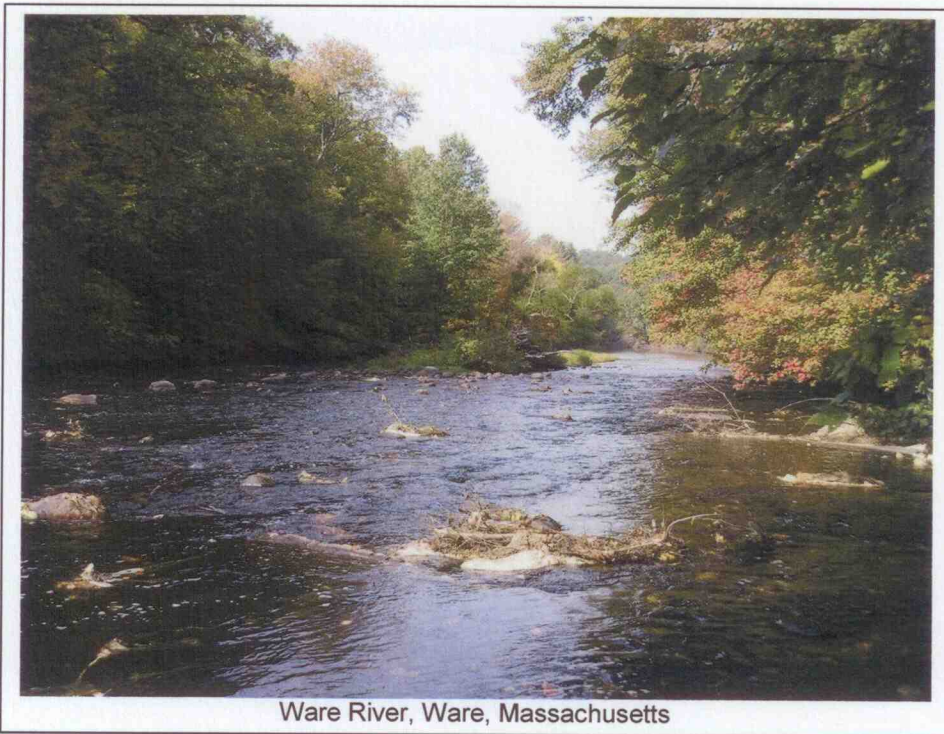


CHICOPEE RIVER WATERSHED 2003 WATER QUALITY ASSESSMENT REPORT



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
IAN BOWLES, SECRETARY
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
LAURIE BURT, COMMISSIONER
BUREAU OF RESOURCE PROTECTION
GLENN HAAS, ACTING ASSISTANT COMMISSIONER
DIVISION OF WATERSHED MANAGEMENT
GLENN HAAS, DIRECTOR



NOTICE OF AVAILABILITY

LIMITED COPIES OF THIS REPORT ARE AVAILABLE AT NO COST BY WRITTEN REQUEST TO:

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATERSHED MANAGEMENT
627 MAIN STREET
WORCESTER, MA 01608

This report is also available from the Massachusetts Department of Environmental Protection (MassDEP's) home page on the World Wide Web at:

<http://www.mass.gov/dep/water/resources/wqassess.htm#wqar>

Furthermore, at the time of first printing, eight copies of each report published by this office are submitted to the State Library at the State House in Boston; these copies are subsequently distributed as follows:

- On shelf; retained at the State Library (two copies);
- Microfilmed retained at the State Library;
- Delivered to the Boston Public Library at Copley Square;
- Delivered to the Worcester Public Library;
- Delivered to the Springfield Public Library;
- Delivered to the University Library at UMass, Amherst;
- Delivered to the Library of Congress in Washington, D.C.

Moreover, this wide circulation is augmented by inter-library loans from the above-listed libraries. For example a resident in Bridgewater can apply at their local library for loan of any MA DEP/Division of Watershed Management (DWM) report from the Worcester Public Library.

A complete list of reports published since 1963 is updated annually and printed in July. This report, entitled, "Publications of the Massachusetts Division of Watershed Management – Watershed Planning Program, 1963-(current year)", is also available by writing to the DWM in Worcester.

DISCLAIMER

References to trade names, commercial products, manufacturers, or distributors in this report constituted neither endorsement nor recommendations by the Division of Watershed Management for use.

