TABLE OF CONTENTS

Executive Summary xn

Introduction xx

What is Basinwide Water Quality Planning? xx
Goals of Basinwide Water Quality Planning xx
Benefits of Basinwide Water Quality Planning xxii
Division of Water Quality Functions and Locations xxii
How You Can Get Involved xxii
Some Other Reference Materials xxii
How to Read the Basinwide Plan xxiii

Chapter 1 1
French Broad River Basin Subbasin 04-03-01
Including the West Fork, North Fork and Middle Forks of the French Broad River, Little River, French Broad River, Peter Weaver and Morgan Mill Creeks

1.1 Subbasin Overview 1

1.2 Use Support Assessment Summary 5

1.3 Status and Recommendations of Previously and Newly Impaired Waters 5

1.3.1 West Fork French Broad River [AU# 6-2-(0.5)b] 5

1.3.2 Peter Weaver Creek [AU# 6-10a and b] 7

1.3.3 Morgan Mill Creek [AU# 6-10-1a, b and c] 8

1.4 Status and Recommendations for Waters with Noted Impacts 9

1.4.1 Little River [AU# 6-38-(20)] 9

1.5 Additional Water Quality Issues within Subbasin 04-03-01 10

Chapter 2 11
French Broad River Basin Subbasin 04-03-02
Including the French Broad River, Hominy and South Hominy Creeks, Mud Creek Watershed, Cane Creek, Newfound Creek, Reems Creek, Sandymush Creek, Bent Creek, Swannanoa River, Ross Creek, Lake Julian, Moore Creek, Canie, Burnett Reservoir and Lake Kenilworth

2.1 Subbasin Overview 11

2.2 Use Support Assessment Summary 17

2.3 Status and Recommendations of Previously and Newly Impaired Waters 17

2.3.1 Mud Creek Watershed 18

Mud Creek [AU# 6-55c and d] 18

Bat Fork [AU# 6-55-8-1b] 21

Devils Fork [AU# 6-55-8-2b] 22
2.3.2 Hominy Creek [AU# 6-76d] ...........................................23
2.3.3 French Broad River [AU# 6-(54.5)b, d and e] ......................24
2.3.4 Swannanoa River [AU# 6-78a and c] .................................26
2.3.5 Newfound Creek [AU# 6-84a, b, c and d] ..........................29
2.3.6 Ross Creek [AU#6-78-23b and c] .....................................31
2.3.7 Cane Creek [AU#6-57-(9)a] ...........................................32
2.3.8 Gash Creek [AU #6-47] ..................................................32
2.3.9 Mill Pond Creek [AU #6-51] .............................................33
2.3.10 South Hominy Creek [AU# 6-76-5] ..................................33

2.4 Status and Recommendations for Waters with Noted Impacts .................................34
2.4.1 Reems Creek [AU# 6-87-(10)] .........................................34
2.4.2 Gill Branch [AU# 6-76-12] ..............................................35
2.4.3 Bent Creek [AU #6-67-(7)] ..............................................35
2.4.4 North Fork Swannanoa River [AU #6-78-11-(13)] ...............35
2.4.5 Flat Creek [AU #6-78-6-(4)] .............................................36
2.4.6 Flat Creek [AU #6-88] .....................................................36
2.4.7 Moore Creek [AU# 6-76-8] ..............................................36
2.4.8 Canie Creek [AU# 6-76-12] .............................................36

2.5 Additional Water Quality Issues within Subbasin 04-03-02 ........................................37
2.5.1 Surface Waters Identified for Potential Reclassification ..................37

Chapter 3........................................................................................................38
French Broad River Basin Subbasin 04-03-03
Including the Davidson River, Boylston Creek, Mills River and North Fork Mills River

3.1 Subbasin Overview ........................................................................38
3.2 Use Support Assessment Summary ................................................41
3.3 Status and Recommendations of Previously and Newly Impaired Waters ..............41
3.3.1 Mills River [AU# 6-54-(1)a and b, 6-54-(4.5), 6-54-(5) and 6-54-(6.5)] ..........................41
3.3.2 Brandy Branch [AU # 6-54-6] .............................................46
3.4 Status and Recommendations for Waters with Noted Impacts .........................46
3.4.1 Davidson River [AU # 6-34-(1), 6-34-(15.5), 6-34-(17), 6-34-(21)] ..................46
3.4.2 Boylston Creek [AU#6-52-(6.5)] ........................................47
3.5 Additional Water Quality Issues within Subbasin 04-03-03 .............................48
3.5.1 Surface Waters Identified for Potential Reclassification ..................48

Chapter 4........................................................................................................49
French Broad River Basin Subbasin 04-03-04
Including the French Broad River, Little Ivy Creek (River), Ivy Creek, California Creek and Bull Creek

