

APPENDIX E

CONTOOCOOK RIVER WATERSHED

(HUC8: 01070003)

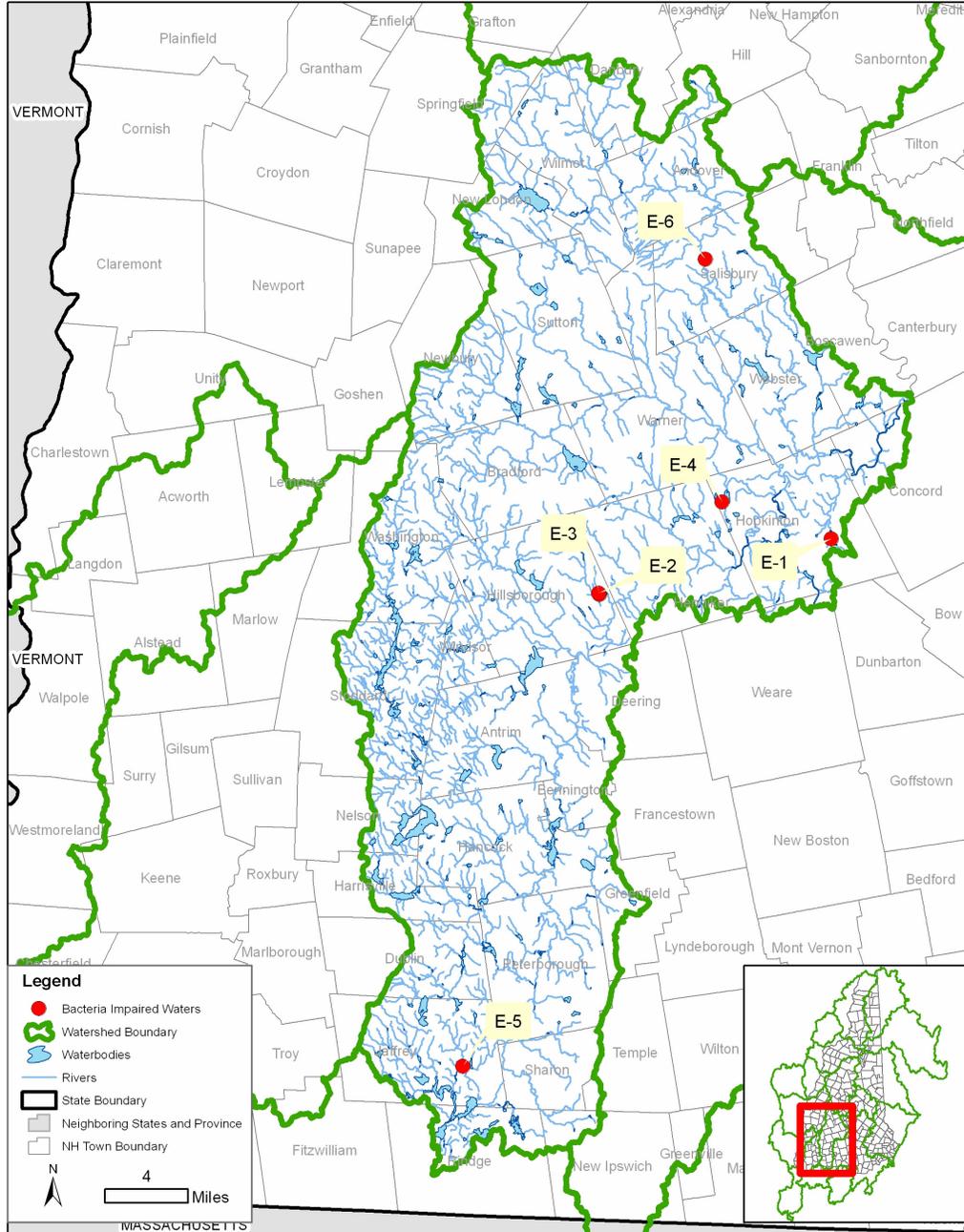
I. WATERSHED DESCRIPTION AND MAPS

The Contoocook River Watershed covers an area of approximately 764 square miles centered in the southwestern corner of the state. There are 36 towns located at least partially within the watershed, extending from the southern-most town of Rindge to the northern-most town of Danbury; west to east the town boundaries are Stoddard and Concord, respectively. As shown in Figure 1, the primary watercourse in the region is the Contoocook River which flows north from Peterborough at the southern end of the watershed bending to the east in Henniker, NH. The river ends at its confluence with the Merrimack River in Boscawen. Notable mountains in the area are the Buswell Ridges to the north and the Wapack Range in the south. There are many landforms, increasing in frequency from the northeast to the southwest, that are not in organized mountain chains. Lakes of notable size in the watershed include Highland Lake, Franklin Pierce Lake, and Pleasant Lake.