CHICOPEE RIVER WATERSHED
2003 WATER QUALITY ASSESSMENT REPORT

Prepared by
Matthew Reardon

Massachusetts Department of Environmental Protection
Division of Watershed Management

Report Number:

36-AC-3

DWM Control Number:

CN 106.5

Massachusetts Department of Environmental Protection
Division of Watershed Management
Worcester, Massachusetts

OCTOBER 2008

ACKNOWLEDGEMENTS

Coordination of local, state and federal agencies and private organizations is fundamental to the success of the Massachusetts watershed management approach.

Data and information used in this report was provided in part by the following agencies and organizations.

State

- Massachusetts Department of Environmental Protection (MassDEP)
 - Bureau of Strategic Policy and Technology, Wall Experiment Station (WES)
 - Bureau of Resource Protection (BRP)
 - Bureau of Waste Prevention (BWP)
 - Bureau of Waste Site Cleanup (BWSC)
- Massachusetts Department of Public Health (MDPH)
- Massachusetts Department of Fish and Game (MassWildlife)
 - Division of Fisheries and Wildlife (MDFW)
- Massachusetts Department of Conservation and Recreation (MA DCR)

Federal

- United States Environmental Protection Agency (EPA)
- United States Geological Survey (USGS)
 - Water Resources Division

Much appreciation is extended to the many MassDEP employees for their contributions: Therese Beaudoin, Warren Kimball, Alice Rojko, Kenneth Dominick, Jane Ryder, Laurie Kennedy, Susan Connors and Rick McVoy and Arthur Screpetis.

It is impossible to thanks all those who helped in the assessment process and all their contributions are appreciated.

Cover Photo Credit: Ware River – Therese Beaudoin, MassDEP

Table of Contents

Table of Contents	i
List of Appendices	iii
List of Figures	iii
List of Acronyms and Abbreviations	iii
List of Units	iv
Table of Fish Scientific Names	iv
Executive Summary	v
Chicopee River Basin Description	1
The Swift River Subbasin	5
Cadwell Creek (Segment MA36-29)	6
Atherton Brook (Segment MA36-30)	8
West Branch Swift River (Segment MA36-31)	10
Hop Brook (Segment MA36-32)	11
Middle Branch Swift River (Segment MA36-33)	12
West Branch Fever Brook (Segment MA36-34)	13
East Branch Swift River (Segment MA36-35)	14
Swift River (Segment MA36-09)	17
Swift River (Segment 36-10)	20
The Ware River Subbasin	23
East Branch Ware River (Segment MA36-01)	24
West Branch Ware River (Segment MA36-02)	26
Canesto Brook (Segment MA36-36)	27
Burnshirt River (Segment MA36-37)	28
Ware River (Segment MA36-27)	30
Ware River (Segment MA36-03)	32
Ware River (Segment MA36-04)	35
Prince River (Segment MA36-08)	38
Ware River (Segment MA36-05)	40
Ware River (Segment MA36-06)	43
Ware River (Segment MA36-07)	46
Quaboag River Subbasin	49
Sevenmile River (Segment MA36-11)	50
Cranberry River (Segment MA36-20)	54
Sevenmile River (Segment MA36-12)	57
East Brookfield River (Segment MA36-13)	59
Quaboag River (Segment MA36-14)	62
Forget-Me-Not-Brook (Segment MA36-18)	65
Forget-Me-Not-Brook (Segment MA36-28)	67
Dunn Brook (Segment MA36-19)	70
Quaboag River (Segment MA36-15)	72
Quaboag River (Segment MA36-16)	75
Quaboag River (Segment MA36-17)	78
Chicopee Brook (Segment MA36-21)	81
Chicopee River Subbasin	83
Chicopee River (Segment MA36-22)	84
Chicopee River (Segment MA36-23)	87
Calkins Brook (Segment MA36-26)	90
Chicopee River (Segment MA36-24)	91
Higher Brook (Segment MA36-42)	95
Fuller Brook (Segment MA36-41)	97
Unnamed tributary to the Chicopee River (Segment MA36-39)	100
Cooley Brook (Segment MA36-38)	103
Chicopee River (Segment MA36-25)	106
Abbey Brook (Segment MA36-40)	110

