappie is not included on Table C-1 but was collected in Lyman Mill; yellow bullhead: denoted as present in the text but absent from Table C-1; largemouth bass: the text states that smallmouth bass were found in Lyman Mill Pond but Table C-1 denotes largemouth bass are expected; rainbow trout: stated as not detected during fishery survey but denoted as detected in Allendale Pond (AP) in Table C-1; alewife: denoted as found in AP. It is uncertain why alewives would be present in AP, as indicated, based on downstream dams which are effective fish passage barriers. It is possible that independent fish stocking has occurred in upriver sections, but DFW has not stocked alewives above the Dyerville Dam. Additionally, alewives should out-migrate each year and consistent upriver presence would only be possible with annual stocking. Hickory shad may be present in RLP, but this species typically does not migrate up small freshwater systems and would not be found in RUP in the future. Inclusion of profiles for Atlantic salmon, Atlantic sturgeon and shortnose sturgeon are probably unnecessary, since it is highly unlikely that these species will ever use the site-affected area in the future.

Mitigation for loss of current habitat, especially if it significantly affects state-listed species or migratory birds or fish, may be warranted, dependent upon the remedial alternative selected, and should be discussed.

In conclusion, the Centredale NPL site has great promise for fitting into the larger picture of a restored and healthier Woonasquatucket River. We realize that remediation of CERCLA contaminants cannot encompass all aspects of river restoration, but some remedial options have high potential for accomplishing a comprehensive clean-up and restoration that will compliment downstream efforts and the greater WRWC's Greenway Project. This document describes some of the potential remedial options and their outcomes relative to fish and wildlife functions and values. We recommend the above changes and additions to strengthen the report. We look forward to continued discussions regarding the remedial and restoration options for the river, and issuing of the first draft of the Feasibility Study in spring 2009.

For further comments or questions concerning our comments, please contact Kenneth Munney at 603-223-2541, extension 19, or email kenneth_munney@fws.gov.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'T. Chapman', with a large, stylized flourish at the end.

Thomas R. Chapman
Supervisor
New England Field Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1 NEW ENGLAND
ONE CONGRESS STREET, SUITE 1100
BOSTON, MA 02114-2023

Memorandum

Date: December 5, 2008

From: Cornell Rosiu, Environmental Scientist *CR*
OSRR/ Technical Support and Site Assessment Section

To: Anna Krasko, EPA Remedial Project Manager
OSRR/ RI & NH Superfund Section

Subj: Comments on the October 2008 *Final Comparative Ecological Assessment Report*,
Centredale Manor Restoration Project Superfund Site, North Providence, RI.

Thank you for requesting a review of the subject report that compares four proposed alternatives for clean up of contaminated sediment in the Woonasquatucket River based on current and future natural resources. Comments are restricted to new material (text, tables and appendix). If revisions are made to the narrative, please request that the changes are identified somehow. If you have any questions, please contact me at 617-918-1345.

GENERAL COMMENTS

The report is overall improved from the earlier version however some of the new material content needs revision (see specific comments below). Moreover, it is recommended that Federal trustee agencies are allowed to review it due in part to the new content (e.g., Appendix C, Table 4-1).

The report addresses EPA comments on the previous version. In some cases the narrative is much improved (new or re-organized) to the benefit of the reader. For example, Section 3.1.1.5 (new) and moving the detailed fisheries data to Appendix D works to achieve the primary objective of conveying "basis understanding of the existing functions and values of the various habitats and ecological communities." The revision and reorganization of Section 5 works to achieve the secondary objective of providing "basis for comparing and contrasting the existing functions and values of the various habitats and ecological communities."

The report is by no means perfect, however. The new content has typos, editorial and grammatical errors, and several references are missing in Section 7. The Table of Contents has obvious errors font size and type. A thorough editorial review and spell check would help it achieve its objectives.

SPECIFIC COMMENTS

1. Page i, Table of Contents:
§3.1.2, 3.1.3, 3.1.4 and 3.1.5 need revisions of font size, style and tabs.

2. Page 1, §1.0 Introduction:

Consider adding to the end of the section a “disclaimer” (for lack of a better word) like ¶2 on page 37 to raise its visibility and so the reader understands upfront the uncertainties and limitations of the assessment. For example from ¶2 on page 37, “detailed engineering and design of the dam removal options have not been conducted. As a result, the comparative ecological assessment is based on conceptual methods of the dam removal options and a qualitative assessment of probable outcomes from implementation of the alternatives.”

3. Page 2, §1.1 Site Setting, 4th and 5th ¶s:

Check the accuracy of citations within the narrative of the report “MACTEC 2004, RIDEM 2001 and USACOE 2007” as they are missing in §7.0 (References).

4. Page 22, §3.1.1.5 River Upper Perennial (RUP):

Additional content is needed from Cowardin et al. (1979) and Normandeau Associates, Inc (2002a, 2002b) as follows.

In ¶5 on pg. 22, consider revising the 1st and 2nd sentences to “Upper perennial streams have relatively steep gradients with very little floodplain development and well-defined riffles and pools” and “water flow is constant, fast, and turbulent and water temperature is normally cold and natural dissolved oxygen concentrations near saturation.”