Based on the 2012 303(d) list, six assessment units (AUs) in this watershed are listed as being impaired for bacteria. The location of the bacteria impaired surface water AUs are shown on Figure 1 as red circles and red circles. Items E1 through E6 present the percent reduction needed to meet each water quality criterion (and TMDL), based on the highest recorded bacteria measurement that exceeds the criterion for the AU, as well as the bacteria data collected in the impaired AUID that was used to list the AU as impaired on the 2012 303(d) list.

FIGURE 1:

Contoocook River Watershed HUC 8 Watershed ID Number 01070003



II. WATER QUALITY DATA TABLES

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E1: Unknown River – Kimball Pond – Hopkinton Town Beach

AUID NHIMP700030507-01-02

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E coli*

Water Quality Criteria & TMDL for *E coli*

Single sample: 88 CTS/100ML

Geometric mean: 47 CTS/100mL

Percent reduction to meet TMDL:

Single sample: 54%

Geometric mean: in compliance

Data: NHDES EMD, 2012 303(d) list

Single sample *E coli* results (CTS/100ML)

Station Name	Station ID	Date	Result
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	06/27/07	10
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/17/07	2
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/07/07	8
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	06/26/08	2
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/04/08	6
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/26/08	6
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/06/09	11
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/30/09	30
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/25/09	4
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/12/10	14
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/05/10	56
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/09/10	2
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	06/29/11	2
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/08/11	2
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/19/11	140
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/21/11	2
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/02/11	1
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/08/11	4
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	06/27/07	8
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/17/07	2
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/07/07	4
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	06/26/08	12
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/04/08	5
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/26/08	1
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/06/09	6
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/30/09	44
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/25/09	4
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/12/10	4
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/05/10	190
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/09/10	4
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	06/29/11	6
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/08/11	4
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/19/11	8
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	07/21/11	8
Unknown River – Kimball Pond – Hopkinton Town Beach	BCHHTBHOPLF	08/02/11	4

Unknown River – Kimball Pond – Hopkinton Town Beach
Shaded cells indicate exceedance of water quality criteria

BCHHTBHOPLF

08/08/11

10

Geometric mean *E. coli* results (CTS/100ML)

Station Name

Date

Result

Unknown River – Kimball Pond – Hopkinton Town Beach

08/07/07

4.66

Unknown River – Kimball Pond – Hopkinton Town Beach

08/04/08

5.18

Unknown River – Kimball Pond – Hopkinton Town Beach

08/26/08

3.66

Unknown River – Kimball Pond – Hopkinton Town Beach

08/25/09

10.57

Unknown River – Kimball Pond – Hopkinton Town Beach

08/09/10

12.97

Unknown River – Kimball Pond – Hopkinton Town Beach

08/08/11

5.05

E2: Gould Pond – Eastman Park Beach

AUID NHLAK700030501-01-02

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E coli*

Water Quality Criteria & TMDL for *E coli*

Single sample: 88 CTS/100MI

Geometric mean: 47 CTS/100mL

Percent reduction to meet TMDL:

Single sample: 27%

Geometric mean: in compliance

Data: NHDES EMD, 2012 303(d) list

Single sample *E coli* results (CTS/100ML)

Station Name	Station ID	Date	Result
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBCR	07/15/10	64
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBCR	08/06/10	88
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBLF	07/15/10	46
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBLF	08/06/10	120
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBLF	09/03/10	8
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBLF	07/14/11	46
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBLF	07/18/11	64
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBLF	08/08/11	12
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBRT	07/15/10	42
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBRT	08/06/10	94
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBRT	09/03/10	3
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBRT	07/14/11	110
GOULD POND – EASTMAN PARK BEACH	BCHEMPHSBRT	07/18/11	10
Gould Pond – Eastman Park Beach	BCHEMPHSBRT	08/08/11	10

Shaded cells indicate exceedance of water quality criteria

Geometric mean *E. coli* results (CTS/100ML)

Station Name	Date	Result
GOULD POND – EASTMAN PARK BEACH	9/3/10	36.20
GOULD POND – EASTMAN PARK BEACH	8/8/11	27.01

E3: Gould Pond- Emerald Beach

AUID NHLAK70030501-01-04

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E coli*

Water Quality Criteria & TMDL for *E coli*

Single sample: 88 CTS/100MI

Geometric mean: 47 CTS/100mL

Percent reduction to meet TMDL:

Single sample: 78%

Geometric mean: 39%

Data: NHDES EMD, 2012 303(d) list

Single sample *E coli* results (CTS/100ML)

Station Name	Station ID	Date	Result
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	07/15/10	12
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	08/06/10	12
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	09/03/10	2
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	07/14/11	400
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	07/18/11	200
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	07/21/11	120
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	07/26/11	44
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	07/29/11	28
GOULD POND – EMERALD BEACH	BCHEMDHSBLF	08/08/11	52
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	07/15/10	16
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	08/06/10	8
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	09/03/10	4
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	07/14/11	80
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	07/18/11	240
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	07/21/11	138
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	07/26/11	56
GOULD POND – EMERALD BEACH	BCHEMDHSBRT	07/29/11	8
Gould Pond – Emerald Beach	BCHEMDHSBRT	08/08/11	56

Shaded cells indicate exceedance of water quality criteria

Geometric mean *E. coli* results (CTS/100ML)

Station Name	Date	Result
GOULD POND – EMERALD BEACH	9/3/10	7.27
GOULD POND – EMERALD BEACH	8/8/11	76.61

Shaded cells indicate exceedance of water quality criteria

E4: Clement Pond -Camp Merrimac Beach

AUID NHLAK70030505-01-02

Characteristics: freshwater, class B designation, designated beach, primary contact recreation.

Impairment: *E coli*

Water Quality Criteria & TMDL for *E coli*

Single sample: 88 CTS/100MI

Geometric mean: 47 CTS/100mL

Percent reduction to meet TMDL:

Single sample: 66%

Geometric mean: in compliance

Data: NHDES EMD, 2012 303(d) list

Single sample *E coli* results (CTS/100ML)

Station Name	Station ID	Date	Result
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	8/7/02	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	7/13/04	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	8/3/06 1	24
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	7/17/07	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	8/5/08	24
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	7/20/09	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	7/7/10	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	7/13/11	140
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPLF	7/18/11	6
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	8/7/02	2
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	7/13/04	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	8/3/06	4
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	7/17/07	0
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	8/5/08	2
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	7/20/09	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	7/7/10	1
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	7/13/11	260
CLEMENT POND – CAMP MERRIMAC BEACH	BCHMERHOPRT	7/18/11	6

Shaded cells indicate exceedance of water quality criteria

Geometric mean *E. coli* results (CTS/100ML)

Station Name	Date	Result
CLEMENT POND – CAMP MERRIMAC BEACH	7/18/11	33.83

E5: Unnamed Brook

AUID NHRIV700030101-37

Characteristics: freshwater, class B designation, primary contact recreation.

Impairment: *E coli*

Water Quality Criteria & TMDL for *E coli*

Single sample: 406 CTS/100ML

Geometric mean: 126 CTS/100mL

Percent reduction to meet TMDL:

Single sample: 99%

Geometric mean: 99%

Data: NHDES EMD, 2012 303(d)

Single sample *E coli* results (CTS/100ML)

Station Name	Station ID	Date	Result
UNNAMED BROOK	2046-002-A	10/10/08	9300
UNNAMED BROOK	2046-003	10/9/08	20000
UNNAMED BROOK	2046-004	10/9/08	20000
UNNAMED BROOK	2046-004	10/10/08	260000
UNNAMED BROOK	2046-005	10/9/08	20000
UNNAMED BROOK	2046-005	10/10/08	2000000

Shaded cells indicate exceedance of water quality criteria

Geometric mean *E. coli* results (CTS/100ML)

Station Name	Date	Result
UNNAMED BROOK	10/9/08	27898.40

Shaded cells indicate exceedance of water quality criteria

E6: Blackwater River

AUID NHRIV700030403-17

Characteristics: freshwater, class A designation, primary contact recreation.

Impairment: *E coli*

Water Quality Criteria & TMDL for *E coli*

Single sample: 153 CTS/100MI

Geometric mean: 47 CTS/100mL

Percent reduction to meet TMDL:

Single sample: 45%

Geometric mean: 60%

Data: NHDES EMD, 2012 303(d)

Single sample *E coli* results (CTS/100ML)

Station Name	Station ID	Date	Result
BLACKWATER RIVER	07-BKW	6/27/11	200
BLACKWATER RIVER	07-BKW	7/21/11	30
BLACKWATER RIVER	07-BKW	8/17/11	280
BLACKWATER RIVER	07-BKW	9/20/11	10

Shaded cells indicate exceedance of water quality criteria

Geometric mean *E. coli* results (CTS/100ML)

Station Name	Date	Result
BLACKWATER RIVER	8/17/11	118.88

Shaded cells indicate exceedance of water quality criteria