Chicopee River Watershed - Lake Assessments	113
Swift River Subbasin Lakes.....	115
Gaston Pond (Segment MA36065)	115
Pottapaug Pond (Segment MA36125)	116
Quabbin Reservoir (Segment MA36129)	118
Ware River Subbasin Lakes	122
Beaver Lake (Segment MA36010)	122
Bickford Pond (Segment MA36015)	123
Brigham Pond (Segment MA36020)	124
Demond Pond (Segment MA36051)	125
Forest Lake (Segment MA36063)	126
Hardwick Pond (Segment MA36066)	127
Long Pond (Segment MA36082)	128
Mare Meadow Reservoir (Segment MA36090)	129
Mare Meadow Reservoir North (Segment MA36178)	130
Moosehorn Pond (Segment MA36097)	131
Moulton Pond (Segment MA36098)	132
Perry Hill Pond (Segment MA36122)	133
Thompson Lake (Segment MA36154)	134
Quaboag River Subbasin Lakes.....	135
Brooks Pond (Segment MA36023).....	135
Browning Pond (Segment MA36025).....	137
Comins Pond (Segment MA36037).....	138
Conant Brook Reservoir (Segment MA36038).....	139
Dean Pond (Segment MA36049)	141
Dean Pond (Segment MA36050)	142
Doane Pond (Segment MA36054)	143
Horse Pond (Segment MA36072)	144
Lake Lashaway (Segment MA36079)	145
Palmer Reservoir (Segment MA36115)	147
Quaboag Pond (Segment MA36130)	148
Quacumquasit Pond (Segment MA36131).....	151
Sugden Reservoir (Segment MA36150)	154
Thompsons Pond (Segment MA36155)	155
Turkey Hill Pond (Segment MA36157).....	156
Wickaboag Pond (Segment MA36166)	157
Chicopee River Subbasin Lakes	159
Chicopee Reservoir (Segment MA36033).....	159
Dimmock Pond (Segment MA36053).....	160
Fivemile Pond (Segment MA36061)	161
Fivemile Pond South (Segment MA36182)	162
Long Pond (Segment MA36083)	163
Long Pond (Segment MA36083)	163
Lake Lorraine (Segment MA36084)	164
Minechoag Pond (Segment MA36093)	166
Mona Lake (Segment MA36094).....	167
Spectacle Pond (Segment MA36142)	168
Springfield Reservoir (Segment MA36145).....	169
References	170

List of Appendices

Appendix A	Assessment Methodology for Evaluating Designated Use Status of Massachusetts Surface Waters.....	A1
Appendix B	Chicopee River Watershed 2003 Water Quality Technical Memorandum (TM36-3)	B1
Appendix C	DWM 2003 Lakes Survey Data in the Chicopee River Watershed	C1
Appendix D	Summary of NPDES Permitting Information- Chicopee River Watershed	D1
Appendix E	Summary WMA Permitting Information in the Chicopee River Watershed	E1

List of Figures

Figure 1:	Chicopee River Basin <i>Aquatic Life Use</i> Summary.....	ix
Figure 2:	Chicopee River Basin <i>Fish Consumption Use</i> Assessment Summary.....	xi
Figure 3:	Chicopee River Basin <i>Primary Contact Recreational Use</i> Assessment Summary.....	xiii
Figure 4:	Chicopee River Basin <i>Secondary Contact Recreation Use</i> Assessment Summary.....	xv
Figure 5:	Chicopee River Basin <i>Aesthetics Use</i> Assessment Summary	xvii
Figure 6:	Chicopee River Basin - River Segments and Lake Segments.....	3
Figure 7:	Swift River Subbasin	5
Figure 8:	Ware River Subbasin	23
Figure 9:	Quaboag River Subbasin	49
Figure 10:	Chicopee River Subbasin.....	83