4.1 Subbasin Overview ........................................................................49
4.2 Use Support Assessment Summary ................................................53
4.3 Status and Recommendations of Previously and Newly Impaired Waters ..............53
4.3.1 Little Ivy Creek (River) [AU # 6-96-10a] ..................................53
Chapter 5

French Broad River Basin Subbasin 04-03-05
Including the Pigeon River, West and East Fork Pigeon River, Richland Creek, Fines Creek, Crabtree Creek, Hyatt Creek, Plott Creek, Raccoon Branch, Hurricane Creek, Lake Junaluska and Walters Lake

5.1 Subbasin Overview ...........................................................................................................59
5.2 Use Support Assessment Summary ................................................................................63
5.3 Status and Recommendations of Previously and Newly Impaired Waters ...............63
5.3.1 Pigeon River [AU# 5-(7)b] .......................................................................................64
5.3.2 Waterville (Walters) Lake [AU # 5-(7)e] .................................................................67
5.3.3 Richland Creek [AU # 5-16-(1)a, b, c, d and e; 5-16-(16)a] ...............................68
5.3.4 Lake Junaluska [AU # 5-16-(1)f] ..........................................................................69
5.3.5 Fines Creek [AU # 5-32] .......................................................................................69
5.3.6 Raccoon Creek [AU # 5-16-14] ..............................................................................70
5.3.7 Hyatt Creek [AU # 5-16-6a and b] .........................................................................71
5.4 Status and Recommendations for Waters with Noted Impacts ..................................71
5.4.1 Plott Creek [AU # 5-16-9] .....................................................................................71
5.4.2 Jonathan Creek [AU # 5-26-(7)] ............................................................................72
5.4.3 Crabtree Creek [AU# 5-22] ....................................................................................72

5.5 Additional Water Quality Issues within Subbasin 04-03-05 .................................73
5.5.1 Surface Waters Identified for Potential Reclassification .......................................73

Chapter 6

French Broad River Basin Subbasin 04-03-06
Including the Nolichucky River, North and South Toe Rivers, Big Rock Creek, Jacks Creek and Right Fork Cane Creek

6.1 Subbasin Overview ...........................................................................................................74
6.2 Use Support Assessment Summary ................................................................................77
6.3 Status and Recommendations of Previously and Newly Impaired Waters ..........77
6.3.1 Right Fork Cane Creek (AU#7-2-59-1) .................................................................77
6.3.2 Jacks Creek [AU# 7-2-63] .....................................................................................78
6.3.3 North Toe River [AU#7-2-(27.7)b] ........................................................................79
6.4 Status and Recommendations for Waters with Noted Impacts ..................................80
6.4.1 Big Rock Creek [AU#7-2-64] ................................................................................80
6.5 Additional Water Quality Issues within Subbasin 04-03-06 ..................................80

Table of Contents
Chapter 7

French Broad River Basin Subbasin 04-03-07
Including the Little Creek, Bald Mountain Creek, Cane River and Price Creek

7.1 Subbasin Overview

7.2 Use Support Assessment Summary

7.3 Status and Recommendations of Previously and Newly Impaired Waters
   7.3.1 Little Creek (AU# 7-3-33)
   7.3.2 Cane River [AU#7-3-(13.7)b]

7.4 Status and Recommendations for Waters with Noted Impacts
   7.4.1 Price Creek (AU# 7-3-21)
   7.4.2 Bald Mountain Creek (AU# 7-3-32)

7.5 Additional Water Quality Issues within Subbasin 04-03-07
   7.5.1 Bald Creek (AU#7-3-22)
   7.5.2 Straight Pipes
   7.5.3 Surface Waters Identified for Potential Reclassification

Chapter 8

North Carolina Water Quality Standards and Classifications

8.1 Description of Surface Water Classifications and Standards
   8.1.1 Statewide Classifications
   8.1.2 Statewide Water Quality Standards

8.2 Reclassification of Surface Waters
   8.2.1 Pending and Recent Reclassifications in the French Broad River Basin

Chapter 9

Population Growth, Land Cover Changes and Water Quality

9.1 General Sources of Pollution

9.2 Managing the Impacts of Growth, Development, and Stormwater Runoff
   9.2.1 Introduction
   9.2.2 Effects of Growth and Development in the French Broad River Basin
   9.2.3 The Role of Local Governments
   9.2.4 Maintain and Develop Riparian Buffers
   9.2.5 Protecting Headwaters
   9.2.6 Reduce Impacts of Future Development

Chapter 10

Water Quality Stressors

10.1 Stressor Identification
   10.1.1 Introduction and Overview
   10.1.2 Stressor Sources

10.2 Habitat Degradation
10.2.1 Sedimentation ................................................................. 104
10.2.2 Loss of Riparian Vegetation ........................................ 107
10.2.3 Loss of Instream Organic Microhabitats .................... 108
10.2.4 Channelization .............................................................. 108
10.2.5 Recommendations for Reducing Habitat Degradation 109