Add a new ¶6 on pg. 22, such as:

“Normandeau Associates, Inc. (2002a) describes the upper portion of the upper segment (aka Allendale Pond Reach adjacent to and upstream of the Source Area) in 2001 as approximately 10% riffle and 90% run habitat, 1 to 2 feet deep, coarse substrate comprised of boulders, cobble and sand, with current velocity 1 to 2 feet per second, and cover provided by overhanging trees. The middle segment (aka Lyman Mill Pond Reach adjacent to the Oxbow Area) is described as 75% riffle and 25% run habitat, a cobble, sand and gravel substrate with depths between 1 to 2 feet, off stream overhead canopy cover, and current velocities between 1 to 2 feet per second. The lower segment (aka Manton Pond and Dyerville Reaches) is similar to the middle segment (Normandeau Associates Inc. 2002a).”

The current ¶7 on pg. 22 that begins, “The Federal classification...” is okay as is.

The current ¶2 on pg. 23 that begins, “RIDEM (2005) identifies...” is okay except insert common name “Eastern pearlshell” before *Margaritifera margaritifera* under the heading “Mollusks.”

Delete the current ¶3 on pg. 23 that begins, “Based on the observations of the site visit...” because it contradicts site-specific data (Normandeau Associates 2002a) and species profiles for Atlantic salmon in U.S. Fish and Wildlife Service 1994. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates. U.S. Fish Wildlife Service, FWS/OBS-82/11 and U.S. Army Corps of Engineers, TR-EL-82-4.

Delete the current ¶4 on pg. 23 that begins, “Appendix C presents a list...” and replace it with the two new ¶s below.

Insert the following for example as new ¶3 and ¶4 on pg. 23:

“Based on the results of the 2001 fish community survey, the upper segment provides habitat for American eel, brown bullhead, tessellated darter, and white sucker (Normandeau Associated Inc. 2002a). The middle and lower segments in 2001 contained eight species some of which are commonly collected in shallow, fast moving streams: American eel, brown bullhead, tessellated darter, golden shiner, juvenile bluegill, chain pickerel, white sucker, and largemouth bass. Additionally in 2001 during an ichthyoplankton survey, small schools of larval spottail shiner and white sucker were observed and sampled in the Allendale Tailrace Reach near its confluence with the river (Normandeau 2002b).”

“Rainbow trout are stocked in the upstream portion of the upper segment and have been caught in fish community surveys of Greystone Mill Pond (unlabeled impoundment at the top of Figures 1 and 2). Normandeau Associates Inc. (2002a) considered the presence of healthy rainbow trout in this Pond in 2001 as good indication that the river offers habitat to support cold water salmonids such as rainbow trout. Riverine habitat upstream of the upper segment is 50% riffle and 50% run habitat (Normandeau Associates Inc. 2002a) and has a larger biomass of fish eggs and fish larvae than the upper, middle or lower segments (Normandeau Associates Inc. 2002b). It is important to note that the river upstream of Greystone Mill Pond Dam serves as a receiving water body for a municipal WWTP effluent (Battelle 2004, 2005).”

5. Page 33, Table 4-1 in §4.0 Summary of Remedial Alternatives:

It is recommended that Federal trustee agencies have an opportunity to review and comment on this table which is new material content and may have bearing on the site remediation and restoration.

6. Page 48, §7.0 References:

“MACTEC 2004, RIDEM 2001 and USACOE 2007” are named in the narrative but are missing. In addition, §7 lists “Erkan, D.E. 2002” and “USEPA (1993)” but they are not cited in the narrative and so they can be deleted if this is confirmed.

7. Appendix C:

This reviewer has a difference of opinion of wildlife species designed “2 = Expected to utilize the habitat type” or “3 = Observed in previous studies.” For example, tree swallow bufflehead, great egret, toads and frogs, white sucker, yellow and brown bullhead, American eel, fallfish, alewife, and blueback herring have been observed in previous studies the Woonasquatucket River or Ponds.

It is recommended that Federal trustee agencies have an opportunity to review and comment on this appendix which is new material content and may have bearing on site remediation and restoration.



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Admin.
National Ocean Service
Office of Response and Restoration
Assessment and Restoration Division
c/o EPA Office of Site Remediation and Restoration (HIO)
1 Congress Street
Boston, MA 02114
11 December 2008

Ms. Anna Krasko
U.S. Environmental Protection Agency
1 Congress Street
Boston, MA 02214

JAN 26 2009

Dear Anna:

Thank-you for the (Final) Comparative Ecological Assessment Report, Centredale Manor Restoration Project Superfund Site, North Providence, RI, dated 13 October 2008 by AMEC. The report is well organized and easy to follow.

NOAA's principal interest is the removal of contaminants that are potentially injuring aquatic habitat and the restoration of the river to allow anadromous fish migration.

Comments provided below:

1. Section 1.2: Change last sentence on Page 5 to "and potentially restoring anadromous fish passage."
2. Section 4.0: Alternative #2 discusses excavation of the ponds and subsequent grading. It would be helpful to clarify what this grading means. Would it include a cover of 6 inches (or more) of clean fill similar to Alternative #4?
3. Section 4.0: Is 2.15 feet and 2.65 feet of removal from Allandale and Lyman Mill Ponds, respectively, enough to remove the most highly contaminated material?
4. Table 4-1: The habitat types are shown as acronyms. They should be defined here rather than forcing the reader to go to Table C-1.
5. Section 5.2: I am not convinced that alewife could not migrate upstream past the weirs. This suggestion that they might not is certainly up for debate and unknown until the remedy, if selected, was completed and, of course, if alewife were able to pass the downstream dams.

Please let me know if you or later AMEC would like further discussion concerning these comments.

Sincerely,

Ken Finkelstein, Ph.D.

CC: Cornell Rosiu (EPA)
Ken Munney (USF&WS)