List of Acronyms and Abbreviations

7Q10'.....Lowest mean flow for seven consecutive days to be expected once in ten years	MDL..... Method Detection Limit
ACOE Army Corps of Engineers	MWRA..... Massachusetts Water Resources Authority
ADB.....Assessment Database	NOAA.....National Oceanic and Atmospheric Administration
BRP.....Bureau of Resource Protection	NPDES..... National Pollutant Discharge Elimination System
BMP.....Best Management Practices	PALIS..... Pond and Lake Information System
BOD.....Biological Oxygen Demand	PCB..... Polychlorinated Biphenyl
BWSC.....Bureau of Waste Site Cleanup	QAPP..... Quality Assurance Project Plan
CERO..... Central Environmental Regional Office	RBP..... Rapid Bioassessment Protocol
C-NOEC.....Chronic No Observe Effect Concentration	SARIS..... Stream and River Inventory System
CSO..... Combined Sewer Overflow	SMART..... Strategic Monitoring and Assessment for River Basin Teams
DO.....Dissolved Oxygen	SRF..... State Revolving Fund
EOEA.....Executive Office of Environmental Affairs	SWQS..... Surface Water Quality Standards
EPA.....United States Environmental Protection Agency	TMDL..... Total Maximum Daily Load
FERC.....Federal Energy Regulatory Commission	TOXTD..... MassDEP DWM Toxicity Testing Database
LC ₅₀Lethal concentration to 50% of the test organisms	TRC..... Total Residual Chlorine
MA DCR Massachusetts Department of Conservation and Recreation.	TSS..... Total Suspended Solids
MassDEP.....Massachusetts Department of Environmental Protection	USFWS..... United States Fish and Wildlife Service
MA DFG.....Department of Fish and Game (formerly the Department of Fisheries, Wildlife and Environmental Law Enforcement)	USGS..... United States Geological Survey
MA DPH.....Massachusetts Department of Public Health	WBID..... Waterbody Identification Code
MDC Metropolitan District Commission	WBS..... Waterbody System Database
	WMA..... Water Management Act
	WWTP..... Wastewater treatment plant

List of Units

cfs	cubic feet per second
cfu.....	colony forming unit
MGD	million gallons per day
mg/L	milligram per liter
NTU	nephelometric turbidity units
ppm	parts per million
SU	standard units
µS/cm.....	microsiemens per centimeter
µg/g	microgram per gram
kg/ha/year	kilogram per hectare per year

Table of Fish Scientific Names

Common name	Scientific name	Common name	Scientific name
Alewife	<i>Alosa pseudoharengus</i>	Largemouth bass	<i>Micropterus salmoides</i>
American Eel	<i>Anguilla rostrata</i>	Longnose dace	<i>Rhinichthys cataractae</i>
Black crappie	<i>Pomoxis nigromaculatus</i>	Northern pike	<i>Esox lucius</i>
Eastern blacknose dace	<i>Rhinichthys atratulus</i>	Pumpkinseed	<i>Lepomis gibbosus</i>
Banded Sunfish	<i>Enneacanthus obesus</i>	Rainbow trout	<i>Oncorhynchus mykiss</i>
Bluegill	<i>Lepomis macrochirus</i>	Redbreasted Sunfish	<i>Lepomis auritus</i>
Brook trout	<i>Salvelinus fontinalis</i>	Redfin x Chain Pickerel	<i>Esox americanus x niger</i>
Brown bullhead	<i>Ameiurus nebulosus</i>	Rock bass	<i>Ambloplites rupestris</i>
Brown trout	<i>Salmo trutta</i>	Smallmouth Bass	<i>Micropterus dolomieu</i>
Chain pickerel	<i>Esox niger</i>	Tesselated Darter	<i>Etheostoma olmstedii</i>
Common Shiner	<i>Luxilus cornutus</i>	Tadpole Madtom	<i>Noturus gyrinus</i>
Creek Chubsucker	<i>Erimyzon oblongus</i>	Yellow Bullhead	<i>Ameiurus natalis</i>
Fallfish	<i>Semotilus corporalis</i>	Yellow Perch	<i>Perca flavens</i>
Golden shiner	<i>Notemigonus crysoleucas</i>	White sucker	<i>Catostomus commersonii</i>

Executive Summary

This assessment report presents a summary of current water quality data and information used to assess the status of the designated uses as defined in the Massachusetts Surface Water Quality Standards (SWQS) for the Chicopee River Watershed for reporting to EPA in the Integrated List of Waters, updates the assessments from the 1998 Water Quality Assessment Report (Mass DEP 2001), and provides basic information that can be used to focus resource protection and remediation activities later in the watershed management planning process.

The SWQS designate the most sensitive uses for which surface waters in the Commonwealth shall be protected. The designated uses, where applicable, include: *Aquatic Life, Fish Consumption, Drinking Water, Shellfish Harvesting, Primary and Secondary Contact Recreation and Aesthetics*. The assessment of current water quality conditions provides a determination of whether or not each designated use of a particular water body is **supported or impaired**. When too little current data/information exist or quality-assured data are unavailable, the use is **not assessed**. However, if there is some indication of water quality impairment, which is not considered to be naturally occurring, the use is identified with an "Alert Status". It is important to note that many lakes and river miles do not have an assigned assessment segment and the status of the designated uses of these unassessed waters has never been reported to the EPA in the Commonwealth's Summary of Water Quality Report (305(b) Report) nor is information on these waters maintained by the Massachusetts Department of Environmental Protection in the Water Body System (WBS) or Assessment Database (ADB).