10.3 Fecal Coliform Bacteria ...................................................... 110

Chapter 11 ......................................................................................... 112
Agriculture and Water Quality

11.1 Animal Operations ............................................................... 112
11.2 Impacted Streams in Agricultural Areas ............................ 113
11.3 Agricultural Best Management Practices Funding Opportunities ..................................................... 114
   11.3.1 USDA – NRCS Environmental Quality Improvement Program (EQIP) ................................. 114
   11.3.2 NC Agriculture Cost Share Program .............................. 114
   11.3.3 Agricultural Sediment Initiative ................................. 115

Chapter 12 ......................................................................................... 116
Forestry in the French Broad River Basin

12.1 Forestland Ownership ......................................................... 116
   12.1.1 Forest Management ...................................................... 116
   12.1.2 Urban Forestry ............................................................. 117
   12.1.3 Forest Utilization ........................................................ 117
12.2 State Forests (SFs)/Educational State Forests (ESFs) ...... 117
12.3 Forestry Water Quality Regulations in North Carolina 117
   12.3.1 Forest Practices Guidelines for Water Quality (FPGs) ................................................................. 117
   12.3.2 Other Forestry Related Water Quality Regulations ................................................................. 118
   12.3.3 Water Quality Foresters .............................................. 118
   12.3.4 Forestry Best Management Practices (BMPs) ............................................................... 118

Chapter 13 ......................................................................................... 120
Wastewater and Stormwater Programs

13.1 NPDES Wastewater Discharge Permit Summary ......... 120
13.2 DWQ Stormwater Programs ................................................ 121
   13.2.1 NPDES Phase I ............................................................ 121
   13.2.2 NPDES Phase II .......................................................... 122
   13.2.3 State Stormwater Program .............................................. 122
13.3 Water Supply Watershed Stormwater Rules ................ 123
13.4 Septic Systems and Straight Piping ................................. 125

Chapter 14 ......................................................................................... 127
Water Resources

14.1 River Basin Hydrologic Units ............................................. 127
14.2 Minimum Streamflow ................................................................................................128
14.3 Interbasin Transfers ............................................................................................131
14.4 Water Quality Issues Related to Drought .........................................................131

Chapter 15 ................................................................................................................133
Natural Resources
  15.1 Ecological Significance of the French Broad River Basin ...............................133
  15.2 Rare Aquatic and Wetland-Dwelling Animal Species .....................................133
  15.3 Significant Natural Heritage Areas in the French Broad River Basin .............135
  15.4 Significant Aquatic Habitats in French Broad River Basin .............................136
  15.5 Public Conservation Lands .............................................................................139

Chapter 16 ................................................................................................................140
Water Quality Initiatives
  16.1 The Importance of Local Initiatives .................................................................140
  16.2 Federal Initiatives ............................................................................................144
      16.2.1 Clean Water Act – Section 319 Program ..............................................144
  16.3 State Initiatives ................................................................................................146
      16.3.1 North Carolina Ecosystem Enhancement Program ..............................146
      16.3.2 Clean Water Management Trust Fund ...............................................147

References .................................................................................................................155
# APPENDICES

I  Population and Growth Trends in the French Broad River Basin

II  Local Governments and Planning Jurisdictions in the French Broad River Basin

III  Land Cover in the French Broad River Basin

IV  DWQ Water Quality Monitoring Programs in the French Broad River Basin

V  Other Water Quality Data in the French Broad River Basin

VI  NPDES Discharges and Individual Stormwater Permits in the French Broad River Basin