In 2003 the Massachusetts Department of Environmental Protection (MassDEP), Division of Watershed Management (DWM), conducted water quality sampling and baseline lakes sampling, in the Chicopee River Watershed under Environmental Protection Agency (EPA) approved Quality Assurance Project Plans (QAPPs). The water quality monitoring data are available in a technical memorandum (DeCesare 2006, Appendix B). The lakes data are available in the technical memorandum entitled *Baseline Lakes 2003 Technical Memo* (MassDEP 2007a, Appendix C).

The data generated by DWM, together with other sources of information, were utilized to assess the status of water quality conditions of rivers and lakes in the Chicopee River Watershed in accordance with EPA's and MassDEP's use assessment methods. It is important to note that assessment methodologies have changed over time and a direct comparison between current and previous assessments of this watershed is not possible.

This report includes information on 29 freshwater rivers, stream or brooks (the term "rivers will hereafter be used to include all). The assessed rivers represent approximately 46% of the named rivers in the Chicopee River Basin that have been assigned SARIS (Stream and River Information System) code numbers (Halliwell *et al.* 1982). Numerous rivers have never been assessed, and are not included in this report. This report also includes information on seventy-four lakes, ponds, or impoundments that have been assigned a Pond and Lake Identification System (PALIS) number in the Chicopee River Watershed, representing 93% of the total lake acreage

A summary of the use assessments for the rivers and lakes in the Chicopee River Watershed is provided in Table 1. See also Figures 1-5 for a summary of the designated use assessments detailed in this report.

Table 1. River miles and lake acreage in the Chicopee River Basin assessed as support, impaired, or not assessed for each use (with percentage of total river miles or acreage in report).

Use	River (Total Length included in report - 212.6 miles)		
	Support	Impaired	Not Assessed
Aquatic Life	116.1 (55%)	2.4 (1%)	94.1 (44%)
Fish Consumption	0 (0%)	0.3 (0.1%)	212.3 (99.9%)
Drinking Water	Not Assessed in this Report ¹		
Primary Contact	77.0 (36%)	24.2 (11%)	111.4 (52%)
Secondary Contact	98.2 (46%)	3.0 (1%)	111.4 (52%)
Aesthetics	192.9 (91%)	0 (0%)	19.7 (9%)
	Lakes (Total Acreage included in report--29798 ²)		
Use	Support	Impaired	Not Assessed
Aquatic Life	0 (0%)	25630 (89%)	3268 (11%)
Fish Consumption	0 (0%)	25936 (87%)	3862 (13%)
Drinking Water	Not Assessed in this Report ¹		
Primary Contact	24012 (80.6%)	544 (1.8%)	5242 (17.6%)
Secondary Contact	24012 (80.6%)	544 (1.8%)	5242 (17.6%)
Aesthetics	24239 (81%)	544 (2%)	5015 (17%)
<p>1- While this use is not assessed in this report, information on drinking water source protection and finish water quality is available at http://www.mass.gov/dep/water/drinking.htm and from local public water suppliers</p> <p>2 - Quabbin Reservoir (20412 acres) constitutes 81 percent of the lake acreage in the Chicopee River basin.</p>			

Fish Consumption Use

The following waterbodies in the Chicopee River Basin are impaired for the *Fish Consumption Use*: Ware River (MA36-03), Pottapaug Pond Basin (MA36125), Quabbin Reservoir (MA36129), Lake Lashaway (MA36079), Quaboag Pond (MA36130), Quacumquasit Pond (MA36131), Wickaboag Pond (MA36166). There is also currently a statewide fish consumption advisory (see Figure 2, MA DPH 2001). A TMDL, a Federal Clean Water Act mandated document that identifies pollutant load reductions necessary for certain regional waterbodies to meet and maintain compliance with state and federal water quality standards, was recently approved for mercury by the U.S. EPA.

The Northeast Regional Mercury Total Maximum Daily Load (TMDL) was prepared by the New England Interstate Water Pollution Control Commission (NEIWPCC) in cooperation with the states of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. The TMDL covers waterbodies that are impaired primarily due to atmospheric deposition of mercury (Northeast States 2007). All of the waterbodies impaired for *Fish Consumption Use* and listed above with the exception of Ware River (MA36-03) and Quaboag Pond (MA361630) are covered by this TMDL. The TMDL target for Massachusetts is 0.3 ppm or less of mercury in fish tissue. The plan calls for a 75% reduction of in-region and out of region atmospheric sources by 2010 and a 90% or greater reduction in the future (NEIWPCC 2007). The TMDL will be reassessed in 2010 based on an evaluation of new on-going monitoring and air deposition data. Final targets will be determined at that time. It should be noted that not all river segments or lakes will have specific recommendations. Numerous general recommendations detailed below apply to these river segments or lakes.

GENERAL RECOMMENDATIONS

Bacteria source tracking studies should be conducted as appropriate in the seven river segments that are impaired for *Primary Contact Recreation Use*.

Continue to conduct biological and water quality monitoring to evaluate the effect(s), if any of National Pollution Discharge Elimination (NPDES) discharges, water withdrawals, and non-point sources of pollution and to document any changes in water quality as a result of infrastructure improvements/pollution abatement controls. Specific attention should be given towards gauging *Primary* and *Secondary Contact Recreation Uses* in segments impaired for these uses and those segments affected by CSO discharges.

Baseline sampling and aquatic macrophyte mapping should be conducted to evaluate the status of designated uses of lakes in the basin with special attention to sampling lakes with suspected infestations of non-native aquatic macrophytes.

Fish passage should be encouraged at both hydropower plants and other dams in the watershed. In addition, dam removal should be encouraged to promote ecological continuity as feasible.

The Northeast Regional Mercury Total Maximum Daily Load (TMDL) should be successfully implemented, with a minimum of a 90 percent control on out-of region coal-fired power plants emissions and successful control of in-state/regional reductions in mercury sources (NEIWPC 2007). Fish toxics monitoring should be conducted in waterbodies impaired for the *Fish Consumption Use*

CHICOPEE RIVER (SEGMENT MA36-23)

Location: Red Bridge Impoundment Dam to Wilbraham Pumping Station (old WWTP), Wilbraham/Ludlow

Segment Length: 3.8 miles

Classification: Class B, Warm Water Fishery, CSO

This segment is on the Massachusetts Year 2006 Integrated List of Waters – Category 5, “Waters requiring a TMDL”. Pollutants needing TMDLs: pathogens (MassDEP 2007b).

The MassDEP awarded money for the 604(b) grant entitled Chicopee River Watershed Basin Assessment. This project will address watershed assessment needs in the communities of Chicopee, Ludlow, Springfield, and Wilbraham that fall within the Chicopee River Basin. Stormwater infrastructure components will be identified, compiled into a database, and mapped; existing BMPs will be mapped and recommendations for future BMP implementation will be generated; existing water quality data will be compiled into a comprehensive database and analyzed to determine data gaps and to recommend future sampling efforts; and local water quality protection ordinances and bylaws will be reviewed and draft water protection bylaws prepared for communities within the study area.

FERC

Western Mass Electric Co. (Consolidated Edison Energy), Red Bridge Impoundment Station, is a FERC-exempt facility (FERC Exempt #10676) operating a 3,600-Kilowatt hydroelectric power station on the Chicopee River in Wilbraham (FERC 20 December 2000). Under its exempt status, the facility is required to release a continuous flow of 237 cfs from the Red Bridge Impoundment Dam. This facility is permitted to draw down the Red Bridge Impoundment to one-foot below crest from April to June and two-feet below crest during the remainder of the year. In 1997 MA DFW reached agreement with Consolidated Edison Energy, MA, on an interim measure, that their Red Bridge Impoundment Station could use between 140 – 300 cfs if a constant spillage is maintained over the spillway. The water levels at Red Bridge Impoundment are monitored and recorded and fluctuations are limited to three inches with a minimum flow released over the entire width of the spillway (Kleinschmidt Associates and CEEI 1999). In a 1998 letter to Consolidated Edison Energy, Inc. the USFWS described the minimum continuous flow release method at the Red Bridge Impoundment Station as inadequate (McCollum 2001). A slide gate has been installed at the Red Bridge Impoundment to ensure a more reliable minimum continuous flow release (Slater 2007).