VII  303(d) Listing and Reporting Methodology

VIII  French Broad River Basin Nonpoint Source Program Description and Contacts

IX  French Broad River Basin Workshop Summaries

X  Use Support Methodology and Use Support Ratings

XI  Glossary of Terms and Acronyms
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>General Map of the Entire French Broad River Basin</td>
<td>xviii</td>
</tr>
<tr>
<td>Figure 2</td>
<td>General Map of the French Broad River Basin in North Carolina</td>
<td>xix</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Basinwide Planning Schedule (2002 to 2007)</td>
<td>xx</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Division of Water Quality Regional Offices</td>
<td>xxiv</td>
</tr>
<tr>
<td>Figure 5</td>
<td>French Broad River Subbasin 04-03-01</td>
<td>2</td>
</tr>
<tr>
<td>Figure 6</td>
<td>French Broad River Subbasin 04-03-02</td>
<td>12</td>
</tr>
<tr>
<td>Figure 7</td>
<td>French Broad River Subbasin 04-03-03</td>
<td>39</td>
</tr>
<tr>
<td>Figure 8</td>
<td>French Broad River Subbasin 04-03-04</td>
<td>50</td>
</tr>
<tr>
<td>Figure 9</td>
<td>French Broad River Subbasin 04-03-05</td>
<td>60</td>
</tr>
<tr>
<td>Figure 10</td>
<td>French Broad River Subbasin 04-03-06</td>
<td>75</td>
</tr>
<tr>
<td>Figure 11</td>
<td>French Broad River Subbasin 04-03-07</td>
<td>83</td>
</tr>
<tr>
<td>Figure 12</td>
<td>ORWs and HWQs in the French Broad River Basin</td>
<td>92</td>
</tr>
<tr>
<td>Figure 13</td>
<td>Water Supply Watersheds in the French Broad River Basin</td>
<td>95</td>
</tr>
<tr>
<td>Figure 14</td>
<td>Diagram of Headwater Streams within a Watershed Boundary</td>
<td>101</td>
</tr>
<tr>
<td>Figure 15</td>
<td>Ownership of Forestland in the French Broad River Basin</td>
<td>116</td>
</tr>
<tr>
<td>Figure 16</td>
<td>French Broad River Basin Significant Natural Heritage Areas, Significant Aquatic Habitats and Public Conservation Lands</td>
<td>137</td>
</tr>
<tr>
<td>Figure 17</td>
<td>NCEEP Targeted Watersheds Map of the French Broad River Basin</td>
<td>151</td>
</tr>
</tbody>
</table>
### LIST OF TABLES

| Table 1 | Impaired Waters Monitored in the French Broad River Basin (1997 to 2002) | xiv |
| Table 2 | Basinwide Planning Schedule (2000 to 2007) | xxi |
| Table 3 | Five-Year Process for Development of an Individual Basinwide Plan | xxi |
| Table 4 | DWQ Assessment and Use Support Ratings Summary For Monitored Waters in Subbasin 04-03-01 | 3 |
| Table 5 | Summary of Use Support Ratings by Category in Subbasin 04-03-01 | 6 |
| Table 6 | DWQ Assessment and Use Support Ratings Summary of Monitored Waters in Subbasin 04-03-02 | 13 |
| Table 7 | Summary of Use Support Ratings by Category in Subbasin 04-03-02 | 18 |
| Table 8 | DWQ Assessment and Use Support Ratings Summary for Monitored Waters in Subbasin 04-03-03 | 40 |
| Table 9 | Summary of Use Support Ratings by Category in Subbasin 04-03-03 | 42 |
| Table 10 | DWQ Assessment and Use Support Ratings Summary for Monitored Waters in Subbasin 04-03-04 | 51 |
| Table 11 | Summary of Use Support Ratings by Category in Subbasin 04-03-04 | 54 |
| Table 12 | DWQ Assessment and Use Support Ratings Summary for Monitored Waters in Subbasin 04-03-05 | 61 |
| Table 13 | Summary of Use Support Ratings by Category in Subbasin 04-03-05 | 64 |
| Table 14 | DWQ Assessment and Use Support Ratings Summary for Monitored Waters in Subbasin 04-03-06 | 76 |
| Table 15 | Summary of Use Support Ratings by Category in Subbasin 04-03-06 | 78 |
| Table 16 | DWQ Assessment and Use Support Ratings Summary for Monitored Waters in Subbasin 04-03-07 | 84 |
| Table 17 | Summary of Use Support Ratings by Use Category in Subbasin 04-03-07 | 85 |
| Table 18 | Primary and Supplemental Surface Water Classifications | 90 |
| Table 19 | Registered Animal Operations in the French Broad River Basin (September 2003) | 113 |
| Table 20 | Summary of Agricultural Sediment Initiative Surveys | 115 |
| Table 21 | Summary of NPDES Dischargers and Permitted Flows for the French Broad River Basin (September 2003) | 121 |
| Table 22 | Communities in the French Broad River Subject to Stormwater Requirements | 124 |
| Table 23 | Results of Recent WaDE Surveys in the French Broad River Basin | 126 |
| Table 24 | Hydrologic Subdivisions in the French Broad River Basin | 127 |
| Table 25 | Estimated Interbasin Transfers in the French Broad River Basin (1997) | 131 |
| Table 26 | List of Rare Animals Associated with Aquatic and Wetland Habitats in the French Broad River Basin (September 2003) | 133 |
| Table 27 | Local Water Quality Initiatives | 141 |
| Table 28 | Projects Funded Through Clean Water Act Section 319 | 145 |
| Table 29 | NCEEP Targeted Local Watersheds (2004) | 148 |
| Table 30 | Projects in the French Broad River Basin Funded by the Clean Water Management Trust Fund (December 2003) | 152 |