I. Maxmat Co. (176 Cottage St., Wilbraham), Collins Dam Station, is a FERC-exempt facility (FERC Exempt #6544) operating a 1,500-Kilowatt hydroelectric power station on this segment of the Chicopee River (FERC 20 December 2000). The dam has a hydroelectric facility leased by Swift River Co., which, for the most part, maintains minimum flows of approximately 200 cfs. The Collins Dam was built in 1985 and is eight feet tall with four-foot flashboards.

WATER WITHDRAWALS AND PERMITTED DISCHARGES

WMA (Appendix E, Table E1)

Based on the available information there are no WMA regulated water withdrawals affecting this segment.

NPDES SURFACE WATER DISCHARGES (APPENDIX D, TABLE D1)

Consolidated Edison Energy Massachusetts Inc. (CEEMI) (MA0035823)

DESIGNATED USE ASSESSMENT

Aquatic Life Use

Habitat and Flow

Flow is regulated by two hydropower projects (discussed above) on this segment.

Water Chemistry

DWM conducted water quality monitoring at one station (CH02B–Miller Street/Cottage Avenue bridge, Ludlow/Wilbraham) along this segment of the Chicopee River between April and October 2003 (Appendix B). *In-situ* parameters were measured on seven occasions, including two pre-dawn occasions. Grab samples were also collected and analyzed for TSS, turbidity, ammonia-nitrogen, and total phosphorus (Appendix B).

Dissolved oxygen, temperature and pH at Station CH02B all met criteria. Ammonia-nitrogen concentrations in samples collected at Station CH02B were low, while total phosphorus concentrations were slightly elevated during the summer (Appendix B).

Given the generally good water quality conditions, the *Aquatic Life Use* is assessed as support. Due to the potential impacts of hydropower operations this segment is identified with an “Alert Status.”

Primary and Secondary Contact Recreation and Aesthetics Uses

DWM conducted fecal coliform and *E. coli* bacteria monitoring at one station (CH02B–Miller Street/Cottage Avenue bridge, Ludlow/Wilbraham) along this segment of the Chicopee River between April and October 2003 (Appendix B).






E. coli bacteria counts were low on both dry and wet weather sampling dates. The highest *E. coli* count was 160 cfu/100mL on 15 October 2003, a wet weather sampling date. The geometric mean of the *E. coli* counts was 20.8 cfu/100 mL.

Parameter	DWM 2003 (n=6)
Fecal coliform (cfu/100mL)	<2 -120
Geometric mean	28.2
<i>E. coli</i> (cfu/100mL)	<2 - 160
Geometric mean	20.8

No objectionable deposits, odors or scums were noted by DWM field crews with the exception of one occasion when an oily sheen and rusty flow was noticed on the downstream left bank. Water clarity, although sometimes unobservable, was generally noted to be clear with one occasion of slight turbidity. Aquatic plant density, periphyton and plankton were generally noted as unobservable.

Given the low bacteria counts, both *Primary* and *Secondary Recreation Contact Uses* are assessed as support. Given the general lack of objectionable conditions along this segment, the *Aesthetics Use* is assessed as support.

Chicopee River (Segment MA36-23) Use Summary Table

Designated Uses		Status
Aquatic Life		SUPPORT*
Fish Consumption		NOT ASSESSED
Primary Contact		SUPPORT
Secondary Contact		
Aesthetics		

RECOMMENDATIONS

Fish population and benthic invertebrate monitoring in this segment to assess the *Aquatic Life Use* should be conducted.

Conduct multiprobe monitoring upstream from the Collins Dam to collect more representative data and determine *Aquatic Life Use*.

Monitor the effects of hydropower activities on the Chicopee River.

Fish passage plans should be considered at the hydropower dams along this segment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

5 Post Office Sq., Suite 100

BOSTON, MA 02109-3912

November 16, 2011

Kenneth L. Kimmell, Commissioner
Massachusetts Department of Environmental Protection
1 Winter Street
Boston, MA 02108

Re: Massachusetts' 2010 Clean Water Act §303(d) List

Dear Mr. Kimmell:

Thank you for Massachusetts' submittal of the State's 2010 Clean Water Act (CWA) §303(d) list. In accordance with §303(d) of the CWA and 40 CFR §130.7, the U.S. Environmental Protection Agency (EPA) conducted a complete review of Massachusetts' 2010 §303(d) list. Based on this review, EPA has determined that Massachusetts' 2010 §303(d) list of water quality limited segments still requiring total maximum daily loads (TMDLs) meets the requirements of CWA §303(d) and EPA's implementing regulations. Therefore, EPA hereby approves Massachusetts' decision to include the waters the Commonwealth placed in Category 5 of Massachusetts' 2010 integrated list of surface waters, as well as Massachusetts' decision to remove specific waters from the 2010 list.

The submittal includes a list of those waters for which technology-based and other required controls for point and nonpoint sources are not stringent enough to attain or maintain compliance with the State's Water Quality Standards. The submittal also presents Massachusetts' TMDL strategy, which describes a priority-setting approach and identifies those waters for which TMDLs will be completed and submitted to EPA over time. The statutory and regulatory requirements, and EPA's review of Massachusetts' compliance with each requirement, are described in detail in the enclosed approval document.

The Massachusetts Department of Environmental Protection (MassDEP) also successfully completed a public participation process in 2010 during which the public was given the opportunity to review and comment on the Commonwealth's proposed §303(d) list. As a result of this effort, Massachusetts has considered public comments in the development of the final list. A summary of the public comments and MassDEP's response to comments were included in the final submittal.

We appreciate the effort that MassDEP has devoted to preparation of the 2010 §303(d) list and population of EPA's Assessment Database (ADB) from which the list is generated. My staff and I look forward to continued cooperation with MassDEP in implementing the requirements under CWA §303(d). Please feel free to contact me or Mary Garren at (617-918-1322) if you have any questions or comments on our review.

Sincerely,

/s/

Stephen S. Perkins, Director
Office of Ecosystem Protection

Enclosure

cc: Rick Dunn, MassDEP
Arthur Johnson, MassDEP
Rick McVoy, MassDEP
Mary Garren, EPA Region 1
Greg Dain, EPA Region 1
Ann Williams, EPA Region 1
Stephen Silva, Chief, Water Quality Branch, EPA Region 1

Appendix A

Category changes made in the Massachusetts 2010 Integrated Report

Waterbody impairments moving from Category 5 to Category 2

Cape Cod

Falmouth Inner Harbor (96908) MA96-17_2008 "Pathogens" removed - Shellfish use supported based on latest assessment by MA Division of Marine Fisheries.

Chicopee

Chicopee River (3625000) MA36-23_2008 "Pathogens" removed based on new assessment. Aquatic life, Primary and Secondary contact recreation and Aesthetic uses met

Sevenmile River (3626275) MA36-11_2008 "Pathogens" removed based on new assessment. Aquatic life, Primary and Secondary contact recreation and Aesthetic uses met

Sevenmile River (3626275) MA36-12_2008 "Pathogens" removed based on new assessment. Aquatic life, Primary and Secondary contact recreation and Aesthetic uses met.

Concord

Pine Brook (8247950) MA82A-14_2008 "Cause Unknown" removed because previous listing in Category 5 was inconsistent with assessment methodology. Aquatic Life and Aesthetic uses met.

Nashua

East Wachusett Brook (8145875) MA81-30_2008 "Pathogens" removed based on new assessment. Primary and Secondary contact recreation uses met

Nashua River (8143500) MA81-08_2008 "Cause Unknown" removed because previous listing in Category 5 was inconsistent with assessment methodology. "Unknown toxicity" and "Pathogens" removed based on new assessment. Aquatic Life, Primary and Secondary contact recreation and Aesthetic uses met

Squannacook River (8143950) MA81-19_2008 "Cause Unknown" removed because previous listing in Category 5 was inconsistent with assessment methodology. Aquatic life, Primary and Secondary contact recreation and Aesthetic uses met

Unnamed Tributary (Boylston Brook) (8145180) MA81-34_2008 "Cause Unknown" removed because previous listing in Category 5 was inconsistent with assessment methodology. Primary and Secondary contact recreation uses met

Westfield

Westfield River (3208250) MA32-04-2008 "Pathogens" removed based on public comment and review of Pioneer Valley Planning Commission data. Aquatic life, Primary and Secondary Contact recreation and Aesthetic uses met.

Quinebaug

Wielock Pond (41056) MA41056_2008 "Turbidity" removed based on new assessment. Secondary contact recreation and Aesthetic uses met

Waterbody impairments moving from Category 5 to Category 4a

Buzzards Bay

Back River (9663150) MA95-47_2008 "Fecal Coliform" removed - TMDL approved

Bread and Cheese Brook (9560150) MA95-58_2008 "Fecal Coliform" removed - TMDL approved